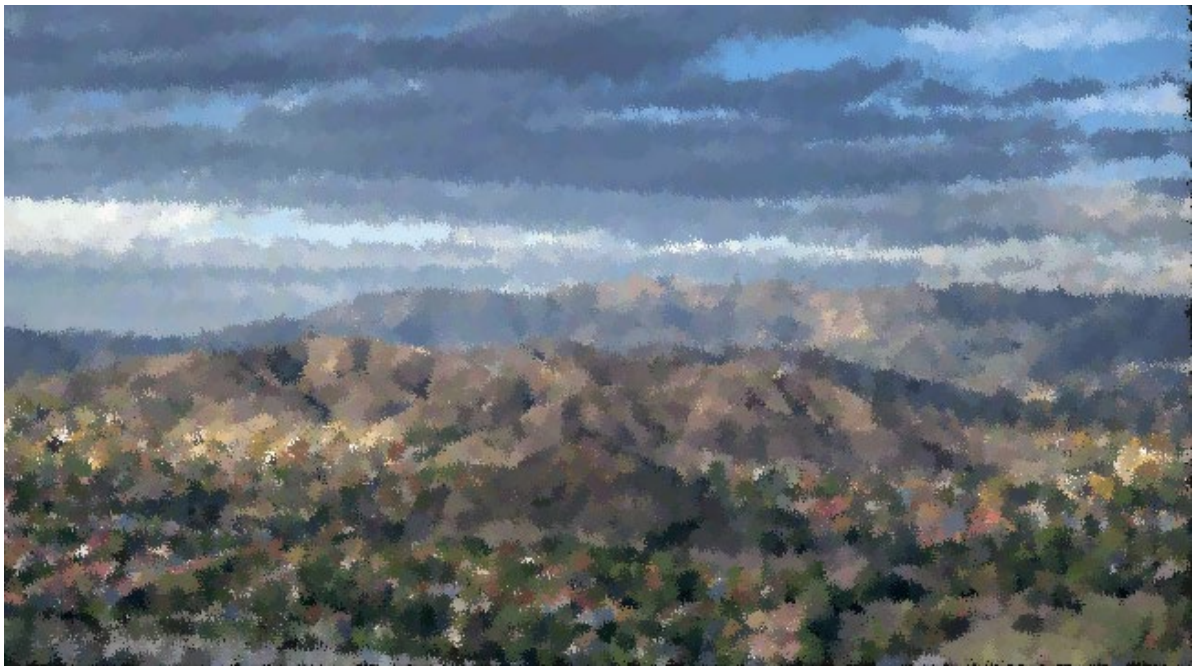


2026 Regional Transportation Plan & Sustainable Communities Strategy

Draft Program Environmental Impact Report

SCH #2025040852

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July 2026

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Table of Contents

Executive Summary ES-1
Project Synopsis ES-1
Project Objectives ES-2
Alternatives ES-3
Areas of Known Controversy ES-4
Issues to be Resolved ES-4
Issues Not Studied in Detail in the EIR ES-4
Summary of Impacts and Mitigation Measures ES-4

1 Introduction 1-1
1.1 Statement of Purpose 1-1
1.2 Project Background 1-1
1.3 Purpose and Legal Authority 1-2
1.4 Scope and Content 1-2
1.5 Implementation Issues and Future Environmental Review 1-3
1.5.1 Streamlining Under SB 375 1-4
1.5.2 Streamlining Under SB 226 1-5
1.5.3 Streamlining Under SB 743 1-6
1.5.4 Other Tiering Opportunities 1-6
1.6 EIR Content and Format 1-7
1.7 Public Review and Participation Process 1-8
1.8 Environmental Review Process 1-9
1.9 Lead and Responsible Agencies 1-10

2 Project Description 2-1
2.1 Lead Agency 2-1
2.2 Background 2-1
2.3 Project Objectives 2-5
2.4 Project Location 2-6
2.5 Project Characteristics 2-8
2.6 Intended Use of the EIR 2-18
2.6.1 Agencies Expected to Use EIR in Decision-making 2-18
2.6.2 Required Permits and Approvals 2-19
2.7 Relationship with Other Plans and Programs 2-20

3 Environmental Setting 3-1
3.1 Regional Setting 3-1
3.2 Regional Transportation System 3-1
3.2.1 Highways and Roadways 3-1
3.2.2 Transit and Rail Services 3-2
3.2.3 Airports 3-3
3.2.4 Active Transportation/Complete Streets 3-3
3.3 Mitigation Approach, EIR Baseline, Approach for Direct and Cumulative Analysis 3-3
3.3.1 Mitigation Approach 3-3
3.3.2 EIR Baseline 3-4
3.3.3 Approach for Direct Impact Analysis 3-5

3.3.4 Approach for Cumulative Analysis 3-5

4 Environmental Impact Analysis 4-1
4.1 Aesthetics 4.1-1
4.1.1 Setting 4.1-1
4.1.2 Regulatory Setting 4.1-4
4.1.3 Impact Analysis 4.1-7
4.1.4 Cumulative Impacts 4.1-15
4.2 Agriculture and Forestry 4.2-1
4.2.1 Setting 4.2-1
4.2.2 Regulatory Setting 4.2-5
4.2.3 Impact Analysis 4.2-9
4.2.4 Cumulative Impacts 4.2-17
4.3 Air Quality 4.3-1
4.3.1 Setting 4.3-1
4.3.2 Regulatory Setting 4.3-10
4.3.3 Impact Analysis 4.3-23
4.3.4 Cumulative Impacts 4.3-39
4.4 Biological Resources 4.4-1
4.4.1 Setting 4.4-1
4.4.2 Regulatory Setting 4.4-18
4.4.3 Impact Analysis 4.4-22
4.4.4 Cumulative Impacts 4.4-41
4.5 Cultural Resources 4.5-1
4.5.1 Setting 4.5-1
4.5.2 Regulatory Setting 4.5-7
4.5.3 Impact Analysis 4.5-15
4.5.4 Cumulative Impacts 4.5-21
4.6 Energy 1
4.6.1 Setting 1
4.6.2 Regulatory Setting 4
4.6.3 Impact Analysis 12
4.6.4 Cumulative Impact Analysis 19
4.7 Geology and Soils 4.7-1
4.7.1 Setting 4.7-1
4.7.2 Regulatory Setting 4.7-14
4.7.3 Impact Analysis 4.7-21
4.7.4 Cumulative Impacts 4.7-29
4.8 Greenhouse Gas Emissions and Climate Change 4.8-1
4.8.1 Setting 4.8-1
4.8.2 Regulatory Setting 4.8-5
4.8.3 Impact Analysis 4.8-15
4.8.4 Cumulative Impacts 4.8-28
4.9 Hazards and Hazardous Materials 4.9-1
4.9.1 Setting 4.9-1
4.9.2 Regulatory Setting 4.9-6
4.9.3 Impact Analysis 4.9-15
4.9.4 Cumulative Impacts 4.9-22

4.10 Hydrology and Water Quality 4.10-1
4.10.1 Setting 4.10-1
4.10.2 Regulatory Setting 4.10-8
4.10.3 Impact Analysis 4.10-15
4.10.4 Cumulative Impacts 4.10-28
4.11 Land Use and Planning 4.11-1
4.11.1 Setting 4.11-1
4.11.2 Regulatory Setting 4.11-1
4.11.3 Impact Analysis 4.11-10
4.11.4 Cumulative Impacts 4.11-14
4.12 Noise 4.12-1
4.12.1 Setting 4.12-1
4.12.2 Regulatory Setting 4.12-6
4.12.3 Impact Analysis 4.12-13
4.12.4 Cumulative Impacts 4.12-27
4.13 Population and Housing 4.13-1
4.13.1 Setting 4.13-1
4.13.2 Regulatory Setting 4.13-2
4.13.3 Impact Analysis 4.13-8
4.13.4 Cumulative Impacts 4.13-11
4.14 Transportation 4.14-1
4.14.1 Setting 4.14-1
4.14.2 Regulatory Setting 4.14-10
4.14.3 Impact Analysis 4.14-18
4.14.4 Cumulative Impacts 4.14-28
4.15 Tribal Cultural Resources 4.15-1
4.15.1 Setting 4.15-1
4.15.2 Regulatory Setting 4.15-4
4.15.3 Impact Analysis 4.15-7
4.15.4 Cumulative Impacts 4.15-10
4.16 Wildfire 4.16-1
4.16.1 Setting 4.16-1
4.16.2 Regulatory Setting 4.16-3
4.16.3 Impact Analysis 4.16-9
4.16.4 Cumulative Impacts 4.16-14
4.17 Effects Considered Less Than Significant 4.17-1
4.17.1 Mineral Resources 4.17-1
4.17.2 Public Services 4.17-1
4.17.3 Recreation 4.17-3
4.17.4 Utilities and Service Systems 4.17-3

5 Other CEQA Required Discussions 5-1
5.1 Growth-Inducing Impacts 5-1
5.1.1 Employment, Household, and Population Growth 5-1
5.1.2 Removal of Obstacles to Growth 5-3
5.2 Irreversible Effects 5-4
5.3 List of Significant and Unavoidable Impacts 5-4

6 Alternatives 6-1
6.1 Alternatives Development and Screening Process 6-2
6.2 Alternatives Considered but Rejected 6-3
6.2.1 Missing Middle Housing with Increased Accessory Dwelling Unit Permitting 6-3
6.2.2 Aggressive VMT Reduction Alternative 6-4
6.3 Alternative 1: No Project Alternative 6-4
6.3.1 Description 6-4
6.3.2 Impact Analysis 6-4
6.4 Alternative 2: Mixed Use with Increased Transit Connections 6-12
6.4.1 Description 6-12
6.4.2 Impact Analysis 6-12
6.5 Environmentally Superior Alternative 6-20

7 References 7-1
7.1 Bibliography 7-1
7.2 List of Preparers 7-25

Tables

Table ES-1 Summary of Environmental Impacts, Mitigation Measures, and Residual Impacts ES-5
Table 1-1 NOP and Scoping Meeting Comments 1-8
Table 2-1 Tier I Roadway Projects 2-20
Table 2-2 Transit Projects 2-29
Table 2-3 Bicycle/Pedestrian Projects 2-30
Table 2-4 Aviation Projects 2-43
Table 2-5 Tier 1 Regional Study Projects 2-44
Table 4.2-1 Stanislaus County Annual Agricultural Crop Report 4.2-2
Table 4.2-2 Important Farmland Conversion in Stanislaus County 4.2-3
Table 4.3-1 Stanislaus County Climate Conditions 4.3-2
Table 4.3-2 Description of Selected Air Contaminants 4.3-3
Table 4.3-3 Ten-Year SJVAB Air Quality Summary (2015-2024) for Days Over the Ozone, PM2.5, and PM10 NAAQS and CAAQS 4.3-9
Table 4.3-4 Ambient Air Quality in Stanislaus County1 ..... 4.3-9
Table 4.3-5 Current Federal and State Ambient Air Quality Standards 4.3-11
Table 4.3-6 Regional Air Pollutant Emissions – StanCOG Region 4.3-30
Table 4.3-7 On-Road Mobile Source Particulate Matter Comparison 4.3-34
Table 4.3-8 On-Road Mobile Source Diesel Toxics Comparison 4.3-36
Table 4.4-1 Sensitive Communities and Critical Habitats Documented within the StanCOG Region 4.4-15
Table 4.5-1 California Historical Landmarks/Points of Historical Interest & Historical Resources in the StanCOG Region* 4.5-6
Table 4.6-1 2024 Electricity and Natural Gas Consumption in the StanCOG Region 2
Table 4.6-3 Daily and Annual VMT for the StanCOG Region in 2023 3

Table 4.6-4 Indirect Energy Consumption Factors....13
Table 4.6-5 Direct and Per-Household Transportation Energy Use....15
Table 4.8-1 Proposed 2026 RTP/SCS Total Daily VMT 4.8-15
Table 4.8-2 Proposed 2026 RTP/SCS Net Change in Transportation-Related Emissions (2023-2049).... 4.8-21
Table 4.8-3 Per Capita Passenger Vehicle CO2 Emissions Comparison 4.8-23
Table 4.8-4 2030 and 2045 GHG Emissions Compared to 1990 Levels 4.8-25
Table 4.10-1 Groundwater Pumping in Stanislaus County (2015).... 4.10-3
Table 4.10-2 303(d) Impaired Waterbodies in Stanislaus County 4.10-3
Table 4.12-1 Noise Abatement Criteria 4.12-6
Table 4.12-2 FTA Groundborne Vibration Architectural Damage Criteria - Construction.... 4.12-8
Table 4.12-3 FTA Groundborne Vibration Criteria - Operation 4.12-9
Table 4.12-4 Screening Distances for Noise Assessments – Rail Transit Projects (in feet).... 4.12-9
Table 4.12-5 Screening Distances for Noise Assessments – Bus Transit Projects (in feet).... 4.12-10
Table 4.12-6 Typical Noise Levels for Construction Equipment (dBA).... 4.12-15
Table 4.12-7 Screening Distances for Noise Assessments – Rail Transit Projects 4.12-18
Table 4.12-8 Screening Distances for Noise Assessments – Bus Transit Projects 4.12-19
Table 4.12-9 Vibration Source Levels for Construction Equipment.... 4.12-21
Table 4.12-10 Public and Private Airports within the StanCOG Region.... 4.12-26
Table 4.13-1 2025 Population, Housing and Employment for the StanCOG Region 4.13-1
Table 4.13-2 Forecasted Population Growth for the StanCOG Region.... 4.13-9
Table 4.14-1 Baseline VMT for StanCOG Region.... 4.14-2
Table 4.14-2 Bikeway Mileage in the StanCOG Region by Classification.... 4.14-7
Table 4.14-3 Airports and Heliports in StanCOG Region.... 4.14-8
Table 4.14-4 VMT Results Summary 4.14-22
Table 4.14-5 Induced Demand Effect on VMT 4.14-23
Table 5-1 Household and Employment Forecast by Jurisdiction.... 5-2
Table 6-1 Impact Comparison of Alternatives 6-21

Figures

Figure 1-1 Environmental Review Process.... 1-11
Figure 2-1 Regional Location.... 2-7
Figure 2-2 2026 Continued RTP/SCS Land Use Scenario.... 2-9
Figure 2-3 2022 RTP/SCS Transportation Improvement Projects – StanCOG Region.... 2-13
Figure 2-4 2022 RTP/SCS Transportation Improvement Projects – Modesto/Ceres.... 2-14
Figure 2-5 2022 RTP/SCS Transportation Improvement Projects – Turlock/Hughson/Waterford 2-15
Figure 2-6 2022 RTP/SCS Transportation Improvement Projects – Patterson/Newman 2-16
Figure 2-7 2022 RTP/SCS Transportation Improvement Projects – Riverbank/Oakdale 2-17
Figure 4.1-1 RTP/SCS Projects and StanCOG Region Scenic Highways/Routes 4.1-3

Figure 4.2-1 Important Farmland in Stanislaus County 4.2-4
Figure 4.2-2 FMMP Designations and Proposed 2026 RTP/SCS Projects – Ceres 4.2-12
Figure 4.2-3 FMMP Designations and Proposed 2026 RTP/SCS Projects – Patterson and Newman 4.2-13
Figure 4.2-4 FMMP Designations and Proposed 2026 RTP/SCS Projects – Riverbank and Oakdale 4.2-14
Figure 4.2-5 FMMP Designations and Proposed 2026 RTP/SCS Projects – Turlock, Hughson, and Waterford 4.2-15
Figure 4.3-1 SJVAB Air Quality Monitoring Stations (2025) 4.3-8
Figure 4.4-1 Vegetation Communities and Land Cover Types in the StanCOG Region 4.4-2
Figure 4.4-2 Wetlands, Canals,and Drainages in the StanCOG Region 4.4-9
Figure 4.4-3 Critical Habitats in the StanCOG Region 4.4-14
Figure 4.4-4 Essential Connectivity Areas in the StanCOG Region 4.4-17
Figure 4.10-1 Stanislaus County 100 and 500 Year Flood Zones 4.10-7
Figure 4.11-1 StanCOG Planning Area 4.11-2
Figure 4.15-1 Major Roadways and Classifications 4.15-3
Figure 4.15-2 Existing Bicycle Facilities in StanCOG Region 4.15-6
Figure 4.14-1 Major Roadways and Classifications 4.14-3
Figure 4.14-2 Existing Bicycle Facilities in StanCOG Region 4.14-6
Figure 4.16-1 StanCOG Region Fire Hazard Severity Zone Map 4.16-2

Appendices

Appendix A NOP and Responses
Appendix B Air Quality Emissions Calculations
Appendix C Special Status Species
Appendix D Energy Generation and Consumption Calculations
Appendix E StanCOG Transportation Model
Appendix F Greenhouse Gas Emission Calculations
Appendix G Tribal Consultation

Executive Summary

This document is an Environmental Impact Report (EIR) analyzing the environmental effects of the proposed 2026 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) proposed by the Stanislaus Council of Governments (StanCOG). This section summarizes the characteristics of the proposed project, alternatives to the proposed project, and the environmental impacts and mitigation measures associated with the proposed project.

Project Synopsis

This EIR has been prepared to examine the potential environmental effects of the 2026 RTP/SCS proposed by StanCOG. The following is a summary of the full project description, which can be found in Chapter 2, *Project Description,* of the EIR.

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Project Location

The 2026 RTP/SCS covers the entire area of Stanislaus County and includes the cities of Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock, and Waterford, as well as unincorporated areas within the County. In addition, the 2026 RTP/SCS covers the Turlock Municipal Airport to the southeast of Stanislaus County, which is operated by the City of Turlock and the site of proposed aviation projects. Capital improvement projects identified in the 2026 RTP/SCS are located on state highways, county roads and locally owned streets, as well as on airport property, transit district property and public utility lands.

Project Description

The most recent RTP/SCS was adopted by StanCOG in 2022 (2022 RTP/SCS). This 2026 update is a technical update which reflects changes in planning assumptions, planning lists, legislative requirements, demographics, local land use policies, and resource constraints while preserving the foundational elements of the 2022 RTP/SCS.

The 2026 RTP/SCS plans how the Stanislaus County Region will meet its transportation needs for the approximately 24-year period from 2025 to 2049, considering existing and projected future land use patterns as well as forecast population and job growth. Continued growth in the region would occur independently with or without implementation of the RTP/SCS. Therefore, the RTP/SCS is intended

to accommodate the inevitable growth of the region and distribution of that growth. The RTP/SCS would not directly increase population; rather, the RTP/SCS intends to provide a framework on how to plan for expected growth. The proposed 2026 RTP/SCS plans for approximately $12.1 billion in revenues expected to be available to the region from all transportation funding sources over the course of the planning period. It identifies and prioritizes expenditures of this anticipated funding for transportation projects of all transportation modes: highways, streets and roads, transit, rail, bicycle and pedestrian, as well as transportation demand management measures and intelligent transportation systems.

Project Objectives

StanCOG's general objectives for the proposed 2026 RTP/SCS are to ensure that the SCS and the transportation system planned for the StanCOG region accomplish the following:

- **Mobility and Accessibility.** Improve the ability of people and goods to move between desired locations and provide a variety of modal and mobility options.
- **Safety and Health.** Operate and maintain the transportation system to ensure public safety and security and improve the health of residents by improving air quality and providing more transportation options.
- **Social Equity.** Promote equitable access to opportunities by ensuring all populations share in the benefits of transportation improvements and are provided a range of transportation and housing choices.
- **System Preservation.** Maintain the transportation system in a state of good repair and protect the region's investment by maximizing use of existing transportation facilities.
- **Economic and Community Vitality.** Foster job creation, business attraction, retention, and expansion by improving quality of life. Facilitate economic development and opportunities through infrastructure investments that support goods movement within and through the region, including but not limited to the county's strategic freight corridors.
- **Smart Infrastructure.** Coordinate, monitor, and integrate planning and programming for intelligent transportation systems (ITS), smart infrastructure, demand-responsive transportation, and automated vehicles.
- **Sustainable Development Pattern.** Provide a mix of land uses and compact development patterns and encourage infill development to preserve agricultural land and natural resources.
- **Resiliency and Reliability.** Harden infrastructure to resist, absorb, recover from, or successfully adapt to adversity or a change in conditions including climate change.
- **Congestion Management.** Maintain or reduce congestion as compared to current levels.
- **Environmental Quality.** Consider environmental impacts when making transportation investments and minimize impacts on clean air and natural resources. Support infrastructure investments that facilitate vehicle electrification and the provision of electrification infrastructure in public and private parking facilities and structures.
- **Project Delivery.** Efficiently use available transportation funding to expedite project delivery of transportation improvements within the region for the benefit of residents of Stanislaus County and the traveling public in general

Alternatives

CEQA Guidelines Section 15126.6 requires all EIRs include a comparative evaluation of the proposed project with alternatives to the project that can attain most of the project's basic objectives but would avoid or substantially lessen any of the significant effects of the project. CEQA requires an evaluation of a "range of reasonable" alternatives, including the "no project" alternative. The following provides brief descriptions of the alternatives evaluated in this EIR. See Section 6, *Alternatives*, for full details. Based on the alternatives analysis, Alternative 2 was determined to be the environmentally superior alternative.

- Alternative 1: No Project Alternative
- Alternative 2: Mixed-Use with Increased Transit Connections

Alternative 1 (No Project Alternative)

Alternative 1, the No Project Alternative, represents the region continuing to move forward with the investments and policies in the previous (2022) RTP/SCS. Alternative 1 uses the 2022 Preferred Scenario as the starting point and updates it to reflect more recent development trends, but updated land use growth to better match general plans and/or area plans prepared since 2022. This alternative would keep future development roughly in the same pattern and using the same strategies that have been applied in past local general plans. Alternative 1 assumes 55 percent of residential growth would occur as single-family residences, with the remainder of growth occurring in multi-family housing. This alternative would only construct projects in the approved 2022 RTP and therefore would not include any new projects from the 2026 RTP/SCS, maintaining the current status of projects. This would result in fewer transportation projects being constructed. The transit program would be limited to the BRT project identified in the 2022 RTP/SCS, operating between the Modesto Transit Center in downtown Modesto and the Vintage Faire Mall in northwest Modesto. Complementary investments include implementation of the region's non-motorized plan and major roadway projects limited to those already voter approved.

Alternative 2 (Mixed-Use with Increased Transit Connections)

This alternative would concentrate new growth in horizontal mixed-use formats within high quality transit corridors and in transit-oriented communities. The primary objective of the Mixed-Use with Increased Transit Alternative (SCS Scenario B: Mixed-Use with Increased Transit Connections) is to increase residential and employment density, improve the jobs-housing balance, and support non-automobile mode shares. This alternative would involve the highest ratio of multi-family to single-family housing across all scenarios, predominantly in existing and new mixed-use developments. The transit investment program expands the single-corridor 2022 RTP/SCS BRT concept into a multi-corridor BRT network structured around the Modesto Transit Center as the primary hub. This alternative aims to establish a high-quality transit network while implementing the StanCOG Non-Motorized Transportation Plan (Countywide Bicycle and Pedestrian Plan) with an emphasis on first and last-mile connectivity to provide complete non-automobile connections between a wide variety of complementary land uses.

In terms of transportation investment, this alternative prioritizes additional transit projects such as expanding to a multi-corridor BRT network. This scenario would implement generally the same list of transportation projects as the proposed 2026 RTP/SCS but with funding focused on expanding transit first.

Areas of Known Controversy

The EIR scoping process did not identify any areas of known controversy for the proposed project. Responses to the Notice of Preparation of a Draft EIR and input received at the EIR scoping meeting held by the City are summarized in Chapter 1, *Introduction*.

Issues to be Resolved

Issues to be resolved include the choice among alternatives, and the nature of mitigation measures to be adopted.

Issues Not Studied in Detail in the EIR

All issues from the Appendix G checklist were studied in this EIR at a program level.

Summary of Impacts and Mitigation Measures

Table ES-1 summarizes the environmental impacts of the proposed project, proposed mitigation measures, and residual impacts (the impact after application of mitigation, if required). Impacts are categorized as follows:

- **Significant and Unavoidable.** An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved pursuant to CEQA Guidelines Section 15093.
- **Less than Significant with Mitigation Incorporated.** An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings under CEQA Guidelines Section 15091.
- **Less than Significant.** An impact that may be adverse but does not exceed the identified impact threshold levels and does not require mitigation measures.
- **No Impact.** The proposed project would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Table ES-1 Summary of Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure(s)	Residual Impact
Aesthetics		
Impact AES-1: The proposed transportation projects and land use projects envisioned under the proposed 2026 RTP/SCS would have a substantial adverse effect on scenic vistas and substantially damage scenic resources within highways identified to have high scenic qualities or designated by the state as eligible scenic highways. Impacts would be significant and unavoidable.	**AES-1(a) Discouragement of Architectural Features that Block Scenic Views.** The implementing agency shall, or can and should, design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Setbacks and acoustical design of adjacent structures shall be preferentially used as mitigation for potential noise impacts arising from increased traffic volumes associated with adjacent land development. The use of sound walls, or any other architectural features that could block views from the scenic highways or other view corridors, shall be discouraged to the extent possible. Where use of sound walls is found to be necessary, walls shall incorporate offsets, accents, and landscaping to prevent monotony. In addition, sound walls shall be complementary in color and texture to surrounding natural features. **AES-1(b) Tree Protection and Replacement.** The implementing agency for new roadways, extensions, and widenings of existing roadways, trails and facility improvements shall, or can and should, avoid the removal of existing mature trees to the extent possible consistent with adopted local City and County policies as applicable. The implementing agency of a particular 2026 RTP/SCS project shall replace any trees lost at a minimum 2:1 basis and incorporate them into the landscaping design for the roadway when feasible. The implementing agency also shall ensure the continued vitality of replaced trees through periodic maintenance.	Significant and unavoidable
Impact AES-2: the proposed transportation projects and land use patterns envisioned by the proposed 2026 RTP/SCS would in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site or its surroundings, and in an urbanized area, would conflict with applicable zoning and other regulations governing scenic quality. Impacts would be significant and unavoidable.	**AES-2(a) Recontouring for Adjacent Landforms.** Where a particular 2026 RTP/SCS project affects adjacent landforms, the local jurisdiction in which the project is located should ensure that recontouring provides a smooth and gradual transition between modified landforms and existing grade. This requirement can be accomplished through the placement of conditions on the project by the implementing agency during the project specific environmental review. **AES-2(b) Landscaping for Landform Variation.** The local jurisdiction in which a particular project is located should ensure that associated landscape materials and design enhance landform variation, provide erosion control and blend with the natural setting. This requirement can be accomplished through the placement of conditions on the project by the local jurisdiction during individual environmental review. To ensure compliance with approved landscape plans, the implementing agency should provide a performance security equal to the value of the landscaping/irrigation installation. **AES-2(c) Design Measures for Visual Compatibility.** The implementing agency shall, or can and should, require measures that minimize contrasts in scale and massing between the project and surrounding natural forms and developments. Strategies to achieve this include: ▪ Siting or designing projects to minimize their intrusion into important viewsheds; ▪ Avoiding large cuts and fills when the visual environment (natural or urban) would be substantially disrupted; ▪ Ensuring that re-contouring provides a smooth and gradual transition between modified landforms and existing grade; ▪ Developing transportation systems to be compatible with the surrounding environments (e.g., colors and materials of construction material; scale of improvements); ▪ Designing and installing landscaping to add natural elements and visual interest to soften hard edges, as well as to restore natural features along corridors where possible after widening, interchange modifications, re-alignment, or construction of ancillary facilities. The implementing agency shall provide a performance security equal to the value of the landscaping/irrigation installation to ensure compliance with landscaping plans; and ▪ Designing new structures to be compatible in scale, mass, character, and architecture with existing structures.	Significant and unavoidable
Impact AES-3: development of proposed transportation projects and land use patterns envisioned under the proposed 2026 RTP/SCS would create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area. Impacts are significant and unavoidable.	**AES-3(a) Roadway and Project Lighting.** The implementing shall, or can and should, minimize roadway lighting to the extent possible, consistent with safety and security objectives, and shall not exceed the minimum height requirements of the local jurisdiction in which the project is proposed. This may be accomplished through the use of back shields, hoods, low intensity lighting, and using as few lights as necessary to achieve the goals of the project. As part of planning, design, and engineering for projects, project sponsors shall ensure that projects proposed near light-sensitive uses avoid substantial spillover lighting. Potential design measures include, but are not limited to, the following: ▪ Lighting shall consist of cutoff-type fixtures that cast low-angle illumination to minimize incidental spillover of light into adjacent properties and undeveloped open space. Fixtures that project light upward or horizontally shall not be used. ▪ Lighting shall be directed away from habitat and open space areas adjacent to the project site. ▪ Light mountings shall be downcast, and the height of the poles minimized to reduce potential for backscatter into the nighttime sky and incidental spillover of light onto adjacent private properties and undeveloped open space. Light poles will be 20 feet high or shorter. Luminary mountings shall have non-glare finishes. ▪ Exterior lighting features shall be directed downward and shielded in order to confine light to the boundaries of the subject project. Where more intense lighting is necessary for safety purposes, the design shall include landscaping to block light from sensitive land uses, such as residences. **AES-3(b) Glare Reduction Measures.** Implementing agencies shall, or can and should, minimize and control glare from transportation and infill development projects near glare-sensitive uses through the adoption of project design features such as: ▪ Planting trees along transportation corridors to reduce glare from the sun; ▪ Creating tree wells in existing sidewalks; ▪ Adding trees in new curb extensions and traffic circles; ▪ Adding trees to public parks and greenways; ▪ Landscaping off-street parking areas, loading areas, and service areas; ▪ Limiting the use of reflective materials, such as metal; ▪ Using non-reflective material, such as paint, vegetative screening, matte finish coatings, and masonry; ▪ Screening parking areas by using vegetation or trees; ▪ Using low-reflective glass; and	Significant and unavoidable

Impact	Mitigation Measure(s)	Residual Impact
	▪ Complying with applicable general plan policies, municipal code regulations, city or local controls related to glare ▪ Tree species planted to comply with this measure shall provide substantial shade cover when mature. Utilities shall be installed underground along these routes wherever feasible to allow trees to grow and provide shade without need for severe pruning.	
Agriculture and Forestry Resources		
Impact AG-1: Proposed transportation improvements and land use projects envisioned by the Proposed 2026 RTP/SCS would result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use, or conflict with existing zoning for agriculture or a Williamson Act contract. This would be a significant and unavoidable impact.	**AG-1 Agricultural Land Impact Avoidance and Minimization.** Implementing agencies shall implement measures, where feasible based on project and site specific considerations, that include, but are not limited to those identified below. ▪ Require project relocation or corridor realignment, where feasible, to avoid Important Farmland, agriculturally zoned land and/or land under Williamson Act contract; ▪ Manage project construction to minimize the introduction of invasive species or weeds that may affect agricultural production on agricultural land adjacent to project sites. Managing project construction may include washing construction equipment before bringing equipment on-site, using certified weed-free straw bales for construction Best Management Practices (BMPs), and other similar measures. ▪ Provide buffers, berms, setbacks, fencing, or other project design measures to protect surrounding agriculture, and to reduce conflict with farming that could result from implementation of transportation improvements and/or development included as a part of the RTP/SCS. ▪ Achieve compensatory mitigation in advance of impacts through purchase or creation of mitigation credits or the implementation of mitigation projects through Regional Advance Mitigation Planning, as deemed appropriate by permitting agencies. ▪ Require acquisition of conservation easements on land in the same jurisdiction, if feasible, and at least equal in quality and size to converted Important Farmland, to offset the loss of Farmland. ▪ Institute new protection of farmland in the project area or elsewhere through the use of long-term restrictions on use, such as 20-year Farmland Security Zone contracts (Government Code Section 51296 et seq.) or 10-year Williamson Act contracts (Government Code Section 51200 et seq.).	Significant and unavoidable
Impact AG-2: Proposed transportation improvements and land use projects envisioned by the proposed 2026 RTP/SCS would not conflict with existing zoning for forest land, timberland, or timberland production, nor result in the loss of forest land or convert forest land to non-forest uses. Impacts would be less than significant.	No mitigation required	Less than significant
Air Quality		
Impact AQ-1: The proposed 2026 RTP/SCS would not conflict with or obstruct implementation of the applicable air quality plan. Impacts would be less than significant.	No mitigation required	Less than significant
Impact AQ-2: Construction activities associated with transportation improvements and land use projects envisioned by the 2026 RTP/SCS would result in a cumulatively considerable net increase in criteria pollutants for which the project region is in non-attainment under an applicable federal or State ambient air quality standard. This impact would be significant and unavoidable.	**AQ-2(a) Application of SJVAPCD Feasible Mitigation Measures.** For all projects, the implementing agency shall incorporate the most recent SJVAPCD feasible construction mitigation measures and/or technologies for reducing inhalable particles based on analysis of individual sites and project circumstances. Additional and/or modified measures may be adopted by SJVAPCD prior to implementation of individual projects under the proposed 2026 RTP/SCS; therefore, the most current list of feasible mitigation measures at the time of project implementation shall be used. The current SJVAPCD feasible mitigation measures include the following (SJVAPCD 2015): ▪ All disturbed areas, including storage piles, which are not being actively utilized for construction purposes shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, tarp cover, or other suitable cover or vegetative ground cover. ▪ All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. ▪ When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained. ▪ Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. ▪ An owner/operator of any site with 150 or more vehicle trips per day, or 20 or more vehicle trips per day by vehicles with three or more axles shall implement measures to prevent carryout and trackout. ▪ Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use. **AQ-2(b) Diesel Equipment Emissions Standards.** The implementing agency shall ensure, to the maximum extent technologically, logistically, and economically feasible, that diesel construction equipment meeting the most stringent CARB emissions standards for off-road heavy-duty diesel engines is used (e.g., as of 2026, this would be Tier 4 emission standards). Where the use of the most stringent CARB emissions standards for off-road heavy-duty diesel engines is not feasible, the next lower tier shall be used; where the use of the next lower tier is not feasible, the next lowest tier shall be used. **AQ-2(c) Electric Construction Equipment.** The implementing agency shall ensure that to the extent technologically, logistically, and economically feasible, construction equipment utilizes electricity from power poles rather than temporary diesel power generators and/or gasoline power generators.	Significant and unavoidable

Impact	Mitigation Measure(s)	Residual Impact
Impact AQ-3: Operation of the proposed transportation improvements and land use projects envisioned by the 2026 RTP/SCS would result in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment. Impacts would be significant and unavoidable.	**AQ-3(a) PM10 Emissions Reduction.** To help reduce regional PM10 emissions, StanCOG, in partnership with SJVAPCD and implementing agencies, shall: a. Support the use of existing air quality and transportation funds and seek additional funds to continue the implementation of the CARB Carl Moyer Program, which is intended to retrofit and replace trucks and locomotives to reduce particulate matter. b. Incentivize the reduction of mobile PM emissions from mobile exhaust and entrained PM sources such as tire wear, brake wear, and roadway dust through funding. c. Hold forums and workshops to encourage land use projects to incorporate transportation demand management (TDM) strategies as part of the project design to reduce the number of vehicular trips across the transportation network. Potential strategies could include ridesharing, carpooling, subsidized public transit, flexible work hours, and parking management measures. **AQ-3(b) Long-term Regional Operational Emissions**. Implementing agencies can and should implement long-term operational emissions reduction measures. Such reduction measures include the following: ▪ Require that all interior and exterior architectural coatings for all developments utilize coatings following SJVAPCD Rule 4601, Architectural Coatings. ▪ Increase building envelope energy efficiency standards in excess of applicable building standards and encourage new development to achieve zero net energy use. ▪ Install energy-efficient appliances, interior lighting, and building mechanical systems. Encourage installation of solar panels for new residential and commercial development. ▪ Locate sensitive receptors more than 500 feet of a freeway, 500 feet of urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. ▪ Locate sensitive receptors more than 1,000 feet of a major diesel rail service or railyards. Where adequate buffer cannot be implemented, implement the following: ▫ Install air filtration (as part of mechanical ventilation systems or stand-alone air cleaners) to reduce indoor pollution exposure for residents and other sensitive populations in buildings that are close to transportation network improvement projects. ▫ Use air filtration devices rated MERV-13 or higher. ▪ Plant trees and/or vegetation suited to trapping roadway air pollution and/or install sound walls between sensitive receptors and the pollution source. The vegetation buffer should be thick, with full coverage from the ground to the top of the canopy. ▪ Install higher efficacy public street and exterior lighting. ▪ Use daylight as an integral part of lighting systems in buildings. ▪ Use passive solar designs to take advantage of solar heating and natural cooling. ▪ Install light-colored “cool” roofs, cool pavements. ▪ Install solar and tankless hot water heaters. ▪ Exclude wood-burning fireplaces and stoves. ▪ Incorporate design measures and infrastructure that promotes safe and efficient use of alternative modes of transportation (e.g., neighborhood electric vehicles and bicycles) pedestrian access, and public transportation use. Such measures may include incorporation of electric vehicle charging stations, bicycle lanes, bicycle-friendly intersections, and bicycle parking and storage facilities. ▪ Incorporate design measures that promote ride sharing programs (e.g., by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading and waiting areas for ride sharing vehicles, and providing a web site or message board for coordinating rides). ▪ Incorporate other mitigation measures recommended by SJVAPCD.	Significant and unavoidable
Impact AQ-4: The proposed transportation improvements and land use projects envisioned by the 2026 RTP/SCS would not expose sensitive receptors to substantial particulate matter pollutant concentrations. Because the proposed 2026 RTP/SCS would decrease exposure to entrained dust, impacts would be less than significant.	No mitigation required**.**	Less than significant
Impact AQ-5: The transportation improvements and land use projects envisioned by the proposed 2026 RTP/SCS would expose sensitive receptors to substantial TAC concentrations. Impacts would be significant and unavoidable.	**AQ-5 Health Risk Reduction Measures.** Transportation project sponsor agencies shall implement the following measures: ▪ During project-specific design and CEQA review, the potential localized particulate (PM_{10} and $PM_{2.5}$) impacts and their health risks shall be evaluated for individual projects. Localized particulate matter concentrations shall be estimated using procedures and guidelines consistent with USEPA 2015’s *Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*. If required based on the project-level hotspot analysis, project-specific mitigation shall be added to the project design concept or scope to ensure that local particulate (PM_{10} and $PM_{2.5}$) emissions would not reach a concentration at any location that would cause estimated cancer risk to exceed the SJVAPCD threshold of 20 in one million. Per USEPA guidance (2015), potential mitigation measures to be considered may include but shall not be limited to: providing a retrofit program for older higher emitting vehicles, anti-idling requirements or policies, controlling fugitive dust, routing traffic away from populated zones and replacing older buses with cleaner buses. These measures can and should be implemented to reduce localized particulate impacts as needed. ▪ Retain a qualified air quality consultant to prepare a health risk assessment (HRA) in accordance with CARB and OEHHA requirements to determine the exposure of nearby residents to TAC concentrations. ▪ If impacts result in increased risks to sensitive receptors above significance thresholds, plant trees and/or vegetation suited to trapping TACs and/or sound walls between sensitive receptors and the pollution source. In addition, consistent with the general guidance contained in CARB’s *Air Quality and Land Use Handbook* (2005) and Technical Advisory *on Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways* (2017), appropriate and feasible measures shall be incorporated into project building design for land use projects	Significant and unavoidable

Impact	Mitigation Measure(s)	Residual Impact
	including residential, school and other sensitive uses located within 500 feet (or other appropriate distance as determined by the lead agency) of freeways, heavily travelled arterials, railways and other sources of diesel particulate matter, including roadways experiencing significant vehicle delays. The appropriate measures shall include one or more of the following methods, as appliable and as determined by a qualified professional. The implementing agency shall incorporate health risk reduction measures based on an analysis of individual sites and project circumstances. These measures may include: ▪ Avoid siting new sensitive land uses within 500 feet of a freeway or railway. ▪ Require development projects for new sensitive land uses to be designed to minimize exposure to roadway-related pollutants to the maximum extent feasible through inclusion of design components including air filtration and physical barriers. ▪ Do not locate sensitive receptors near the entry and exit points of a distribution center. ▪ Locate structures and outdoor living areas for sensitive uses as far as possible from the source of emissions. As feasible, locate doors, outdoor living areas and air intake vents primarily on the side of the building away from nearby high volume roadways or other pollution source. As feasible, incorporate dense, tiered vegetation that regains foliage year-round and has a long life span between the pollution source and the project. ▪ Maintain a 50-foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year). ▪ Install, operate and maintain in good working order a central heating and ventilation (HV) system or other air take system in the building, or in each individual residential unit, that meets the efficiency standard of the MERV 13. The HV system should include the following features: ▫ Installation of a high efficiency filter and/or carbon filter-to-filter particulates and other chemical matter from entering the building. ▫ Use of either HEPA filters or ASHRAE 85 percent supply filters. ▫ Completion of ongoing maintenance. ▪ Retain a qualified HV consultant or Home Energy Rating Systems rater during the design phase of the project to locate the HV system based on exposure modeling from the mobile and/or stationary pollutant sources. ▪ Maintain positive pressure within the building. ▪ Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air. ▪ Achieve a performance standard of at least four air exchanges per hour of recirculation. Achieve a performance standard of 0.25 air exchanges per hour of unfiltered infiltration if the building is not positively pressurized. ▪ Require project owners to provide a disclosure statement to occupants and buyers summarizing technical studies that reflect health concerns about exposure to highway/freeway exhaust emissions.	
Impact AQ-6: Construction of the proposed transportation improvements and land use projects envisioned by the 2026 RTP/SCS would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. Impacts would be less than significant.	No mitigation required	Less than significant
Biological Resources		
Impact BIO-1: Implementation of transportation projects and the land use scenario envisioned by the proposed 2026 RTP/SCS would have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. Impacts would be significant and unavoidable.	**BIO-1(a) Biological Resources Screening and Assessment.** On a project-by-project basis, a preliminary biological resource screening shall be performed to determine whether the project has any potential to impact biological resources. If it is determined that the project has no potential to impact biological resources, no further action is required. If the project would have the potential to impact biological resources, prior to construction, a qualified biologist shall conduct a biological resources assessment (BRA) or similar type of study to document the existing biological resources within the project footprint plus an appropriate buffer determined by a qualified biologist and to determine the potential impacts to those resources. The BRA shall evaluate the potential for impacts to all sensitive biological resources including, but not limited to special-status species, nesting birds, wildlife movement, sensitive plant communities/critical habitat and other resources judged to be sensitive by local, state, and/or federal agencies. Pending the results of the BRA, design alterations, further technical studies (i.e., protocol surveys) and/or consultations with the USFWS, CDFW and/or other local, state, and federal agencies may be required. These protocols may include, but are not limited to: ▪ Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants (USFWS 2000) ▪ Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018) ▪ Survey Considerations for CESA Candidate Bumble Bee Species (CDFW 2023) ▪ Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods (USFWS 1996) ▪ Revised Guidance on Site Assessment and Field Surveys for the California Red-legged Frog (USFWS 2005) ▪ Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander (USFWS and CDFW 2003) ▪ Considerations for Conserving the Foothill Yellow-legged Frog (CDFW 2018) ▪ Visual Encounter Survey Protocol for Rana Boylii in Lotic Environments (University of California, Davis 2017) ▪ Draft USGS Western Pond Turtle (Emys marmorata) Visual Survey Protocol for the Southcoast Ecoregion (U.S. Geological Survey 2006) ▪ Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations (USFWS 2010) ▪ Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California (California Energy Commission and CDFW 2010) ▪ Staff Report on Burrowing Owl Mitigation (CDFW 2012). ▪ Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 1999)	Significant and unavoidable

Impact	Mitigation Measure(s)	Residual Impact
	▪ Bat surveys consistent with CDFW recommendations The following Mitigation Measures [BIO-1(b) through BIO-1(i)] shall be incorporated, only as applicable, into the BRA and/or the project CEQA document for projects where specific resources are present, or may be present, and may be impacted by the project. Note that specific surveys described in the mitigation measures below may be completed as part of the BRA where suitable habitat is present. **BIO1(b) Special-Status Plant Species Surveys.** If completion of the project-specific BRA determines that special-status plant species have potential to occur on-site, the implementing agency shall contract a qualified biologist to complete surveys for special-status plants prior to any vegetation removal, grubbing, or other construction activity of each project (including staging and mobilization). The surveys shall be floristic in nature and shall be seasonally timed to coincide with the target species identified in the project-specific BRA. Whenever practicable, surveys shall be conducted in accordance with the most current protocols established by the CDFW, USFWS, and the local jurisdictions if said protocols exist A report of the survey results shall be submitted by the qualified biologist to the implementing agency for review. If special-status plant species are identified, mitigation measure BIO-1(c) shall apply. **BIO-1(c) Special-Status Plant Species Avoidance, Minimization, and Mitigation**. If state or federally listed and/or CRPR 1 and 2 species are found during special-status plant surveys [pursuant to mitigation measure BIO-1(b)], then the implementing agency shall redesign the project to avoid impacting these plant species to the maximum extent feasible. Occurrences of these species that are not within the immediate disturbance footprint but are located within 50 feet of disturbance limits shall have bright orange protective fencing installed at least 30 feet beyond their extent, or other distance as approved by a qualified biologist, to protect them from harm. If CRPR 3 and 4 species are found, the qualified biologist contracted to conduct the plant surveys [pursuant to mitigation measure BIO-1(b)] shall evaluate to determine if they meet criteria to be considered special-status, and if so, the same process as identified for CRPR 1 and 2 species shall apply. If special-status plants species cannot be avoided and would be impacted by a project implemented under the proposed 2026 RTP/SCS, the implementing agency shall require all impacts to be mitigated at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist for each species as a component of habitat restoration. A restoration plan shall be prepared and submitted by the qualified biologist to the implementing agency. **BIO-1(d) Endangered/Threatened Animal Species Habitat Assessment and Protocol Surveys.** If the results of the BRA determine that suitable habitat may be present for federally and/or state endangered or threatened animal species, the implementing agency shall require habitat assessments/surveys. Whenever practicable, the surveys shall be completed in accordance with CDFW and/or USFWS/NMFS protocols prior to issuance of any construction permits/project approvals. Alternatively, in lieu of conducting protocol surveys, the implementing agency may choose to assume presence within the project footprint and proceed with development of appropriate avoidance measures, consultation, and permitting, as applicable. If the target species is detected during protocol surveys, or protocol surveys are not conducted and presence assumed based on suitable habitat, mitigation measure BIO-1(e) shall apply. **BIO-1(e) Endangered/Threatened Animal Species Avoidance and Compensatory Mitigation.** If habitat is occupied or presumed occupied by federal and/or state listed or candidate species and would be impacted by the project, the implementing agency shall redesign the project in coordination with a qualified biologist to avoid impacting occupied/presumed occupied habitat to the extent feasible. If occupied or presumed occupied habitat cannot be avoided, the implementing agency shall estimate the total acreages for habitat that would be impacted prior to the issuance of construction permits/approvals. Compensatory mitigation shall be achieved through purchase of credits at a USFWS, NMFS and/or CDFW approved conservation bank if available for the affected species, and/or through providing compensatory mitigation to offset impacts to federal and/or state listed or candidate species habitat. Compensatory mitigation shall be provided at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist for permanent impacts. Compensatory mitigation may be combined/nested with special-status plant species and sensitive community restoration where applicable. Temporary impact areas shall be restored to pre-project conditions. If on and/or off-site compensatory mitigation sites are identified, the implementing agency shall retain a qualified biologist to prepare a Habitat Mitigation and Monitoring Plan (HMMP) to ensure the success of compensatory mitigation sites that are to be conserved for compensation of permanent impacts to federal and/or state listed or candidate species. The HMMP shall identify long term site management needs, routine monitoring techniques, techniques, and success criteria, and shall determine if the conservation site has restoration needs to function as a suitable mitigation site. If restoration is required on the conservation site, the HMMP shall contain the restoration components outlined under the Restoration Plan listed in measure BIO-1(c). The HMMP shall be submitted by the qualified biologist to the implementing agency for review and approval. **BIO-1(f) Endangered/Threatened and Candidate Species Avoidance and Minimization During Construction.** Implementing agencies shall select from these measures as appropriate depending on site conditions, the species with potential for occurrence and the results of the biological resources screening and assessment (measure BIO-1[a]). ▪ Preconstruction surveys for federal and/or state listed or candidate species with potential to occur shall be conducted by a qualified biologist where suitable habitat is present, as determined by the qualified biologist. The surveys shall occur not more than 48 hours prior to the start of construction activities. The survey area shall include the proposed disturbance area and all proposed ingress/egress routes, plus a 100-foot buffer. If any life stage of federal and/or state listed or candidate species is found within the survey area, the qualified biologist shall recommend an appropriate course of action, which may include consultation with USFWS, NMFS and/or CDFW. The results of the pre-construction surveys shall be submitted by the qualified biologist to the implementing agency for review and approval prior to start of construction. ▪ Ground disturbance shall be limited to the minimum necessary to complete the project. The project limits of disturbance shall be flagged. Areas of special biological concern shall have highly visible orange construction fencing.	

Impact	Mitigation Measure(s)	Residual Impact
	▪ All projects occurring within/adjacent to aquatic habitats (including riparian habitats and wetlands) shall be completed between April 1 and October 31, to avoid impacts to sensitive aquatic species. ▪ All projects occurring within or adjacent to sensitive habitats that may support federally and/or state endangered/threatened species shall have a qualified biologist present during all initial ground disturbing/vegetation clearing activities. Once initial ground disturbing/vegetation clearing activities have been completed, said biologist shall conduct daily pre-activity clearance surveys for endangered/threatened species. Alternatively, and upon approval of the CDFW and/or USFWS/NMFS or as outlined in project permits, said biologist may conduct site inspections at a minimum of once per week to ensure all prescribed avoidance and minimization measures are begin fully implemented. ▪ No endangered/threatened species shall be captured and relocated without authorization from the CDFW and/or USFWS. ▪ If pumps are used for dewatering activities, all intakes shall be completely screened with wire mesh not larger than five millimeters to prevent animals from entering the pump system. ▪ If at any time during construction of the project an endangered/threatened species enters the construction site or otherwise may be impacted by the project, all project activities shall cease. At that point, a qualified biologist shall recommend an appropriate course of action, which may include consultation with USFWS, NMFS and/or CDFW. ▪ All vehicle maintenance/fueling/staging shall occur at a minimum 100 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills. ▪ No equipment shall be permitted to enter wetted portions of any affected drainage channel. ▪ All equipment operating within streambeds (restricted to conditions in which water is not present) shall be in good conditions and free of leaks. Spill containment shall be installed under all equipment staged within stream areas and extra spill containment and clean up materials shall be located in close proximity for easy access. ▪ At the end of each workday, excavations shall be secured with cover or a ramp shall be provided to prevent wildlife entrapment. ▪ All trenches, pipes, culverts, or similar structures shall be inspected for animals prior to burying, capping, moving, or filling. **BIO-1(g) Non-Listed Special-status Animal Species Avoidance and Minimization.** Depending on the species identified in the BRA, the implementing agency shall select from among the following to reduce the potential for impacts to non-listed special-status animal species: ▪ Pre-construction clearance surveys shall be conducted within 14 days prior to the start of construction (including staging and mobilization) to identify all special-status animal species that may occur on-site. All non-listed special-status species shall be relocated from the site. A report of the pre-construction survey shall be submitted to the implementing agency for their review and approval prior to the start of construction. ▪ A qualified biologist shall be present during all initial ground disturbing activities, including vegetation removal, to recover special-status animal species unearthed by construction activities. ▪ Upon completion of the project, a qualified biologist shall prepare a final compliance report documenting all compliance activities implemented for the project, including the pre-construction survey results. **BIO-1(h) Preconstruction Surveys for Nesting Birds.** For construction activities occurring during the nesting season (generally February 1 to September 15), surveys for nesting birds covered by the CFGC, the MBTA, and Bald and Golden Eagle Protection Act shall be conducted by a qualified biologist no more than 10 days prior to vegetation removal activities. A qualified biologist shall conduct preconstruction surveys for raptors. The survey for the presence of bald and golden eagles shall cover all areas within of the disturbance footprint plus a one-mile buffer where access can be secured. The survey area for all other nesting bird and raptor species shall include the disturbance footprint plus a 300-foot and 500-foot buffer, respectively. If active nests (nests with eggs or chicks) are located, the qualified biologist shall establish an appropriate avoidance buffer based on the species biology and the current and anticipated disturbance levels occurring in vicinity of the nest. All buffers shall be marked using high visibility flagging or fencing, and, unless approved by the qualified biologist, no construction activities shall be allowed within the buffers until the qualified biologist has verified that young have fledged from the nest, or the nest fails. For bald or golden eagle nests identified during the preconstruction surveys, an avoidance buffer of up to one mile shall be established by a qualified biologist on a case-by-case basis in consultation with the USFWS and CDFW. The size of the buffer may be influenced by the existing conditions and disturbance regime, relevant landscape characteristics, and the nature, timing, and duration of the expected disturbance. The buffer shall be established between February 1 and September 15; however, buffers may be relaxed earlier than September 15 if a qualified ornithologist determines that a given nest has failed or that all surviving chicks have fledged, and the nest is no longer in use. A report of these preconstruction nesting bird surveys and nest monitoring (if applicable) shall be submitted to the implementing agency by the ornithologist for review and approval prior to the start of construction. **BIO-1(i) Worker Environmental Awareness Program.** Prior to initiation of construction activities (including staging and mobilization), all personnel associated with project construction shall attend Worker Environmental Awareness Program training, conducted by a qualified biologist retained by the implementing agency, to aid workers in recognizing special-status resources and review of the limits of construction and mitigation measures required. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction of the project. All employees shall sign a form documenting that they have attended the training and understand the information presented to them.	

Impact	Mitigation Measure(s)	Residual Impact
Impact BIO-2: Implementation of transportation projects and the land use scenario envisioned by the proposed 2026 RTP/SCS would result in substantial adverse impacts on sensitive natural communities and would result in substantial adverse impacts on state and federally protected wetlands. These impacts would be significant and unavoidable.	**BIO-2(a) Aquatic Resources Jurisdictional Delineation and Impact Avoidance.** If the results of Mitigation Measure BIO-1(a) indicates projects implemented under the proposed 2026 RTP/SCS occur within or adjacent to wetland, drainages, riparian habitats, or other areas that may fall under the jurisdiction of the CDFW, USACE, and/or RWQCB, a qualified biologist shall complete an aquatic resources delineation in accordance with the requirement set forth by each agency. The result shall be submitted to the implementing agency, USACE, RWQCB, and/or CDFW, as appropriate, for review and approval, and the project shall be designed to avoid and minimize impacts to jurisdictional areas to the extent feasible. The delineation shall serve as the basis to identify potentially jurisdictional areas to be protected during construction, through implementation of the avoidance and minimization identified in measure BIO-2(f). **BIO-2(b) Wetland, Drainages, and Riparian Habitat Restoration**. Impacts to jurisdictional wetlands, drainages, and riparian habitat shall be mitigated at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist retained by the implementing agency and shall occur on-site or as close to the impacted habitat as possible. A mitigation and monitoring plan shall be developed by a qualified biologist to ensure the success of compensatory mitigation sites that are to be conserved for compensation of permanent impacts to jurisdictional water and wetlands. The mitigation and monitoring plan can be prepared in combination with HMMP defined under Mitigation Measure BIO-1(e) above, if applicable. The mitigation and monitoring plan shall identify long term site management needs, routine monitoring techniques, techniques and success criteria, and shall determine if the conservation site has restoration needs to function as a suitable mitigation site. Alternatively, mitigation shall be accomplished through purchase of credits from an approved wetlands mitigation bank. **BIO-2(c) Landscaping Plan.** If landscaping is proposed for a specific project, a qualified biologist/landscape architect retained by the implementing agency shall prepare a landscape plan. Drought tolerant, locally native plant species shall be used. Noxious, invasive and/or non-native plant species that are recognized on the Federal Noxious Weed List, California Noxious Weeds List and/or California Invasive Plant Council Inventory shall not be permitted. Species selected for planting shall be regionally appropriate native species that are known to occur in the adjacent native habitat types. **BIO-2(d) Sensitive Natural Community Avoidance and Mitigation.** If the results of Mitigation Measure BIO-1(a) indicates projects implemented under the proposed 2026 RTP/SCS would impact sensitive natural communities, the implementing agency shall avoid impacts to sensitive natural communities through final project design modifications if feasible. If the implementing agency determines that sensitive natural communities cannot be avoided, impacts shall be mitigated on-site or offsite at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist based on any applicable resource agency guidelines. Temporarily impacted areas shall be restored to pre-project conditions. A Restoration Plan shall be developed by a qualified biologist and submitted to the implementing agency for approval. Mitigation for impacts to sensitive natural communities can be developed and included in the HMMP defined under Mitigation Measure BIO-1(e) above, if applicable. The mitigation and monitoring plan shall identify long term site management needs, routine monitoring techniques, techniques and success criteria. **BIO-2(e) Invasive Weed Prevention and Management Program.** Prior to start of construction for each project that occurs within or adjacent to native habitats, an Invasive Weed Prevention and Management Program shall be developed by a qualified biologist retained by the implementing agency to prevent invasion of native habitat by non-native plant species. The plan shall be submitted by the qualified biologist to the implementing agency for review and approval. A list of target species shall be included, along with measures for early detection and eradication. The plan, which shall be implemented by the implementing agency, shall also include, but not be limited to, the following measures to prevent the introduction of invasive weed species: ▪ During construction, limit the use of imported soils for fill. If the use of imported fill material is necessary, the imported material must be obtained from a source that is known to be free of invasive plant species. ▪ To minimize colonization of disturbed areas and the spread of invasive species, the contractor shall stockpile topsoil and redeposit the stockpiled soil after construction or transport the topsoil to a permitted landfill or acceptable location for disposal. ▪ All erosion control materials, including straw bales, straw wattles, or mulch used on-site must be free of invasive species seed. ▪ Exotic and invasive plant species shall be excluded from any erosion control seed mixes and/or landscaping plant palettes associated with the proposed project ▪ All disturbed areas shall be hydroseeded with a mix of locally native species upon completion of work in those areas. **BIO-2(f) Wetlands, Drainages, and Riparian Habitat Best Management Practices During Construction.** The following best management practices shall be required by the implementing agency for development within or adjacent to wetlands, drainages, or riparian habitat: ▪ Access routes, staging and construction areas shall be limited to the minimum area necessary to achieve the project goal and minimize impacts to other waters including locating access routes and ancillary construction areas outside of jurisdictional areas. ▪ To control sedimentation during and after project implementation, appropriate erosion control materials shall be deployed to minimize adverse effects on jurisdictional areas in the vicinity of the project. ▪ Project activities within the jurisdictional areas should occur during the dry season (typically between June 1 and November 1) in any given year, or as otherwise directed by the regulatory agencies. ▪ During construction, no litter or construction debris shall be placed within jurisdictional areas. All such debris and waste shall be picked up daily and properly disposed of at an appropriate site. ▪ Raw cement, concrete, or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic species resulting from project related activities, shall be prevented from contaminating the soil and/or entering wetlands, drainages, or riparian habitat.	Significant and unavoidable

Impact	Mitigation Measure(s)	Residual Impact
	▪ All refueling, maintenance and staging of equipment and vehicles shall occur at least 100 feet from bodies of water and in a location where a potential spill would not drain directly toward aquatic habitat (e.g., on a slope that drains away from the water source). Prior to the onset of work activities, a plan must be in place for prompt and effective response to any accidental spills.	
Impact BIO-3: Implementation of transportation projects and the land use scenario envisioned by the proposed 2026 RTP/SCS would 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. This impact would be significant and unavoidable.	**BIO-3(a) Project Design for Wildlife Connectivity.** All projects including long segments of fencing and lighting shall be designed to minimize impacts to wildlife movement. Fencing shall not be installed at the openings of culverts, undercrossings, or other wildlife passage structures unless required for public safety; where fencing is necessary, it shall be placed far enough from the structure entrance to avoid blocking wildlife access and shall include design features that maintain clear, functional movement pathways. Where fencing or other project components that may disrupt wildlife movement is required for public safety concerns, they shall be designed to permit wildlife movement by incorporating design features such as: ▪ A minimum 16 inches between the ground and the bottom of the fence to provide clearance for small animals; ▪ A minimum 12 inches between the top two wires, or top the fence with a wooden rail, mesh, or chain link instead of wire to prevent animals from becoming entangled; ▪ If privacy fencing is required near open space areas, openings at the bottom of the fence measure at least 16 inches in diameter shall be installed at reasonable intervals to allow wildlife movement, or the fence may be installed with the bottom at least 16 inches above the ground level; ▪ If fencing or other project components must be designed in such a manner that wildlife passage would not be permitted, wildlife crossing structures shall be incorporated into the project design as appropriate; ▪ Lighting installed as part of any project shall be designed to be minimally disruptive to wildlife (see mitigation measure AES-3(a) Roadway Lighting for lighting requirements), and ▪ Vegetative buffers, consisting of California native plant and tree species, shall be installed where feasible to provide a natural noise barrier between roadway projects and sensitive wildlife habitat, including movement corridors. The buffer shall be maintained in perpetuity to ensure noise levels from the roadway are minimized within adjacent sensitive habitat. In addition, prior to design approval, implementing agencies shall conduct wildlife movement assessments to evaluate connectivity constraints and identify opportunities to maintain or enhance wildlife movement. Post-construction monitoring shall be conducted, where feasible, to confirm wildlife use of implemented movement features and to identify any needed adaptive management. When on-site design measures cannot fully reduce impacts, compensation shall be considered as a mitigation option, including but not limited to participation in mechanisms authorized under SB 790, to reduce unavoidable connectivity impacts at a landscape scale. **BIO-3(b) Maintain Connectivity in Drainages.** No permanent structures shall be placed within any drainage or river that would impede wildlife movement (i.e., no hardened caps or other structures in the stream channel perpendicular to stream flow be left exposed or at depth with moderate to high risk for exposure as a result of natural bed scour during high flow events and thereby potentially create impediments to passage). In addition, upon completion of construction within any drainage, areas of stream channel and banks that are temporarily impacted shall be returned to pre-construction contours and in a condition that allows for unimpeded passage through the area once the work has been complete. If water is to be diverted around work sites, a diversion plan shall be submitted to StanCOG and/or local jurisdiction for review and approval prior to issuance of project construction permits/approvals. The diversion shall be designed in a way as to not impede movement while the diversion is in place. For projects affecting drainages that serve as wildlife movement corridors, implementing agencies shall complete preconstruction evaluations of species movement patterns to guide placement, design, and timing of work. Post construction monitoring shall be conducted, where feasible, to verify that drainage related movement remains functional and to inform adaptive management if needed. **BIO-3 (c) Construction Best Management Practices to Minimize Disruption to Wildlife.** The following construction best management practices shall be incorporated by the implementing agency into all grading and construction plans to minimize temporary disruption of wildlife, which could hinder wildlife movement: ▪ Designation of a 20 mile per hour speed limit in all construction areas. ▪ Daily construction work schedules shall be limited to daylight hours only. ▪ Mufflers shall be used on all construction equipment and vehicles shall be in good operating condition. ▪ All trash shall be placed in sealed containers and shall be removed from the project site a minimum of once per week. ▪ No pets are permitted on project site during construction.	Significant and unavoidable
Impact BIO-4: Implementation of transportation improvements and the land use scenario envisioned by the proposed 2026 RTP/SCS would not conflict with any local policies or ordinances protecting biological resources, such as a tree protection policy. This impact would be less than significant.	No mitigation required	Less than significant
Impact BIO-5: Implementation of transportation improvements and the land use scenario envisioned by the Proposed 2026 RTP/SCS 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. This impact would be less than significant.	No mitigation required	Less than significant

Impact	Mitigation Measure(s)	Residual Impact
Cultural Resources		
Impact CUL-1: Transportation improvement projects and the land use scenario envisioned by the Proposed 2026 RTP/SCS would cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5. This impact would be significant and unavoidable.	**CUL-1 Built Environment Historical Resources.** Prior to the issuance of an individual project permit, the implementing agency of a 2026 RTP/SCS project involving a building or structure over 45 years of age shall prepare a map defining the project area. This map shall indicate the areas of disturbance associated with construction and operation of the facility and will help in determining whether known and potential historical resources are located within the project area. If a building or structure greater than 45 years in age is within the identified impact zone, a survey and evaluation of the building(s) and/or structure(s) to determine their eligibility for recognition under State, federal, or local historic resource designation criteria shall be conducted. The evaluation shall be prepared by an architectural historian or historical architect meeting the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, Professional Qualification Standards (PQS) as defined in 36 CFR Part 61. All buildings and structures 45 years of age or older within the project area shall be evaluated in their historic context and documented in a report meeting the State Office of Historic Preservation guidelines. All evaluated properties shall be documented on Department of Parks and Recreation Series 523 Forms. The report shall be submitted to the implementing agency for review and concurrence. If historical resources are identified within the project area of a proposed development, efforts shall be made to the extent feasible to ensure that impacts are mitigated. Application of mitigation shall generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the implementing agency for review. To the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the Secretary of the Interior's Standards for the Treatments of Historic Properties (Standards). In accordance with CEQA, a project that has been determined to conform with the Standards generally would not cause a significant adverse direct or indirect impact to historical resources (14 CCR Section 15126.4(b)(1)). Application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the implementing agency for review and concurrence. If significant historical resources are identified on a development site and compliance with the Standards and/or avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. Mitigation measures may include documentation of the historical resource in the form of a Historic American Building Survey-Like report. The report shall comply with the Secretary of the Interior's Standards for Architectural and Engineering Documentation and shall generally follow the HABS Level III requirements, including digital photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the PQS and submitted to the implementing agency prior to issuance of any permits for demolition or alteration of the historical resource. Copies of the report shall be provided to a local library and/or other appropriate repositories	Significant and unavoidable
Impact CUL-2: Construction activity associated with transportation improvement projects, and land use development envisioned by the implementation of Proposed 2026 RTP/SCS may cause a substantial adverse change in the significance of an archaeological resource pursuant to Section15064.5. Potential impacts to archaeological resources would be significant and unavoidable.	**CUL-2(a) Archaeological Resources Impact Minimization.** Before construction activities, implementing agencies shall, or can and should, retain a qualified archaeologist to conduct a record search at the Northwest Information Center to determine whether the project area has been previously surveyed and whether resources were identified. When recommended by the Information Center, implementing agencies shall, or can and should, retain a qualified archaeologist to conduct archaeological surveys before construction activities. Implementing agencies shall, or can and should, follow recommendations identified in the survey, which may include, but would not be limited to: subsurface testing, designing and implementing a Worker Environmental Awareness Program, construction monitoring by a qualified archaeologist, or avoidance of sites and preservation in place. Recommended mitigation measures will be consistent with *CEQA Guidelines* Section 15126.4(b)(3) recommendations and may include but not be limited to preservation in place and/or data recovery. All cultural resources work shall follow accepted professional standards in recording any find including submittal of standard DPR Primary Record forms (Form DPR 523) and location information to the appropriate California Historical Resources Information System office for the project area. **CUL-2(b) Unanticipated Discoveries During Construction.** During construction activities, implementing agencies shall, or can and should, implement the following measures. If evidence of any prehistoric or historic-era subsurface archaeological deposits (e.g., ceramic sherds, refuse scatters, lithic scatters, habitation debris, etc.), are discovered during construction-related earthmoving activities all ground-disturbing activity proximate to the discovery shall be halted until a qualified archaeologist (36 CFR Section 61) can assess the significance of the find. If the find is a prehistoric archaeological site, the appropriate Native American group shall be notified. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the archaeologist determines that further information is needed to evaluate significance, a testing plan shall be prepared and implemented. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall work with the implementing agency to avoid disturbance to the resources, and if complete avoidance is not feasible in light of project design, economics, logistics and other factors, shall recommend additional measures such as the preparation and implementation of a data recovery plan. All cultural resources work shall follow accepted professional standards in recording any find including submittal of standard DPR Primary Record forms (Form DPR 523) and location information to the appropriate California Historical Resources Information System office for the project area. If the find is a prehistoric archaeological site, the culturally affiliated California Native American tribe shall be notified and afforded the opportunity to monitor mitigative treatment. During evaluation or mitigative treatment, ground disturbance and construction work could continue in other parts of the project area that are distant enough from the find not to impact it, as determined by the qualified archaeologist.	Significant and unavoidable
Impact CUL-3: Construction activity associated with transportation improvement projects, and land use development envisioned by implementation of Proposed 2026 RTP/SCS could result in disturbances to human remains including those interred outside of formal cemeteries. Potential impacts to human remains would be less than significant.	No mitigation required.	Less than significant

Impact	Mitigation Measure(s)	Residual Impact
Energy		
Impact E-1: Future transportation improvement projects and implementation of the land use scenario envisioned by the 2026 RTP/SCS would not result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources or increased reliance on fossil fuels. This impact would be less than significant.	No mitigation required	Less than significant
Impact E-2: The proposed 2026 RTP/SCS would not increase reliance on fossil fuels or decrease reliance on renewable energy sources. This impact would be less than significant.	No mitigation required	Less than significant
Impact E-3: The proposed 2026 RTP/SCS would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. This impact would be less than significant.	No mitigation required	Less than significant
Geology and Soils		
Impact GEO-1: The proposed transportation improvements and land use projects envisioned by the proposed 2026 RTP/SCS would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides. Impacts would be less than significant.	No mitigation required	Less than significant
Impact GEO-2: The proposed transportation improvements and land use projects envisioned by the proposed 2026 RTP/SCS would not result in substantial soil erosion or the loss of topsoil. Impacts would be less than significant.	No mitigation required	Less than significant
Impact GEO-3: Implementation of the proposed transportation improvement projects and future land use scenario envisioned by the proposed 2026 RTP/SCS could be located on unstable soils subject to landslides and soils subject to expansion. This impact would be less than significant.	No mitigation required	Less than significant
Impact GEO-4: Implementation of the proposed transportation improvement projects and future land use scenario envisioned by the proposed 2026 RTP/SCS would not include projects that would require the use of septic tanks or alternative wastewater disposal systems. This impact would be less than significant.	No mitigation required	Less than significant
Impact GEO-5: Implementation of the proposed transportation improvements and the land use scenario envisioned by the 2026 RTP/SCS could cause a substantial adverse change in or disturb known and unknown paleontological resources as defined in CEQA under guidelines section 15064.5. Impacts to paleontological resources would be significant and unavoidable.	**GEO-5 Paleontological Resources Impact Minimization.** The implementing agency of a 2026 RTP/SCS project involving ground disturbing activities (including grading, trenching, foundation work and other excavations) shall retain a qualified paleontologist, defined as a paleontologist who meets the Society of Vertebrate Paleontology (SVP) standards for Qualified Professional Paleontologist (SVP 2010), to conduct a Paleontological Resources Assessment (PRA). The PRA shall determine the age and paleontological sensitivity of geologic formations underlying the proposed disturbance area, consistent with SVP Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (SVP 2010) guidelines for categorizing paleontological sensitivity of geologic units within a project area. If underlying formations are found to have a high potential (sensitivity) for paleontological resources, the following measures shall apply: ▪ **Avoidance.** Avoid routes and project designs that would permanently alter unique paleontological and geological features. If avoidance practices cannot be implemented, the following measures shall apply. ▪ **Paleontological Mitigation and Monitoring Reporting Program.** A Qualified Paleontologist shall prepare a Paleontological Resources Monitoring and Mitigation Program to be implemented during ground disturbance activity. This program shall outline the procedures for construction staff training, paleontological monitoring extent and duration (i.e., in what locations and at what depths paleontological monitoring shall be required), salvage and preparation of fossils, the final mitigation and monitoring report and paleontological staff qualifications. ▪ **Paleontological Worker Environmental Awareness Program (WEAP).** Prior to the start of ground disturbance activity, construction personnel shall be informed on the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff. ▪ **Paleontological Monitoring.** Ground disturbing activity with the potential to disturb geologic units with high paleontological sensitivity, as determined by initial paleontological surveying or records search as deemed appropriate, shall be monitored on a full-time basis by a qualified paleontological monitor. Should no fossils be observed during the first 50 percent of such excavations, paleontological monitoring could be reduced, under the discretion of the qualified paleontologist, to weekly spot-checking. Monitoring shall be conducted by a qualified paleontological monitor, defined as an individual who has experience with collection and salvage of	Significant and unavoidable

Impact	Mitigation Measure(s)	Residual Impact
	paleontological resources and meets the minimum standards of the SVP (2010) for a Paleontological Resources Monitor If it is determined that the fossil(s) is (are) scientifically significant, the Qualified Paleontologist shall complete the following conditions to mitigate impacts to significant fossil resources: ▫ **Fossil Salvage**. If fossils are discovered, the implementing agency shall be notified immediately, and the qualified paleontologist (or paleontological monitor) shall recover them. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case, the paleontologist should have the authority to temporarily direct, divert or halt construction activity to ensure that the fossil(s) can be removed in a safe and timely manner. ▫ **Preparation and Curation of Recovered Fossils**. Once salvaged, fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection along with all pertinent field notes, photos, data, and maps. ▫ **Final Paleontological Mitigation and Monitoring Report**. Upon completion of ground disturbing activity (and curation of fossils, if necessary) the Qualified Paleontologist shall prepare a final mitigation and monitoring report outlining the results of the Paleontological Mitigation and Monitoring Program. The report shall include discussion of the location, duration and methods of the monitoring, stratigraphic sections, any recovered fossils, and the scientific significance of those fossils, and where fossils were curated. The report shall be submitted to the sponsor agency. If the monitoring efforts recovered fossils, then a copy of the report shall also be submitted to the designated museum repository.	
Greenhouse Gas Emissions and Climate Change		
Impact GHG-1: Construction of the transportation improvements and land use projects envisioned by the proposed 2026 RTP/SCS would generate GHG emissions that may have a significant impact on the environment. Impacts would be significant and unavoidable.	**GHG-1 Construction GHG Reduction Measures.** The implementing agency shall incorporate the most recent GHG reduction measures and/or technologies for reducing GHG emissions measures for off-road construction vehicles during construction. The measures shall be noted on all construction plans, and the project sponsor shall perform periodic site inspections. Current GHG-reducing measures include the following: ▪ Off road diesel construction equipment meeting the most stringent CARB emissions standards for off-road heavy-duty diesel engines must be used (e.g., as of 2026, this would be Tier 4 emission standards). Where the use of the most stringent CARB emissions standards for off-road heavy-duty diesel engines is not feasible, the next lower tier shall be used; where the use of the next lower tier is not feasible, the next lowest tier shall be used. ▪ Use of on-road heavy-duty trucks that meet CARB's most stringent or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation; ▪ All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the five-minute idling limit; ▪ Substitute gasoline-powered in place of diesel-powered equipment, where feasible; ▪ Use of alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel, in place of diesel-powered equipment for 15 percent of the fleet, to the extent electric powered equipment is not feasible; ▪ Use of materials sourced from local suppliers; ▪ Recycling of at least 75 percent of construction waste materials; and ▪ Implementing agencies shall incentivize that construction workers carpool, and/or use electric vehicles to commute to and from the project site.	Significant and unavoidable
Impact GHG-2: Proposed transportation improvements and land use projects envisioned by the proposed 2026 RTP/SCS would result in a net increase in GHG emissions by 2049 compared to the baseline conditions and would therefore have a significant impact on the environment. Impacts would be significant and unavoidable.	**GHG-2 Land Use Project Energy Consumption and Water Use Reduction Measures.** The cities and the County, when processing discretionary land use projects, shall implement the following measures as applicable and feasible to the project. The cities and the County may also incorporate these measures into their local planning regulations. Measures to reduce GHG emissions for land use projects include, but are not limited to: ▪ Require new residential and commercial construction to install solar energy systems or be solar-ready ▪ Require new residential and commercial development to install low flow water fixtures ▪ Require new residential and commercial development to install water-efficient drought-tolerant landscaping, including the use of compost and mulch ▪ Require new development to exceed the applicable Title 24 energy-efficiency requirements ▪ Require new residential and commercial development to offer information on recycling, composting, and disposal of household hazardous waste and e-waste ▪ Require new development to implement circulation design elements in parking lots for non-residential uses to reduce vehicle queuing and improve the pedestrian environment.	Significant and unavoidable
Impact GHG-3: The transportation improvements and land use projects envisioned by the proposed 2026 RTP/SCS would conflict with regional SB 375 per capita passenger vehicle CO_2 emission reduction targets of 16 percent by 2035 from 2005 levels. Impacts would be less than significant.	No mitigation required	Less than significant
Impact GHG-4: Implementation of the proposed 2026 RTP/SCS would conflict with the State's ability to achieve SB 32 and AB 1279, and applicable local GHG reduction plan targets and goals. Impacts would be significant and unavoidable.	**GHG-4(a) Transportation-Related GHG Reduction Measures.** The implementing agency shall incorporate the most recent GHG reduction measures and/or technologies for reducing VMT and associated transportation related GHG emissions. GHG-reducing mitigation measures include the following: ▪ Installation of electric vehicle charging stations beyond those required by State and local codes ▪ Utilization of electric vehicles and/or alternatively fueled vehicles in company fleet ▪ Provision of dedicated parking for carpools, vanpool, and clean air vehicles ▪ Provision of vanpool and/or shuttle service for employees ▪ Implementation of reduced parking minimum requirements	Significant and unavoidable

Impact	Mitigation Measure(s)	Residual Impact
	▪ Implementation of maximum parking limits ▪ Provision of bicycle parking facilities beyond those required by State and local codes ▪ Provision of a bicycle-share program ▪ Expansion of bicycle routes/lanes along the project site frontage ▪ Provision of new or improved transit amenities (e.g., covered turnouts, bicycle racks, covered benches, signage, lighting) if project site is located along an existing transit route ▪ Expansion of existing transit routes ▪ Provision of transit subsidies ▪ Expansion of sidewalk infrastructure along the project site frontage ▪ Provision of safe, pedestrian-friendly, and interconnected sidewalks and streetscapes ▪ Provision of employee lockers and showers ▪ Provision of on-site services that reduce the need for off-site travel (e.g., childcare facilities, automatic teller machines, postal machines, food services) ▪ Provision of alternative work schedule options, such as telework or reduced schedule (e.g., 9/80 or 10/40 schedules), for employees ▪ Implementation of transportation demand management programs to educate and incentivize residents and/or employees to use transit, smart commute, and alternative transportation options **GHG-4(b) Land Use Project Energy Consumption and Water Use Reduction Measures.** For land use projects under their jurisdiction, the cities and counties in the StanCOG region can and should implement measures to reduce energy consumption, water use, solid waste generation, and VMT, all of which contribute to GHG emissions. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions. ▪ Require new commercial construction to install solar energy systems or be solar-ready ▪ Require new residential and commercial development to install low flow water fixtures ▪ Require new residential and commercial development to install water-efficient drought-tolerant landscaping, including the use of compost and mulch ▪ Require new development to exceed the applicable Title 24 energy-efficiency requirements ▪ Encourage new development to be fully electric	
Hazards and Hazardous Materials		
Impact HAZ-1: Transportation improvement projects and land use scenario envisioned by the proposed 2026 RTP/SCS may facilitate the routine transport, use, or disposal of hazardous material, and may result in reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Impacts would be less than significant.	No mitigation required	Less than significant
Impact HAZ-2: Transportation improvement projects and the land use scenario envisioned in the proposed 2026 RTP/SCS would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school. Impacts would be less than significant.	No mitigation required	Less than significant
Impact HAZ-3: The proposed 2026 RTP/SCS includes transportation improvement projects and a land use scenario that could occur on sites on the list of hazardous material sites compiled by Government Code Section 65962.5, which has the potential to create a significant hazard to the public or environment. This impact would be significant and unavoidable.	**HAZ-3 Site Remediation.** If an individual project included in the proposed 2026 RTP/SCS is located on or near a hazardous materials and/or waste site pursuant to Government Code Section 65962.5, the implementing agency shall prepare a Phase I ESA in accordance with the American Society for Testing and Materials' E-1527-05 standard. For work requiring any demolition or renovation, the Phase I ESA shall make recommendations for any hazardous building materials survey work that shall be done. All recommendations included in a Phase I ESA prepared for a site shall be implemented. If a Phase I ESA indicates the presence or likely presence of contamination, the implementing agency shall require a Phase II ESA, and recommendations of the Phase II ESA shall be fully implemented. Examples of typical recommendations provided in Phase I/II ESAs include removal of contaminated soil in accordance with a soil management plan approved by the local environmental health department; covering stockpiles of contaminated soil to prevent fugitive dust emissions; capturing groundwater encountered during construction in a holding tank for additional testing and characterization and disposal based on its characterization; and development of a health and safety plan for construction workers.	Significant and unavoidable
Impact HAZ-4: Transportation improvement projects and the land use scenario envisioned in the proposed 2026 RTP/SCS located within an airport land use plan or within two miles of a public or public use airport would not result in a safety hazard or excessive noise for people residing or working in the project area. This Impact would be less than significant.	No mitigation required	Less than significant

Impact	Mitigation Measure(s)	Residual Impact
Hydrology and Water Quality		
Impact HYD-1: Implementation of proposed transportation projects and future projects included in the land use scenario envisioned in the proposed 2026 RTP/SCS would not violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality. Impacts would be less than significant.	No mitigation required	Less than significant
Impact HYD-2: Transportation and land use projects implementing the proposed 2026 RTP/SCS would substantially decrease groundwater supplies and interfere with groundwater recharge such that it may impede sustainable groundwater management of the basin. Impacts would be significant and unavoidable.	**HYD-2(a) Construction Dust Suppression Water Supply.** Where feasible, implementing agencies shall use reclaimed and/or recycled water for dust suppression during construction activities. This includes use of such reclaimed water in water trucks utilized for project construction occurring outside developed areas and away from water infrastructure which would otherwise provide such reclaimed water. This measure shall be noted on construction plans and shall be spot checked by the local implementing agency. **HYD-2(b) Landscape Watering**. In jurisdictions that do not already have an appropriate local regulatory program related to landscape watering, implementing agencies shall design proposed 2026 RTP/SCS projects that include landscaping shall be designed with drought tolerant plants and drip irrigation. When feasible, native plant species shall be used. In addition, landscaping associated with proposed improvements shall be maintained using reclaimed water when feasible. If reclaimed water could feasibly be utilized for project landscape watering due to proximity of reclaimed water sources but is unavailable due to lack of connecting infrastructure, implementing agencies shall conduct an analysis of the upgrades needed to provide such infrastructure, which will include the potential for new connections to existing reclaimed water systems to provide reclaimed water to other nearby sources besides the proposed project in the analysis, and shall perform such steps as necessary to utilize available reclaimed water if feasible.	Significant and unavoidable
Impact HYD-3: Transportation and future land use projects implementing the proposed 2026 RTP/SCS would not substantially alter the existing drainage pattern of a site or area in resulting in flooding or impede flood flows, exceed the capacity of stormwater systems, or provide additional polluted runoff. Compliance with the existing suite of applicable policies and regulations minimize impacts related to flooding, stormwater drainage capacity, polluted runoff, and redirection or impedance of flood. Impacts would be less than significant.	No mitigation required	Less than significant
Impact HYD-4: Transportation and land use projects implementing the proposed 2026 RTP/SCS would not risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones. Impacts would be less than significant.	No mitigation required	Less than significant
Impact HYD-5: Transportation and land use projects implementing the proposed 2026 RTP/SCS could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plans. Impacts would be significant and unavoidable.	**HYD-2(a)** and **HYD-2(b)**	Significant and unavoidable
Land Use and Planning		
Impact LU-1: Implementation of proposed transportation improvements and the land use scenario envisioned by the proposed 2026 RTP/SCS would not physically divide an established community. This impact would be less than significant.	No mitigation required	Less than significant
Impact LU-2: The proposed 2026 RTP/SCS would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation and result in a physical change to the environment not already addressed in the other resource chapters of this EIR. This impact would be less than significant after implementation of mitigation discussed throughout this EIR.	Mitigation measures are provided for applicable resources throughout their respective environmental issue area sections of the EIR to reduce impacts. No additional mitigation is required for this impact.	Less than significant

Impact	Mitigation Measure(s)	Residual Impact
Noise		
Impact N-1: Construction activity associated with transportation improvements and land use projects envisioned by the proposed 2026 RTP/SCS would generate a substantial temporary increase in ambient noise levels in excess of standards established in local general plans or noise ordinances and would generate a substantial absolute noise increase over existing noise levels. This impact would be significant and unavoidable.	**N-1 Construction Noise Reduction.** To reduce construction noise levels to achieve applicable standards and prevent a substantial increase in ambient noise levels, implementing agencies for transportation and land use projects shall implement the measures identified below where feasible and necessary. a) **Compliance with local Construction Noise Regulations.** Implementing agencies shall ensure that, where residences or other noise sensitive uses are located within 800 feet of construction sites without pile driving, appropriate measures shall be implemented to ensure consistency with local noise ordinance requirements related to construction noise. Specific techniques may include, but are not limited to, restrictions on construction timing, use of sound blankets on construction equipment, and the use of temporary walls and noise barriers to block and deflect noise. b) **Noise Complaint and Enforcement Manager.** Designate an on-site construction complaint and enforcement manager for projects within 800 feet of sensitive receivers. Implementing agencies shall post phone numbers for the on-site enforcement manager at construction sites along with complaint procedures and who to notify in the event of a problem. c) **Pile Driving**. For any project within 3,200 feet of sensitive receptors that requires pilings, the implementing agency shall require caisson drilling or sonic pile driving as opposed to pile driving, where feasible. This shall be accomplished through the placement of conditions on the project during its individual environmental review. d) **Construction Equipment Noise Control**. Implementing agencies shall ensure that equipment and trucks used for project construction utilize the best available noise control techniques including mufflers, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds. e) **Impact Equipment Noise Control.** Implementing agencies shall ensure that impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction be hydraulically or electrically powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, use of an exhaust muffler on the compressed air exhaust can lower noise levels from the exhaust by up to about 10 dBA. When feasible, external jackets on the impact equipment can achieve a reduction of 5 dBA. Whenever feasible, use quieter procedures, such as drilling rather than impact equipment operation. f) **Construction Activity Timing Restrictions.** The following timing restrictions shall apply to 2026 RTP/SCS activates creating noise levels at or above 65 dBA at a nearby dwelling unit, except where timing restrictions are already established in local codes or policies. Construction activities shall be limited to: ▪ Monday through Friday: 7 a.m. to 6 p.m. ▪ Saturday: 9 a.m. to 5 p.m. ▪ Sundays and Holidays: Not permitted g) **Placement of Stationary Noise Sources.** Locate stationary construction noise sources, e.g., generators, as far from noise-sensitive receptors as possible. Stationary construction noise sources that must be located near existing receptors will be equipped with the best available mufflers.	Significant and unavoidable
Impact N-2: Transportation improvements envisioned by the proposed 2026 RTP/SCS would generate a substantial permanent increase in ambient noise levels in excess of standards or over existing noise levels and generate a substantial absolute noise increase over existing noise levels. This impact would be significant and unavoidable.	**N-2 Noise Assessment and Control for Transportation Noise Sources.** Implementing agencies for 2026 RTP/SCS projects shall complete detailed noise assessments using applicable guidelines (e.g., Caltrans Traffic Noise Analysis Protocol) for roadway projects that may impact noise sensitive receptors. The implementing agency shall ensure that a noise survey is conducted that, at minimum: ▪ Determines existing and projected noise levels ▪ Determines the amount of attenuation needed to reduce potential noise impacts to applicable State and local standards ▪ Identifies potential alternate alignments that allow greater distance from, or greater buffering of, noise-sensitive areas ▪ If warranted, recommends methods for mitigating noise impacts, including: ▫ Appropriate setbacks ▫ Sound attenuating building design, including retrofit of existing structures with sound attenuating building materials ▫ Use of sound barriers (earthen berms, sound walls, or some combination of the two) Where new or expanded transportation projects are found to expose receptors to noise exceeding normally acceptable levels, the individual project lead agency shall implement techniques as recommended in the project-specific noise assessments. The preferred methods for mitigating noise impacts shall include the use of appropriate setbacks and sound attenuating building design, including retrofit of existing structures with sound attenuating building materials where feasible. In instances where use of these techniques is not feasible, the use of sound barriers (earthen berms, sound walls, or some combination of the two) shall be considered. Long expanses of walls or fences may be interrupted with offsets and provided with accents to prevent monotony. Landscape pockets and pedestrian access through walls may be provided. Whenever possible, a combination of elements shall be used, including open grade paving, solid fences, walls, and landscaped berms. Other techniques such as rubberized asphalt or “quiet pavement” shall be used where feasible to reduce road noise for new roadway segments or modifications requiring repaving. The effectiveness of noise reduction measures shall be monitored by taking noise measurements and installing adaptive mitigation measures to achieve applicable standards.	Significant and unavoidable

Impact	Mitigation Measure(s)	Residual Impact
Impact N-3: Construction activities associated with transportation projects under the proposed 2026 RTP/SCS would generate excessive groundborne vibration levels. New truck, bus, and train traffic resulting from the proposed 2026 RTP/SCS would generate excessive vibration levels. These impacts would be significant and unavoidable.	**N-3(a) Vibration Mitigation for Construction of Transportation Projects.** If construction equipment would generate vibration levels exceeding acceptable levels as established by FTA (as shown in Table 4.12 2 and Table 4.12 3), implementing agencies of the proposed 2026 RTP/SCS shall, or can and should, complete the following tasks: ▪ Prior to construction, survey the project site for vulnerable buildings, and complete geotechnical testing (preconstruction assessment of the existing subsurface conditions and structural integrity), for any older or historic buildings within 50 feet of pile driving. The testing shall be completed by a qualified geotechnical engineer and qualified historic preservation professional and/or structural engineer. ▪ Prepare and submit a report to the lead agency that contains the results of the geological testing. If recommended by the preconstruction report implementing agencies shall require ground vibration monitoring of nearby historic structures. Methods and technologies shall be based on the specific conditions at the construction site. The preconstruction assessment shall include a monitoring program to detect ground settlement or lateral movement of structures in the vicinity of pile-driving activities and identify corrective measures to be taken should monitored vibration levels indicate the potential for building damage. In the event of unacceptable ground movement with the potential to cause structural damage, all impact work shall cease, and corrective measures shall be implemented to minimize the risk to the subject, or adjacent, historic structure. ▪ To minimize disturbance within 550 feet of pile-driving activities, implement "quiet" pile-driving technology, such as predrilling of piles and the use of more than one pile driver to shorten the duration of pile driving), where feasible, in consideration of geotechnical and structural requirements and conditions as defined as part of the geotechnical testing, if testing was feasible. ▪ Use cushion blocks to dampen noise from pile driving. ▪ Phase operations of construction equipment to avoid simultaneous vibration sources. **N-3(b) Vibration Mitigation for Operation of Transportation Projects.** Where local vibration and groundborne noise standards do not apply, implementing agencies of 2026 RTP/SCS projects shall comply with all applicable local vibration and groundborne noise standards, or in the absence of such local standards, comply with guidance provided by the FTA in Transit Noise and Vibration Impact Assessment (FTA 2018) to assess impacts to buildings and sensitive receptors and reduce vibration and groundborne noise. FTA recommended thresholds shall be used except in areas where local standards for groundborne noise and vibration have been established. Methods that can be implemented to reduce vibration and groundborne noise impacts include, but are not limited to: ▪ Rail Traffic ▫ Maximizing the distance between tracks and sensitive uses ▫ Conducting rail grinding on a regular basis to keep tracks smooth ▫ Conducting wheel truing to re-contour wheels to provide a smooth-running surface and removing wheel flats ▫ Providing special track support systems such as floating slabs, resiliently supported ties, high-resilience fasteners and ballast mats; ▫ Implementing operational changes such as limiting train speed and reducing nighttime operations. ▪ Bus and Truck Traffic ▫ Construction of noise barriers ▫ Use noise reducing tires and wheel construction on bus wheels ▫ Use vehicle skirts (i.e., a partial enclosure around each wheel with absorptive treatment) on freight vehicle wheels	Significant and unavoidable
Impact N-4: Land use projects envisioned by the proposed 2026 RTP/SCS may place sensitive receptors in areas with noise levels in excess of standards established in the local general plan or noise ordinance. This impact would be significant and unavoidable.	**N-4 Noise Mitigation for Land Uses.** If a 2026 RTP/SCS land use project is located in an area with exterior ambient noise levels above local noise standards, the implementing agency shall ensure that a noise study is conducted to determine the existing exterior noise levels in the vicinity of the project. If the project would be impacted by ambient noise levels, feasible attenuation measures shall be used to reduce operational noise to meet acceptable standards. In addition, noise insulation techniques shall be utilized to reduce indoor noise levels to thresholds set in applicable State and/or local standards. Such measures may include but are not limited to: dual-paned windows, solid core exterior doors with perimeter weather stripping, air conditioning system so that windows and doors may remain closed and situating exterior doors away from roads. The noise study and determination of appropriate mitigation measures shall be completed during the project's individual environmental review.	Significant and unavoidable
Impact N-5: Transportation improvements and land use projects envisioned by the proposed 2026 RTP/SCS would be located in close proximity to existing airports such that applicable exterior and interior noise thresholds would be exceeded. Impacts would be significant and unavoidable.	**N-5 Noise Mitigation Near Airports.** Local lead agencies for all new development proposed to be located within an existing airport influence zone, as defined by the locally adopted ALUCP or local general plan, or within two miles of a private use airport, shall require a site specific noise compatibility study. The study shall consider and evaluate existing aircraft noise, based on specific aircraft activity data for the airport in question, and shall include recommendations for site design and building construction. Such measures may include but are not limited to: dual-paned windows, solid core exterior doors with perimeter weather stripping, air conditioning system so that windows and doors may remain closed, and situating exterior doors away from roads. The noise study and determination of appropriate mitigation measures shall be completed during the project's individual environmental review.	Significant and unavoidable
Population and Housing		
Impact POP-1: Transportation and land use projects implementing the proposed 2026 RTP/SCS would not induce substantial unplanned population growth, either directly or indirectly. This impact would be less than significant.	No mitigation required	Less than significant

Impact	Mitigation Measure(s)	Residual Impact
Impact POP-2: Transportation and Land use projects included in the proposed 2026 RTP/SCS would temporarily displace existing housing and people but would not necessitate the construction of replacement housing elsewhere. Impacts would be less than significant.	No mitigation required	Less than significant
Transportation		
Impact TRA-1: Transportation projects and land use projects envisioned by the proposed 2026 RTP/SCS would not conflict with any program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. This impact would be less than significant.	No mitigation required	Less than significant
Impact TRA-2: The proposed 2026 RTP/SCS would result in an overall increase in regional VMT above baseline (2023) conditions. The proposed 2026 RTP/SCS would result in an increase in VMT per capita above the baseline (2023) conditions. Regional VMT and VMT per capita impacts from implementation of the proposed 2026 RTP/SCS would be significant and unavoidable. The induced travel impact at the regional level would also be significant and unavoidable.	**TRA-2(a) Land Use Project VMT Analysis and Reduction.** Regionally, implementing agencies shall require implementation of VMT reduction strategies through Transportation Demand Management programs, impact fee programs, mitigation banks or exchange programs, in-lieu fee programs, and other land use project conditions that reduce VMT. Programs shall be designed to reduce VMT from existing land uses, where feasible, and from new discretionary residential or employment land use projects. The design of programs and project specific mitigation shall focus on VMT reduction strategies that increase travel choices and improve the comfort and convenience of sharing rides in private vehicles, using public transit, biking, or walking. At a project level, implementing agencies shall evaluate VMT as part of project specific CEQA review and discretionary approval decisions for land use projects. Where project level significant impacts are identified, implementing agencies shall identify and implement measures that reduce VMT. Examples may include but are not limited to: ▪ Provide car-sharing, vanpool, bike sharing, and ride-sharing programs ▪ Implement or provide access to commute reduction programs ▪ Encourage telecommute programs ▪ Purchase AB 130 VMT mitigation credits ▪ Incorporate affordable housing into the project ▪ Increase density, infill, and transit oriented development ▪ Increase mixed uses within the project area ▪ Incorporate improved pedestrian connections within the project/neighborhood ▪ Incentivize development in low VMT communities ▪ Incentivize housing near commercial and offices ▪ Increase access to goods and services, such as groceries, schools, and daycare ▪ Orient the project toward transit, bicycle, and pedestrian facilities ▪ Implement complete streets ▪ Provide traffic calming ▪ Provide bicycle parking ▪ Reduce parking requirements ▪ Separate out parking costs from building costs ▪ Provide parking cash-out programs **TRA-2(b) Transportation Project VMT Analysis and Reduction.** Implementing agencies shall evaluate transportation projects that involve increasing roadway capacity for their potential to increase VMT. Where project-level increases are found to be significant, implementing agencies shall, or can and should, identify and implement measures that reduce VMT. Examples of measures that reduce VMT include: ▪ Tolling new lanes to encourage carpools and fund transit improvements ▪ Converting existing general purpose lanes to high occupancy vehicle lanes ▪ VMT banks ▪ Implementing or funding offsite travel demand management ▪ Providing a bus rapid transit system ▪ Implement bus on shoulder operations during peak congestion periods ▪ Improving pedestrian or bicycle networks, or transit service ▪ Providing transit passes ▪ Incorporating neighborhood electric vehicle network	Significant and unavoidable
Impact TRA-3: Transportation and land use projects implemented under the proposed 2026 RTP/SCS would not substantially increase hazards due to geometric design features or incompatible uses. This impact would be less than significant.	No mitigation required	Less than significant

Impact	Mitigation Measure(s)	Residual Impact
Impact TRA-4: Transportation and land use projects implementing the proposed 2026 RTP/SCS would not result in inadequate emergency vehicle access or substantially impair an adopted emergency response plan or emergency evacuation plan. This impact would be less than significant.	No mitigation required	Less than significant
Tribal Cultural Resources		
Impact TCR-1: Transportation projects and the land use scenario envisioned in the proposed 2026 RTP/SCS would cause a substantial adverse change in the significance of a tribal cultural resource. This impact would be significant and unavoidable.	**TCR-1 Identified Tribal Cultural Resources Impact Minimization.** Implementing agencies shall, or can and should, Transportation project sponsor agencies shall comply with AB 52, which may require formal tribal consultation. If the implementing agency determines that a project may cause a substantial adverse change to a tribal cultural resource, they shall implement mitigation measures identified in the consultation process required under PRC Section 21080.3.2, or shall implement the following measures where feasible to avoid or minimize the project-specific significant adverse impacts: ▪ Avoidance and preservation of the resources in place, including, but not limited to: designing and building the project to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space to incorporate the resources with culturally appropriate protection and management criteria. ▪ Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following: ▫ Protecting the cultural character and integrity of the resource ▫ Protecting the traditional use of the resource ▫ Protecting the confidentiality of the resource ▫ Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places ▪ Native American monitoring by the appropriate tribe during soil disturbance for all projects in areas identified as sensitive for potential tribal cultural resources and/or in the vicinity (within 100 feet) of known tribal cultural resources. ▪ If potential tribal cultural resources are encountered during ground-disturbing activities; work in the immediate area must halt and the appropriate tribal representative(s), the implementing agency, and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find and determine the proper course of action. and **CUL-2(b)**	Significant and unavoidable
Wildfire		
Impact W-1: Proposed transportation improvements and land use projects envisioned by the Proposed 2026 RTP/SCS would be located in or near an SRA or Very High FHSZs. This would increase wildfire risk associated with the construction or maintenance of infrastructure such as roads, post-fire landslides and flooding, and wildfire risk to people and structures. Impacts would be significant and unavoidable.	**W-1 Wildfire Risk Reduction.** If an individual transportation or land use project included in the proposed 2026 RTP/SCS is within or less than two miles from a High or Very High FHSZ in the SRA as established by California Public Resources Code (PRC) Sections 4201 through 4204, or a High or Very High FHSZ in the LRA designated pursuant to California Government Code, Sections 51175 through 51189, the implementing agency shall require appropriate mitigation to reduce the risk. Examples of mitigation to reduce risk of loss, injury or death from wildlife include, but are not limited to: ▪ Require the use of fire-resistant vegetation native to Stanislaus County and/or the local microclimate of the project site and discourage the use of fire-prone species, especially nonnative, invasive species. ▪ Enforce defensible space regulations compliant with PRC Section 4291 or stricter as designated by the local governing body to keep overgrown and unmanaged vegetation, accumulations of trash and other flammable material away from structures. ▪ Provide public education about wildfire risk, fire prevention measures, and safety procedures and practices to allow for safe evacuation and/or options to shelter-in-place during a wildfire emergency. ▪ Require adherence to the local hazard mitigation plan, as well as the local general plan policies and programs aimed at reducing the risk of wildfires through land use compatibility, training, sustainable development, brush management, public outreach, and service standards for fire departments. ▪ Ensure sufficient emergency water supply and operations for wildland fire suppression. ▪ Encourage the development of landscaping maintenance schedules to include removal/ treatment of annual invasive species which may contribute to increased fuel loading. ▪ Require a fire safety plan be submitted to and approved by the local fire protection agency. The fire safety plan shall include all of the fire safety features incorporated into the project and the schedule for implementation of the features. The local fire protection agency may require changes to the plan or may reject the plan if it does not adequately address fire hazards associated with the project as a whole or the individual phase of the project. ▪ Prohibit certain project construction activities with potential to ignite wildfires during red-flag warnings issued by the National Weather Service for the project site location. Example activities that shall be prohibited during red-flag warnings include welding and grinding outside of enclosed buildings. ▪ Require fire extinguishers to be onsite during construction of projects. Fire extinguishers shall be maintained to function according to manufacturer specifications. Construction personnel shall receive training on the proper methods of using a fire extinguisher. ▪ Prohibit smoking and open fires at individual transportation or land use project sites implementing the proposed 2026 RTP/SCS during construction and operations. Provide the lead agency with a copy of the notification to all contractors regarding prohibited smoking. ▪ Encourage the use of external sprinklers for new development mapped within Very High FHSZs. ▪ Complete corridor-specific evaluations and implement traffic management measures, including coordination with local emergency response agencies. ▪ Incorporate post-fire debris-flow, erosion, or landslide risk assessments during the design phase for hillside facilities or projects located in areas subject to post-fire geologic hazards.	Significant and unavoidable

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1 Introduction

1.1 Statement of Purpose

This document is a Program Environmental Impact Report (EIR) that describes environmental impacts associated with the proposed 2026 Regional Transportation Plan-Sustainable Communities Strategy (2026 RTP/SCS) ("Plan" or "project") proposed by the Stanislaus Council of Governments (StanCOG).

Section 21000 et seq. of the California Public Resources Code, commonly referred to as the California Environmental Quality Act of 1970 (CEQA), requires the evaluation of environmental impacts associated with all planning programs or development projects proposed. As such, this EIR is an informational document for use by StanCOG, other agencies and the public in their consideration and evaluation of the environmental consequences of implementing the proposed 2026 RTP/SCS.

This section discusses (1) the purpose of this EIR; (2) 2026 RTP/SCS and EIR background; (3) the type of environmental document prepared for the 2026 RTP/SCS; (4) the content and format of the EIR; and (5) the environmental review process required under CEQA. The proposed project is described in detail in Chapter 2, *Project Description*.

1.2 Project Background

As both the federally-designated metropolitan planning organization (MPO) and the State-designated regional transportation planning agency (RTPA) for Stanislaus County, StanCOG is required by both federal and State law to prepare a county-level Regional Transportation Plan (RTP) to serve as a long-range (at least 20-year) transportation planning document. State and federal law also requires that the RTP be updated every four years. As such, the RTP is the long-range transportation plan for Stanislaus County. The StanCOG RTP was updated in 2004, 2007, 2011, 2014, 2018 and most recently in 2022. The 2014 update was the first to contain a Sustainable Communities Strategy, as this was a new requirement pursuant to Senate Bill (SB) 375. A comprehensive program environmental impact report was prepared for the 2014 RTP/SCS update to satisfy CEQA requirements. The proposed 2026 RTP/SCS update lists Tier I roadway projects to improve the transportation system during the 2025-2049 planning period (approximately 25 years). Tier I includes short-range and long-range projects that StanCOG considers fully fundable from anticipated revenue sources and likely to be programmed during the life of the RTP/SCS. Although some of the projects from the 2022 RTP may have been completed or are currently under construction, many have not. Additionally, new projects have been incorporated into the proposed 2026 RTP/SCS from the 2022 RTP/SCS.

The proposed 2026 RTP/SCS is the culmination of a multi-year effort that aims to maintain or enhance the efficient and effective movement of goods, services, and persons. Further, the SCS, as part of the RTP, seeks to coordinate local land use and transportation systems within the region to reduce emissions from cars and light trucks. StanCOG is required by federal law to develop an RTP that determines the needs of the transportation system and prioritizes proposed transportation projects. The RTP is also necessary to obtain and allocate federal and state funding for regional transportation projects.

In compliance with *CEQA Guidelines* (Section 15063), StanCOG, as the lead agency responsible for the proposed 2026 RTP/SCS, solicited preliminary public agency comments on the project through distribution of a Notice of Preparation (Appendix A) and receipt of public comments during a scoping meeting held on April 30, 2025, in-person and virtually via Zoom. The Notice of Preparation (NOP) scoping process is described and discussed further in Section 1.7, *Public Review and Participation Process*.

1.3 Purpose and Legal Authority

This Program EIR has been prepared in compliance with the *CEQA Statutes and Guidelines*. In general, the purpose of an EIR is to (see *CEQA Guidelines* Section 15121(a)):

a. Analyze the environmental effects of the adoption and implementation of the Plan;
b. Inform decision-makers, responsible and trustee agencies and members of the public as to the range of the environmental impacts of the Plan;
c. Recommend a set of measures to mitigate significant adverse impacts; and
d. Analyze a range of reasonable alternatives to the proposed Plan.

As the lead agency for preparing this EIR, StanCOG will rely on the EIR's analysis of environmental effects in its review and consideration of the proposed 2026 RTP/SCS prior to approval.

As discussed in further detail below in Section 1.5.2, *CEQA Streamlining Under SB 375*, SB 375 provides streamlining benefits for certain transit-oriented projects consistent with an adopted SCS. Pursuant to these provisions of SB 375, this EIR has also been prepared to allow qualifying projects to streamline their environmental review.

1.4 Scope and Content

This document is a Program EIR. Section 15168(a) of the *CEQA Guidelines* states that:

> A Program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either: (1) geographically; (2) as logical parts in a chain of contemplated actions; (3) in connection with issuance of rules, regulations, plans, or other general criteria, to govern the conduct of a continuing program; or (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

As a programmatic document, this EIR presents a regionwide assessment of the impacts of the proposed 2026 RTP/SCS. Analysis of site-specific impacts of individual projects is not required in a program EIR. Many specific projects are not currently defined to the level that would allow for such an analysis. Individual specific environmental analysis of each project will be performed as necessary by the appropriate implementing agency prior to each project being considered for approval. This program EIR serves as a first-tier environmental document under CEQA supporting second-tier environmental documents for:

- Transportation projects developed during the engineering design process; and
- Land use and development projects, including residential or mixed-use projects and transit priority projects consistent with the SCS.

Project sponsors implementing subsequent projects would undertake future environmental review for projects in the proposed 2026 RTP/SCS. These agencies would include cities (Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock, and Waterford) and Stanislaus County. Agencies that would implement a project are also referred to herein as sponsor agencies in this EIR. This would include Caltrans, Amtrak, and transit agencies operating in the region, among others. All of these sponsors, as well as the StanCOG member agencies, would be able to prepare subsequent environmental documents that incorporate by reference the appropriate information from this program EIR regarding secondary effects, cumulative impacts, broad alternatives and other relevant factors. If the lead agency finds that implementation of a later activity would have no new effects and that no new mitigation measures would be required, that activity would require no additional CEQA review. Where subsequent environmental review is required, such review would focus on project-specific significant effects specific to the project, or its site, that have not been considered in this program EIR (*CEQA Guidelines* Section 15168).

Section 15151 of the *CEQA Guidelines* provides the following standards related to the adequacy of an Environmental Impact Report:

> An Environmental Impact Report should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among experts. The courts have looked not for perfection; but for adequacy, completeness, and a good faith effort at full disclosure.

Section 15146 of the *CEQA Guidelines* further provides the following additional standards related to the adequacy of an Environmental Impact Report:

> The degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR.
>
> (a) An EIR on a construction project will necessarily be more detailed in the specific effects of the project than will be an EIR on the adoption of a local general plan or comprehensive zoning ordinance because the effects of the construction can be predicted with greater accuracy.
>
> (b) An EIR on a project such as the adoption or amendment of a comprehensive zoning ordinance or a local general plan should focus on the secondary effects that can be expected to follow from the adoption, or amendment, but the EIR need not be as detailed as an EIR on the specific construction projects that might follow.

1.5 Implementation Issues and Future Environmental Review

The proposed 2026 RTP/SCS contains transportation projects that will be implemented over time. Implementation of the proposed 2026 RTP/SCS will follow a schedule based on the funding and demand for individual transportation projects and improvements. Implementation of the SCS component of the proposed 2026 RTP/SCS will require cooperation of the StanCOG member agencies and municipalities in the StanCOG region.

Implementation of the projects addressed in the proposed 2026 RTP/SCS must individually demonstrate compliance with the requirements of CEQA and/or NEPA (for projects requiring federal funding or approvals). As appropriate, individual projects may be required to prepare a project-level analysis to fulfill CEQA and/or NEPA requirements. The lead agency responsible for reviewing these projects would determine the level of review needed, and the scope of that analysis would depend on the specifics of the particular project. These project environmental documents may, however, use the discussion of impacts in this Program EIR to streamline project-specific reviews, for example as a basis of their assessment of these regional or cumulative impacts. These projects may also be eligible for CEQA streamlining under SB 375, as explained further below.

This Program EIR is a first-tier document that addresses the environmental impacts that may affect the StanCOG region from adoption and implementation of the proposed 2026 RTP/SCS. "Tiering" generally refers to using the analysis of a broader environmental document that covers the general impacts of a program or larger-scale project so that subsequent environmental documents for a related individual project can be narrow and focused on unique or unanalyzed issues. CEQA encourages the use of tiering to reduce the time and excessive paperwork involved in the review process by eliminating repetitive analyses of issues that were addressed in the Program EIR (*CEQA Guidelines* Section 15168).

SB 375 enables certain qualifying projects consistent with an SCS (Government Code 65080 (b)(2)(H)) to tier from a Program EIR prepared for an RTP/SCS. Tiered documents may consist of initial studies or focused EIRs that may incorporate by reference portions of the Program EIR from which they are tiered. If the environmental effects of subsequent actions are consistent with and adequately addressed by a certified Program EIR, additional environmental analysis may be unnecessary.

If the proposed 2026 RTP/SCS is adopted and the program EIR is certified by StanCOG, the California Air Resources Board (CARB) must then confirm that the RTP/SCS, if implemented, would achieve the greenhouse gas emission reduction targets required by SB 375. Upon making this determination, a number of streamlining benefits may become available to lead agencies that carry out or approve future projects consistent with the proposed 2026 RTP/SCS.

For a lead agency to take advantage of many of the potential streamlining benefits associated with the SCS, it must be considered a Transit Priority Project that is consistent with the general use designation, density, building intensity and applicable policies specified for the project area in the SCS and meets the other statutory requirements outlined in Pub. Res. Code Sections 21155 et seq.

1.5.1 Streamlining Under SB 375

SB 375 provides streamlining benefits for Transit Priority Projects (TPP) and certain mixed-use projects (see PRC Sections 1155 et seq.). A TPP is a project that meets all of the criteria summarized below. For the purposes of this EIR, geographic areas that meet the TPP requirements are referred to as TPAs.

- Consistent with the general land use designation, density, building intensity, and applicable policies specified for the project area in the SCS;
- Located within half a mile of a major transit stop or high-quality transit corridor;
- Comprised of at least 50 percent residential use based on total building square footage, or as little as 26 percent residential use if the project has a floor area ratio of not less than 0.75; and
- Built out with a minimum of 20 dwelling units per acre (PRC Section 21155).

For the purposes of this EIR, geographic areas that meet the TPP requirements are referred to as TPAs. One of three potential streamlining benefits may apply to a TPP pursuant to SB 375, as described below.

First, TPPs that meet a detailed list of criteria set forth in PRC Section 21155.1 are termed Sustainable Communities Projects and are statutorily exempt from CEQA. Due to the extensive list of criteria that must be met to achieve this exemption, the exemption may only be available in limited circumstances.

Second, a TPP that does not qualify for the statutory exemption may be eligible to comply with CEQA using a Sustainable Communities Environmental Assessment (SCEA). An SCEA is similar to a streamlined negative declaration or mitigated negative declaration that requires a 30-day public review period (rather than the otherwise available 20-day public review period). In addition, unlike a negative declaration or mitigated negative declaration, a lead agency's decision to approve a TPP based on an SCEA is reviewed, if challenged, by a court under the substantial evidence standard (PRC Section 21155.2(b)(7)).

Third, a TPP that will result in one or more potentially significant impacts after mitigation may be reviewed using a tiered TPP EIR as established by PRC Section 21155.2(c). A tiered TPP EIR is only required to address the significant or potentially significant effects of the TPP on the environment and is not required to include a discussion of (1) growth inducing impacts, (2) any project specific or cumulative impacts from cars and light duty truck trips generated by the project on global warming or the regional transportation network, (3) cumulative effects that have been adequately addressed and mitigated in prior applicable certified EIRs, (4) off-site alternatives, or (5) a reduced density alternative to address effects of car and light truck trips generated by the TPP (PRC Sections 21155.2 (c), 21159.28(a) and (b)).

In addition to the benefits provided for TPPs, SB 375 provides streamlining benefits for residential or mixed use residential projects, as defined in PRC Section 21159.28(d), that are consistent with the use designation, density, building intensity, and applicable policies specified for the project area in the SCS but do not meet the criteria for TPPs. Projects eligible for streamlining must incorporate applicable mitigation measures required by a prior environmental document, such as this EIR if it is certified by StanCOG.

Projects that qualify to use the SB 375 CEQA streamlining benefits would still need to obtain discretionary permits or other approvals from the lead agency and the local jurisdiction, in accordance with local codes and procedures, including any agreements related to zoning, design review, use permits, and other local code requirements. The streamlining only applies to the CEQA processing of a project. Other development projects that do not fall into any of these categories could still use this EIR for other CEQA tiering benefits, as described in Section 1.3.4, *Other Tiering Opportunities*.

1.5.2 Streamlining Under SB 226

In 2011, the legislature enacted SB 226 to establish additional streamlining benefits applicable to infill projects consistent with an SCS that are consistent with the requirements set forth in *CEQA Guidelines* Section 15183.3 (PRC Sections 21094.5 (c), 21094.5.5). Unlike the CEQA streamlining benefits established by SB 375, the benefits created by SB 226 may apply to non-residential projects including qualifying commercial, retail, transit station, school, or public office building projects (*CEQA Guidelines*, Section 15183.3 (f)(1)).

1.5.3 Streamlining Under SB 743

SB 743 (2013) (PRC Section 21099 and 21555.4) created an exemption from CEQA for certain residential, employment center and mixed use development projects that are consistent with a Specific Plan (see Public Resources Code Section 21155.4.) (A Specific Plan implements a General Plan within a smaller geographic area, such as a downtown core or along a transit corridor; see Government Code Section 65450 et seq.). The exemption applies if a project meets all of the following criteria:

1. It is a residential, employment center, or mixed use project;
2. It is located within a transit priority area (TPA);
3. The project is consistent with a specific plan for which an environmental impact report was certified; and
4. It is consistent with an adopted SCS or alternative planning strategy.

The exemption cannot be applied if circumstances requiring preparation of a Subsequent or Supplemental EIR occur, for example if the project would cause new or worse significant environmental impacts compared to what was analyzed in the environmental impact report for the specific plan.

SB 743 also specifies that aesthetic and parking impacts of residential, mixed use residential, or employment center uses on infill sites within a TPA shall not be considered significant effects on the environment (see Public Resources Code Section 21099(d).)

1.5.4 Other Tiering Opportunities

Finally, for all other types of projects proposed to be carried out or approved by a lead agency within the region, the lead agency may utilize this EIR for the purposes of other allowed CEQA tiering (PRC Sections 21068.5, 21093-21094, *CEQA Guidelines* 15152, 15385). Tiering is the process by which general matters and environmental effects in an EIR prepared for a policy, plan, program or ordinance are relied upon by a narrower second-tier or site specific EIR (PRC Section 21068.5). Moreover, by tiering from this EIR (if certified by StanCOG), a later tiered EIR would not be required to examine effects that (1) were mitigated or avoided in this EIR, (2) were examined at a sufficient level of detail in this EIR to enable those effects to be mitigated or avoided by site specific revisions, the imposition of conditions, or by other means in connection with the approval of the later project (PRC Section 21094).

Recent CEQA legislation may also provide tiering opportunities for projects facilitated by the proposed 2026 RTP/SCS. Effective June 30, 2025, AB 130 introduces substantial reforms to streamline housing development under CEQA. The bill establishes a statutory CEQA exemption for qualifying infill housing projects located in urban areas up to 20 acres, provided they meet specific criteria such as adjacency to urban uses and avoidance of historic or environmentally sensitive sites. This exemption is designed to reduce environmental review burdens for projects that align with local zoning and planning standards. Projects identified in the proposed 2026 RTP/SCS that meet these criteria may be eligible for this exemption, offering a pathway for CEQA compliance that reflects consistency with regional planning objectives.

AB 130 also makes permanent several provisions of the Permit Streamlining Act, including timelines for application completeness and project approval, and limits the number of public hearings for qualifying housing projects. In addition, the bill codifies elements of the Housing Accountability Act

and SB 330, including protections for vested rights and restrictions on growth control measures. A notable provision is the statewide freeze on residential building code updates from October 1, 2025, through June 1, 2031, which aims to reduce regulatory uncertainty and development costs. Projects identified in the proposed 2026 RTP/SCS that meet these criteria may be eligible for this exemption, offering a pathway for CEQA compliance that reflects consistency with regional planning objectives.

SB 131, effective June 30, 2025, complements AB 130 by focusing on CEQA streamlining for infrastructure and public-serving projects. It introduces a new review pathway for "near miss" projects—those that narrowly fail to qualify for a CEQA exemption due to a single disqualifying condition. Under this provision, CEQA review is limited to the environmental effects of that specific condition, and such projects are exempt from analyzing alternatives or growth-inducing impacts. This approach may be applicable to certain transportation and infrastructure projects included in the proposed 2026 RTP/SCS, where project-level review can be focused on specific environmental considerations while maintaining consistency with CEQA requirements.

SB 131 also creates or expands CEQA exemptions for a range of project types, including advanced manufacturing facilities on industrial-zoned land, broadband infrastructure in public rights-of-way, updates to climate adaptation plans, High-Speed Rail maintenance facilities, and local rezoning actions that implement Housing Element commitments. In addition, the bill mandates biennial updates to *CEQA Guidelines* to improve clarity and address ambiguities. These changes reflect a broader policy shift toward facilitating development while maintaining targeted environmental protections, and they are expected to significantly impact the planning and approval processes for both housing and infrastructure projects across California. These provisions may be relevant to RTP/SCS implementation, particularly where local jurisdictions pursue projects or planning actions that align with broader state objectives related to climate adaptation, infrastructure modernization, and housing production.

1.6 EIR Content and Format

This document includes discussions of environmental impacts related to several issue areas. The analysis of environmental impacts identifies impacts by category: significant and unavoidable, significant but mitigable, less than significant, and no impact or beneficial. It proposes mitigation measures, where feasible, for identified significant environmental impacts to reduce project generated impacts. The responsible agency for each mitigation measure is also identified. It is the responsibility of the lead agency implementing specific projects to conduct the necessary environmental review consistent with CEQA and where applicable, incorporate mitigation measures provided herein and developed specifically for the project to minimize environmental impacts and/or reduce impacts to less than significant.

This Program EIR has been organized into seven chapters. These include:

1.0 **Introduction.** Provides the statement of purpose, project background, description of the type of environmental document and CEQA streamlining opportunities, and information about the EIR content and format.

2.0 **Project Description.** Presents and discusses the project objectives, project location and specific project characteristics.

3.0 **Environmental Setting.** Provides a description of the existing physical setting of the project area and an overview of the progress in implementing the 2026 RTP/SCS.

4.0 **Analysis of Environmental Issues.** Describes existing conditions found in the project area and assesses potential environmental impacts that may be generated by implementing the proposed project, including cumulative development in the region. These potential project impacts are compared to "thresholds of significance" in order to determine the nature and severity of the direct and indirect impacts. Mitigation measures, intended to reduce adverse, significant impacts below threshold levels, are proposed where feasible. Impacts that cannot be eliminated or mitigated to less-than-significant levels are also identified.

5.0 **Other CEQA Required Discussions.** Identifies growth inducing impacts that may result from implementation of the proposed project, as well as long-term effects of the project and significant irreversible environmental changes.

6.0 **Alternatives.** Describes alternatives to the proposed project and compares each alternatives environmental impacts to the proposed project.

7.0 **References/Preparers.** Lists all published materials, federal, state, and local agencies, and other organizations and individuals consulted during the preparation of this EIR. It also lists the EIR preparers.

1.7 Public Review and Participation Process

StanCOG is committed to effectively involving the public in the update of the RTP/SCS; and therefore, has conducted an extensive outreach process during the preparation of this Draft EIR to affected agencies, organizations and members of the public interested in the proposed RTP/SCS. StanCOG will continue to provide, opportunities for the public to participate in the development of the RTP/SCS.

StanCOG initiated the EIR scoping process on April 17, 2025, with an initial circulation of a NOP to public agencies and persons considered likely to be interested in the project and its potential impacts. The NOP provided formal notification to all federal, state and local agencies involved with funding or approval of the project, and to other interested organizations and members of the public, of the preparation of this Draft EIR for the project. A copy of the NOP is provided in Appendix A along with all written responses received. In addition, StanCOG held a Scoping Meeting in-person and virtually via Zoom on April 30, 2025. Table 1-1 summarizes the issue areas from the responses of the NOP circulation, as well as the public comments from the Scoping Meeting.

Table 1-1 NOP and Scoping Meeting Comments

Commenter	Issue Area/Issues Raised	How and Where Addressed in the EIR
Agency Comments		
Native American Heritage Commission	▪ Consultation pursuant to Senate Bill 18 and Assembly Bill 52 ▪ Impacts to Tribal Cultural Resources ▪ Confidentiality of information submitted by a Tribe ▪ Consideration of feasible mitigation	All issues are addressed in Section 4.5 *Cultural Resources,* and Section 4.15, *Tribal Cultural Resources.*

Commenter	Issue Area/Issues Raised	How and Where Addressed in the EIR
California Department of Fish and Wildlife	▪ CDFW's role as trustee and responsible agency on the project ▪ Impacts to special-status species within the project area ▪ Impacts to federally listed species within the project area ▪ Consultation with CDFW regarding lake or streambed alteration ▪ Impacts to nesting birds ▪ Cumulative impacts and Alternatives analysis	All issues and cumulative impacts are addressed in Section 4.4, *Biological Resources.* Alternatives are addressed in Chapter 6, *Alternatives.*

1.8 Environmental Review Process

The environmental impact review process, as required under CEQA, is summarized below and illustrated in Figure 1-1. The steps are presented in sequential order.

1. **Notice of Preparation**. After deciding that an EIR is required, the lead agency (StanCOG) must file a NOP soliciting input on the EIR scope to the State Clearinghouse, other concerned agencies, and parties previously requesting notice in writing (*CEQA Guidelines* Section 15082; Public Resources Code Section 21092.2). The NOP must be posted in the County Clerk's office for 30 days. StanCOG filed the NOP with the County Clerk's Office and the State Clearinghouse on April 17, 2025 for a review period that ended on May 15, 2025.
2. **Draft EIR Prepared.** This Draft EIR contains: a) table of contents or index; b) summary; c) project description; d) environmental setting; e) discussion of significant impacts (direct, indirect, cumulative, growth-inducing and unavoidable impacts); f) a discussion of alternatives; g) mitigation measures; and h) discussion of irreversible changes.
3. **Notice of Availability.** A public notice of Draft EIR availability must be given through at least one of the following procedures: a) publication in a newspaper of general circulation; b) posting on and off the Project site; and c) direct mailing to owners and occupants of contiguous properties. The lead agency must solicit input from other agencies and the public and respond in writing to all comments received (Public Resources Code Sections 21104 and 21253).
4. **Final EIR.** The Final EIR must include: a) the Draft EIR; b) copies of comments received during public review; c) list of persons and entities commenting; and d) responses to comments.
5. **Certification of Final EIR.** Prior to making a decision on the proposed project, StanCOG must certify that: a) the Final EIR has been completed in compliance with CEQA; b) the Final EIR was presented to the decision-making body of the lead agency; and c) the decision making body reviewed and considered the information in the Final EIR prior to approving a project (*CEQA Guidelines* Section 15090).
6. **Lead Agency Project Decision.** StanCOG may a) disapprove the project because of its significant environmental effects; b) require changes to the project to reduce or avoid significant environmental effects; or c) approve the project despite its significant environmental effects, if the proper findings and statement of overriding considerations are adopted (*CEQA Guidelines* Sections 15042 and 15043).

7. **Findings/Statement of Overriding Considerations**. For each significant impact of the project identified in the EIR, StanCOG must find, based on substantial evidence, that either: a) the project has been changed to avoid or substantially reduce the magnitude of the impact; b) changes to the project are within another agency's jurisdiction and such changes have or should be adopted; or c) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible (*CEQA Guidelines* Section 15091). If an agency approves a project with unavoidable significant environmental effects, it must prepare a written Statement of Overriding Considerations that sets forth the specific social, economic, or other reasons supporting the agency's decision.
8. **Mitigation Monitoring Reporting Program.** If StanCOG is required to make findings on significant effects identified in the EIR, it shall adopt a reporting or monitoring program for mitigation measures that were adopted or made conditions of project approval to mitigate significant effects.
9. **Notice of Determination (NOD).** StanCOG must file a NOD after deciding to approve a project for which an EIR is prepared (*CEQA Guidelines* Section 15094). StanCOG shall file the NOD with the County Clerk. The NOD must be posted for 30 days and sent to anyone previously requesting notice. Posting of the NOD starts a 30 day statute of limitations on CEQA legal challenges (Public Resources Code Section 21167[c]).

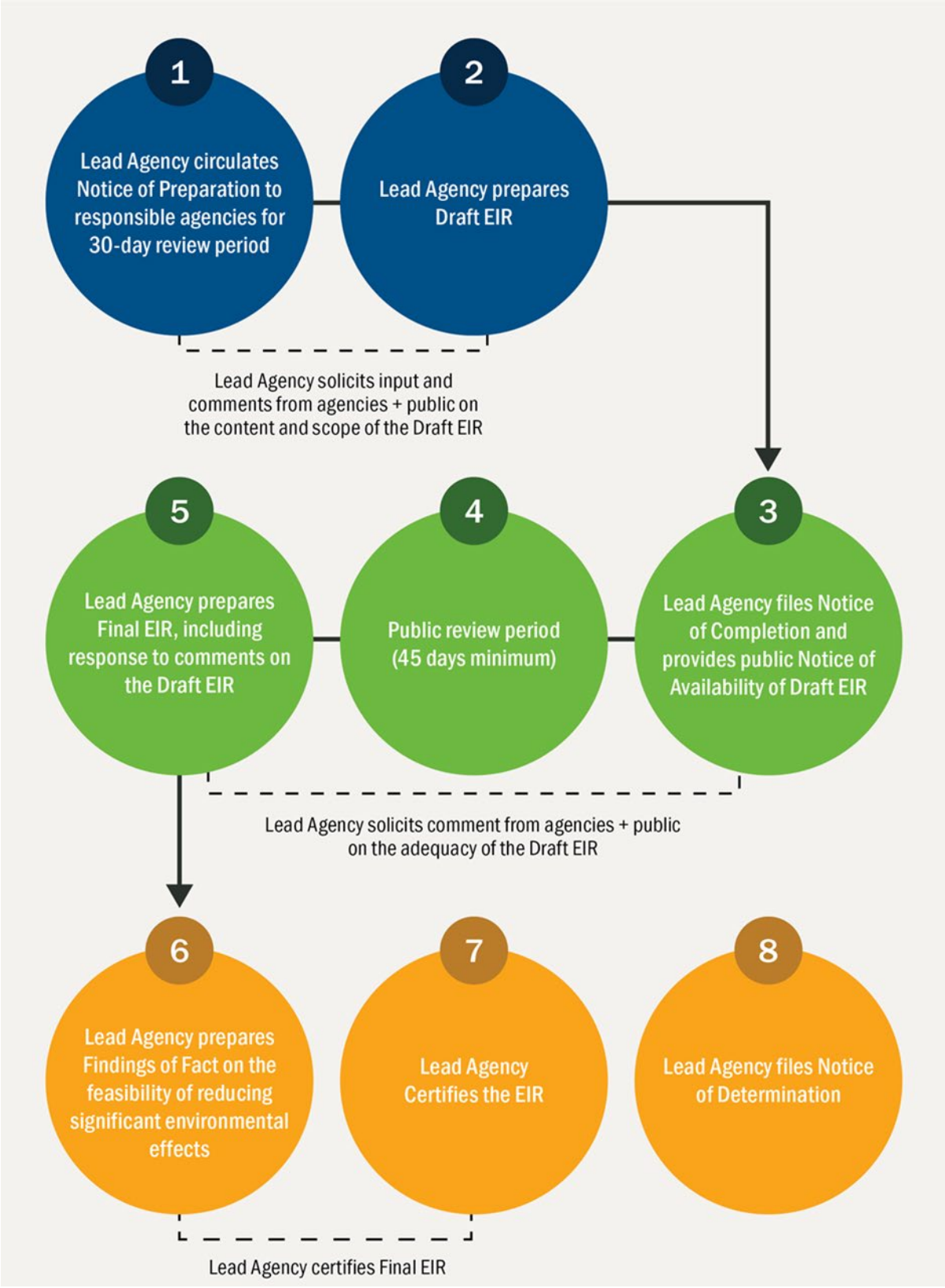
1.9 Lead and Responsible Agencies

The *CEQA Guidelines* require the identification of lead, responsible, and trustee agencies. StanCOG is the lead agency for the proposed project because it has the principal responsibility for approving the project.

A responsible agency is an agency other than the lead agency that has discretionary approval authority over certain components of a project (the *CEQA Guidelines* define a public agency as a State or local agency, but specifically exclude federal agencies from the definition). A trustee agency refers to a State agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California (for example, the California Department of Fish and Wildlife). While no responsible agencies or trustee agencies are responsible for approvals associated with adoption of the proposed 2026 RTP/SCS, implementation of projects identified in the proposed 2026 RTP/SCS will require permits and approvals from lead, trustee, and responsible agencies, which may include the following:

- Stanislaus County
- City of Ceres
- City of Hughson
- City of Modesto
- City of Newman
- City of Oakdale
- City of Patterson
- City of Riverbank
- City of Turlock
- City of Waterford
- Stanislaus Regional Transit Authority Board
- Turlock Transit
- California Transportation Commission
- California Department of Transportation
- California Department of Fish and Wildlife
- California Department of Conservation
- Central Valley Regional Water Quality Control Board
- San Joaquin Valley Air Pollution Control District

Figure 1-1 Environmental Review Process



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2 Project Description

This section describes the proposed 2026 Regional Transportation Plan and Sustainable Communities Strategy (proposed 2026 RTP/SCS, or Valley Vision 2049), as well as the project objectives, project location and characteristics, proposed 2026 RTP/SCS transportation projects, the preferred land use scenario selected for the SCS, and discretionary actions needed for approval.

2.1 Lead Agency

Stanislaus Council of Governments (StanCOG)
(Regional Transportation Planning Agency)
1111 I Street, Suite 308
Modesto, California 95354

2.2 Background

The objective of the proposed 2026 RTP/SCS is to comply with the current California Transportation Commission Regional Transportation Plan Guidelines, pursuant to Government Code Section 14522. The guidelines require the preparation of a regional transportation plan, and a long-range transportation planning document which would provide policy guidelines regarding the planning and programming of transportation projects within Stanislaus County through 2049. Further, Government Code Sections 65050, 65400, 65584.01-04, 65587, 65588 and Public Resources Code Section 21155 were amended in January 2009 when Senate Bill (SB) 375 became law, requiring coordinated planning between regional land use and transportation plans to increase efficiency and reduce GHG emissions. The following sections describe the legislative requirements and local objectives associated with the proposed 2026 RTP/SCS.

General Legislative Requirements

Stanislaus Council of Governments (StanCOG), as both the federally designated metropolitan planning organization (MPO) and the State-designated regional transportation planning agency (RTPA) for Stanislaus County, is required by both federal and State law to prepare a long-range (at least 20-year) transportation planning document known as a Regional Transportation Plan (RTP). The RTP is an action-oriented document used to achieve a coordinated and balanced regional transportation system.

StanCOG is also responsible for preparing a Sustainable Communities Strategy (SCS) as part of the RTP, pursuant to the requirements of California Senate Bill 375 as adopted in 2008 (discussed further below). The SCS sets forth a forecasted development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, is intended to reduce greenhouse gas (GHG) emissions from passenger vehicles and light trucks to achieve the regional light-duty vehicle GHG reduction targets set by the California Air Resources Board (CARB).

The California Transportation Commission's document *2024 California Regional Transportation Plan Guidelines* serves as the guidance for RTP development (CTC 2024). Under both federal and State

law, StanCOG must update its RTP every four years.[1] StanCOG adopted its most recent RTP/SCS update in 2022 (2022 RTP/SCS). The 2018 RTP/SCS covered a 25-year period between 2018 and 2046 (StanCOG 2022).

SB 375 Requirements

The Sustainable Communities Strategy and Climate Protection Act, SB 375 (codified at CAL.GOVT CODE Sections 14522.1, 14522.2, 65080.01, 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588; CAL. PUB. RES. CODE Sections2161.3, 21155, 21159.28), is a law passed in 2008 by the California legislature that requires each MPO/RTPA to demonstrate, through the development of an SCS, how its region will integrate transportation, housing, and land use planning to meet the greenhouse gas (GHG) reduction targets set by the State. In addition to creating requirements for MPOs, it also creates requirements for the CTC and CARB. Some of the requirements include the following:

- The CTC must maintain guidelines for the travel demand models that MPOs develop for use in the preparation of their RTPs or MTPs.
- Each MPO must prepare an SCS as part of its RTP to demonstrate how it will meet the regional GHG targets.
- Each MPO must adopt a public participation plan for development of the SCS that includes informational meetings, workshops, public hearings, consultation, and other outreach efforts.
- If an SCS cannot achieve the regional GHG target, the MPO must prepare an Alternative Planning Strategy (APS) showing how it would achieve the targets with alternative development patterns, infrastructure, or transportation measures and policies.
- Each MPO must prepare and circulate a draft SCS at least 55 days before it adopts a final RTP or MTP.
- After adoption, each MPO must submit its SCS to CARB for review.
- CARB must review each SCS to determine whether or not, if implemented, it would meet the GHG targets. CARB must complete its review within 60 days.

CARB set targets for the StanCOG region to maintain or reduce greenhouse gas emissions in 2020 and in 2035. These targets apply to the StanCOG region as a whole for all on-road light-duty trucks and passenger vehicles emissions, and do not apply to individual cities or sub-regions. CARB is required to update 2035 GHG reduction targets every eight years for each region covered by one of the state's MPOs, or by 2026. The updated targets are currently being updated for this cycle of the RTP/SCS and are not currently available. Therefore, the proposed 2026 RTP/SCS would be subject to the CARB targets established in 2018: a 16 percent reduction in per capita GHG emissions for the planning year 2035, as compared to baseline per capita emissions levels in 2005. StanCOG, through the RTP/SCS, must reduce these levels to meet the 2035 target.

SB 375 specifically states that local governments retain their autonomy to plan local General Plan policies and land uses. The proposed 2026 RTP/SCS provides a regional policy foundation that local governments may build upon, if they so choose. The proposed 2026 RTP/SCS includes and accommodates the quantitative growth projections for the region. SB 375 also requires that forecasted development pattern for the region be consistent with the eight-year regional housing

[1] 23 C.F.R. Section450.322(c); Gov. Code Section65080(d)

needs as allocated to member jurisdictions through the Regional Housing Needs Allocation (RHNA) process under State housing law. RHNA, itself, is statutorily exempt from CEQA.

In addition, this proposed 2026 RTP/SCS EIR lays the groundwork for the streamlined review of qualifying development projects within Transit Priority Areas.[2] Qualifying projects that meet statutory criteria and are consistent with the proposed 2026 RTP/SCS are eligible for streamlined environmental review pursuant to CEQA. See Chapter 1, *Introduction*, for a full discussion of CEQA streamlining.

Measure L Expenditure Plan

Measure L is the Transportation Ordinance and Expenditure Plan approved by Stanislaus County voters on November 8, 2016. The measure raised the sales tax in Stanislaus County on April 1, 2017, by one-half cent for a total period of 25 years to improve local streets and roads, as well as improve connectivity and reduce congestion. Over the course of the 25-year plan, it is estimated that 960 million dollars will be generated for local transportation improvements. Funds will be used for all phases of project implementation, including planning: environmental, permits, design, right-of-way, and/or construction capital and operations projects. The additional revenues and available funds from Measure L will likely be sourced into funding for projects included in the proposed 2026 RTP/SCS.

Infrastructure Investment and Jobs Act

The Infrastructure Investment and Jobs Act (IIJA)(Public Law 117-58), was signed into law on November 15, 2021. The IIJA reauthorizes surface transportation programs through fiscal year 2026 and builds upon the policy framework and performance-based planning provisions established under Moving Ahead for Progress in the 21st Century Act and the Fixing America's Surface Transportation Act. The IIJA maintains the core metropolitan and statewide transportation planning requirements under 23 U.S. Code Section 134 and Section 135, while expanding the scope of planning to further address climate change, equity, resiliency, and infrastructure modernization. In the development of the MTP and RTPs, the IIJA continues to require MPOs and RTPAs to:

- Coordinate with officials responsible for other types of planning activities affected by transportation, such as land use, housing, economic development, environmental protection, freight, and emergency management.
- Engage traditionally underserved and disadvantaged communities to ensure equitable access to transportation planning and project benefits.
- Incorporate consideration of climate change, environmental justice, and resilience, particularly regarding the impact of extreme weather and natural disasters on transportation infrastructure.
- Improve infrastructure condition, safety, and system efficiency, while supporting economic vitality, freight mobility, and multimodal connectivity.

The IIJA adds emphasis on:

- Reducing greenhouse gas emissions through transportation planning and investments.
- Increasing resilience to natural hazards and climate-related events.
- Investing in complete streets, bicycle/pedestrian infrastructure, and multimodal transportation.

[2] A Transit Priority Area is an area within ½-mile of high-quality transit: a rail stop or a bus corridor that provides or will provide at least 15-minute frequency service during peak hours by the year 2035.

- Strengthening public involvement and interagency coordination, including with housing and health agencies.
- Supporting equitable access to transportation options for disadvantaged communities.

The proposed 2026 RTP/SCS prepared by StanCOG has been developed to comply with the planning requirements of the IIJA and its associated regulations under 23 CFR Part 450.

Environmental Justice

StanCOG is required to address social equity and environmental justice in the RTP. The legal basis for environmental justice stems from the Civil Rights Act of 1964, along with Executive Order 12898 (February 1994), which states that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." StanCOG must evaluate how the RTP/SCS might impact minority and low-income populations and must ensure that the plan does not have a disproportionate adverse impact on any such populations.

In addition, per 23 C.F.R. Section 450.316(a)(1)(vii), the participation plan that StanCOG must develop and use must describe explicit procedures, strategies, and desired outcomes for "[s]eeking out and considering the needs of those traditionally underserved by existing transportation systems, such as low-income and minority households, who may face challenges accessing employment and other services."

Regional Transportation Plans

As noted, the procedures for developing RTPs are provided in the CTC's Regional Transportation Plan Guidelines (2024). The guidelines identify the purpose of an RTP to be as follows:

- Provide an assessment of current modes of transportation and the potential of new travel options within the region;
- Project/estimate the future needs for travel and goods movement;
- Identify and document specific actions necessary to address the region's mobility and accessibility needs;
- Guide and document public policy decisions by local, regional, state, and federal officials regarding transportation expenditures and financing;
- Identify needed transportation improvements in sufficient detail to serve as a foundation for:
  - Development of the Federal Transportation Improvement Program (FTIP) and the Interregional Transportation Improvement Program (ITIP);
  - Facilitation of the National Environmental Protection Act (NEPA)/404 integration process; and
  - Identification of project purpose and need.
- Employ performance measures that demonstrate the effectiveness of the transportation improvement projects in meeting the intended goals.

- Promote consistency between the California Transportation Plan, the regional transportation plan and other transportation plans developed by cities, counties, districts, Native American Tribal Governments and State and Federal agencies in responding to statewide and interregional transportation issues and needs;
- Provide a forum for 1) participation and cooperation, and 2) facilitating partnerships that reconcile transportation issues which transcend regional boundaries; and
- Involve community-based organizations as part of the public, Federal, State and local agencies, Native American Tribal Governments, as well as local elected officials, early in the transportation planning process so they are included in discussions and decisions on the social, economic, air quality, and environmental issues related to transportation.

RTPs must include long-term horizons (at least 20 years) that reflect regional needs, identify regional transportation issues/problems and develop and evaluate solutions that incorporate all modes of travel. RTPs must also recommend a comprehensive approach that provides direction for programming decisions to meet the identified regional transportation needs. RTPs must be consistent with the applicable requirements of the IIJA and other federal laws and regulations, including conformity with the 1990 Clean Air Act Amendments and consistency with the FTIP.

2.3 Project Objectives

The purpose of the proposed 2026 RTP/SCS is to coordinate and facilitate the programming and budgeting of all transportation facilities and services within Stanislaus County through the year 2049 and demonstrate how the region will integrate transportation and land use planning to meet the GHG reduction targets established by the California Air Resources Board (CARB) and in accordance with other State and Federal regulations. It identifies reasonably available sources of funding for transportation. The proposed 2026 RTP/SCS is a plan for improving the quality of life for residents of Stanislaus County by planning for wise transportation investments and informed land use choices. The RTP/SCS aims to achieve variety and efficiency in travel choices, as well as a safe, secure, and efficient transportation system to provide improved mobility and access. It includes strategies to generally improve air quality, improve health, and reduce greenhouse gas emissions consistent with SB 375 requirements. The plan achieves its overall objectives by combining transportation investment and policies with integrated land use strategies that reduce per capita vehicle miles traveled (VMT) and emissions. The project objectives are as follows:

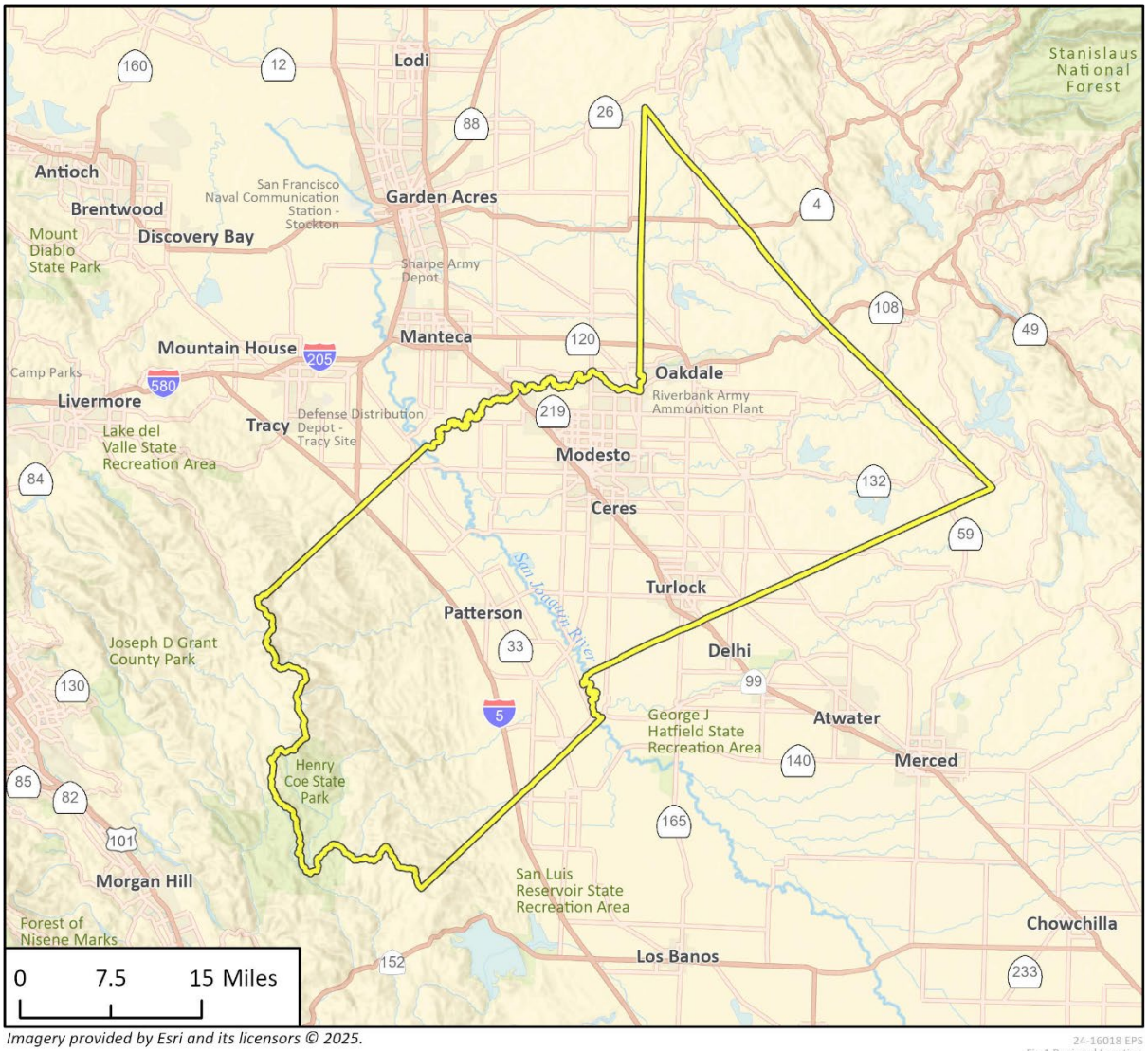
- **Mobility and Accessibility.** Improve the ability of people and goods to move between desired locations and provide a variety of modal and mobility options.
- **Safety and Health.** Operate and maintain the transportation system to ensure public safety and security and improve the health of residents by improving air quality and providing more transportation options.
- **Social Equity.** Promote equitable access to opportunities by ensuring all populations share in the benefits of transportation improvements and are provided a range of transportation and housing choices.
- **System Preservation.** Maintain the transportation system in a state of good repair and protect the region's investment by maximizing use of existing transportation facilities.

- **Economic and Community Vitality.** Foster job creation, business attraction, retention, and expansion by improving quality of life. Facilitate economic development and opportunities through infrastructure investments that support goods movement within and through the region, including but not limited to the county's strategic freight corridors.
- **Smart Infrastructure.** Coordinate, monitor, and integrate planning and programming for intelligent transportation systems (ITS), smart infrastructure, demand-responsive transportation, and automated vehicles.
- **Sustainable Development Pattern.** Provide a mix of land uses and compact development patterns and encourage infill development to preserve agricultural land and natural resources.
- **Resiliency and Reliability.** Harden infrastructure to resist, absorb, recover from, or successfully adapt to adversity or a change in conditions including climate change.
- **Congestion Management.** Maintain or reduce congestion as compared to current levels.
- **Environmental Quality.** Consider environmental impacts when making transportation investments and minimize impacts on clean air and natural resources. Support infrastructure investments that facilitate vehicle electrification and the provision of electrification infrastructure in public and private parking facilities and structures.
- **Project Delivery.** Efficiently use available transportation funding to expedite project delivery of transportation improvements within the region for the benefit of residents of Stanislaus County and the traveling public in general.

2.4 Project Location

The proposed 2026 RTP/SCS covers the entire area of Stanislaus County and includes the cities of Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock, and Waterford, as well as unincorporated areas within the County (see Figure 2-1). In addition, the proposed 2026 RTP/SCS covers the Turlock Municipal Airport to the southeast of Stanislaus County, which is operated by the City of Turlock and the site of proposed aviation projects. Capital improvement projects identified in the proposed 2026 RTP/SCS are located on state highways, county roads and locally owned streets, as well as on airport property, transit district property and public utility lands.

Figure 2-1 Regional Location



Imagery provided by Esri and its licensors © 2025.

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Fig 1 Regional Location

Project Location

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2.5 Project Characteristics

The most recent RTP/SCS was adopted by StanCOG in 2022 (2022 RTP/SCS). This 2026 update is a technical update which reflects changes in planning assumptions, planning lists, legislative requirements, demographics, local land use policies, and resource constraints while preserving the foundational elements of the 2022 RTP/SCS.

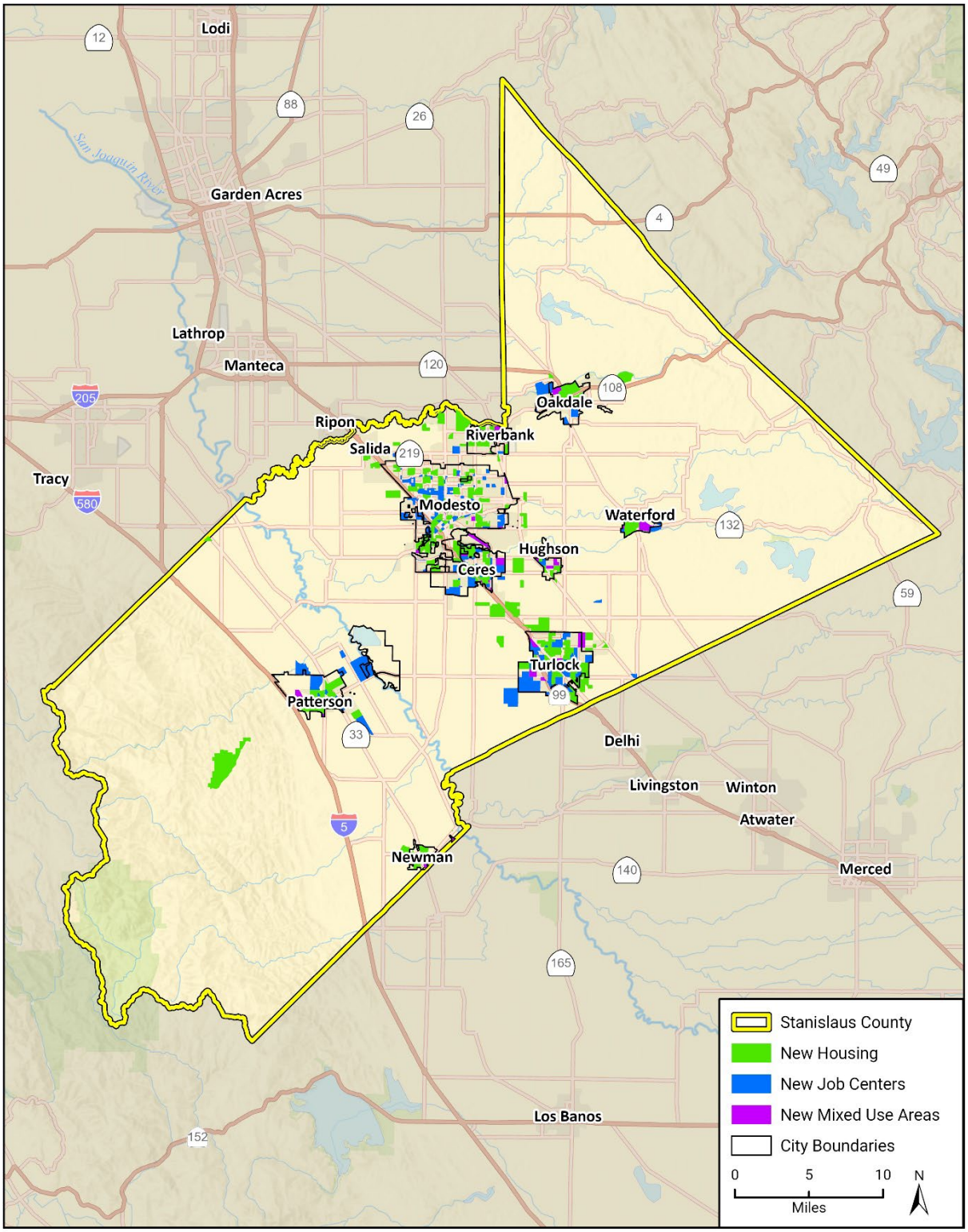
The proposed 2026 RTP/SCS plans how the Stanislaus County Region will meet its transportation needs for the approximately 24-year period from 2025 to 2049, considering existing and projected future land use patterns as well as forecast population and job growth. Continued growth in the region would occur independently with or without implementation of the RTP/SCS. Therefore, the RTP/SCS is intended to accommodate the inevitable growth of the region and distribution of that growth. The RTP/SCS would not directly increase population; rather, the RTP/SCS intends to provide a framework on how to plan for expected growth. The proposed 2026 RTP/SCS plans for approximately $12.1 billion in revenues expected to be available to the region from all transportation funding sources over the course of the planning period. It identifies and prioritizes expenditures of this anticipated funding for transportation projects of all transportation modes: highways, streets and roads, transit, rail, bicycle and pedestrian, as well as transportation demand management measures and intelligent transportation systems.

2026 RTP/SCS Preferred Land Use Scenario

The proposed 2026 RTP/SCS is based on a preferred land use and transportation scenario (Scenario C, also referred as the "Mixed Use with Job Focus" scenario)[3] and focuses on adding housing near employment centers while expanding transit and regional bike networks to better connect neighborhoods to jobs. The preferred land use scenario assumes that 70 percent of housing growth occurs in center and corridor infill areas; 20 percent occurs in neighborhood infill areas; and 10 percent occurs in new growth areas. Of the proposed new housing growth, 84 percent of it would occur in jobs-rich areas. Transit investments are targeted at prioritizing employment access in the Stanislaus region's largest commercial centers, linking downtown Modesto to Riverbank and Ceres. Scenario C's development patterns emphasize matching housing to employment and providing viable non-automobile options for commute trips. Scenario C provides frequent transit connections between key job-serving areas in the region while also expanding regional active transportation networks, investing in bicycle and pedestrian infrastructure to increase neighborhood coverage and connectivity to targeted transit routes from residential communities. This land use scenario would reduce greenhouse gas emissions by approximately 11 percent by 2035, with a minimal amount of farmland impacted or converted to non-agricultural use. Figure 2-2 shows the 2022 RTP/SCS envisioned land use scenario that would be carried through the proposed 2026 RTP/SCS.

[3] StanCOG staff presented four possible scenarios or transportation futures for consideration as the foundation of the proposed 2026 RTP/SCS during preliminary planning. The approach to the proposed 2026 RTP/SCS places emphasis on continuation of the goals and strategies from the 2022 plan. The 2022 RTP/SCS has provided a guide for specific policy and funding decisions made by the StanCOG Board and informed by committee recommendations and actions since the adoption of the previous RTP/SCS. The 2026 plan update will continue to serve as the general framework for future Board actions. StanCOG selected Scenario A, the Business as Usual scenario, as the foundational scenario upon which the proposed 2026 RTP/SCS is based and is comprised of a pattern of future growth and transportation system investment for the region emphasizing growth on underutilized land along the region's commercial corridors and downtown areas. The other scenarios are distinguished by varying land use patterns, and investment strategies, which were then modeled for efficiency.

Figure 2-2 2026 Continued RTP/SCS Land Use Scenario



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EIRFig X 2026 Continued RTP SCS Land Use Scenario

2026 RTP/SCS Framework

There are four required elements of the RTP (Policy Element, Sustainable Communities Strategy, Financial Element, and Action Element); all of which must be internally consistent. The goals and strategies in the policy element reflect regional priorities for mobility, which are supported by the assumptions in the SCS, and are further reflected in the funding allocations in the financial element. A scenario represents the potential future interaction of these elements. Each land use scenario has been evaluated through a series of metrics to inform policymakers and the public how the scenario meets regional goals and strategies for improvement over current conditions. Each element's relationship to scenario development is discussed in the subheadings below.

Development Patterns

- Infill within downtowns and mixed-use neighborhoods;
- Limited expansion of existing community boundaries; and
- Greater emphasis on growth in downtowns and mixed-use centers.

Complementary Uses

- Compact development within mixed-use centers and in new traditional neighborhoods;
- Increased mix of housing-type options through increased proportion of multifamily housing; and
- Services, employment and housing in proximity.

Development Density

- Average residential density is 15.9 dwelling units per acre;
- Greater percentage of new multifamily, mixed-use housing and duplex/townhomes within and near downtowns and centers;
- Provide a mix of smaller lot single-family and multifamily housing in new neighborhoods;
- Limited large lot single family development; and
- Development occurs at the upper end of general plan densities.

Transit/Transportation Corridors

- Increased investment and availability of alternative modes of travel; and
- Assumes an ACE station in Modesto

The proposed 2026 RTP/SCS is organized into the following chapters:

- **Chapter 1: Executive Summary.** Includes an overview of the RTP/SCS, the preferred scenario and its performance, an explanation of the planning process, and the allocation of transportation funding.
- **Chapter 2: Introduction.** Discusses legal authority, regulatory setting and planning initiatives, and transportation and land use issues related to controlling growth within Stanislaus County. In addition, the chapter discusses the overall purpose of the RTP/SCS, goals and objectives, and outlines the planning process.

- **Chapter 3: Regional Transportation System.** Describes the overall existing conditions of the planning area, which includes roadways, active transportation infrastructure, public transit, and aviation.
- **Chapter 4: Future Conditions.** The chapter continues to discuss potential future transportation possibilities, including the topic of technology trends (topic of transportation as a service, autonomous vehicles, and car sharing). The chapter also discusses land use patterns, demographics such as existing and forecasted population growth, housing needs, and economic and employment conditions. Lastly, the chapter includes the Investment Plan, which describes how the RTP/SCS allocates and applies existing and new sources of revenue, and fiscal constraints.
- **Chapter 5: Financing Investment Plan.** The RTP provides projections for local, state, and federal funds, and distinguishes between formula and competitive funding sources. Future revenue projections are presented in Chapter 5.
- **Chapter 6: System Preservation.** Analyzes the effect of the RTP/SCS planning and project implementation process on minority and low-income populations, to ensure that no one population is unfairly burdened or rewarded based on transportation investments.
- **Chapter 7: Scenario Development.** Provides a summary of the RTP/SCS intent and the link between land use and transportation planning. This chapter discusses the different scenarios proposed in the planning process, as well as addresses the transportation performance measures which gauge the performance of the RTP.
- **Chapter 8: Scenario Evaluation.** This section discusses the measures used to gauge performance of each scenario and the selection of the preferred scenario.
- **Chapter 9: Consultation and Cooperation.** The RTP/SCS Public Participation Plan was developed at the outset of the planning effort to establish an approach for public engagement to gather information about the diverse regional transportation needs. This section highlights the public outreach component of the Plan and the efforts taken to engage stakeholders and members of the public.

Of these ten chapters of the proposed 2026 RTP/SCS, the Planning Process, Investment Plan and Transportation Performance Policies (included in Chapters 1, 6, and 7) are the three sections that include provisions with the potential to create physical changes to the environment and will be the primary focus for analysis in this EIR.

The Policy Element of the proposed 2026 RTP/SCS has been broadened to include both a regional policy section and a local policy section. The regional policy section includes specific policies for various topical issues and transportation modes (highways and roadways, bicycle, transit, etc.). The local policy section includes references to city and county level plans, policies, and regulations that implement and support implementation of the proposed 2026 RTP/SCS.

INVESTMENT PLAN

The Investment Plan provides details on the available revenue assumptions used to identify proposed transportation projects and transportation management strategies to support the region's long-term growth. The Plan emphasizes rehabilitation and operational improvements, as well as transit and active modes of transportation to a greater degree than past plans to ensure the transportation network supports the region. Particular attention is paid to the movement of goods to ensure continued growth and diversification of the economy.

PERFORMANCE MEASURES/SCENARIO DEVELOPMENT

The Performance Measures portion of the proposed 2026 RTP/SCS delineates the current program of highways, streets and roadways, bicycle and pedestrian, transit, intelligent transportation systems, transportation demand management, railroad, and aviation projects. Many of the programmed and planned transportation improvement projects carry over from the 2022 RTP/SCS; however, the proposed 2026 RTP/SCS also includes several new projects. All projects listed in the proposed 2026 RTP/SCS are defined as Tier I improvements. The Tier I list contains short- and long-range projects that are fully fundable from anticipated revenue sources and would likely be programmed during the life of the RTP (by 2049).

The recommended Tier I improvements for each transportation mode type, including roadways, transit, bicycle and pedestrian and aviation, are intended to implement a balanced multimodal circulation system, improve air quality by reducing vehicle miles traveled (VMT) and greenhouse gas (GHG) emissions while accommodating anticipated travel demand. In addition to the typical transportation system improvements such as widening roadways and adding traffic signals to improve congestion and mobility, StanCOG is committed to analyzing alternative strategies such as transportation system management (TSM), transportation demand management (TDM), and ITS to increase system efficiencies. The alternative strategies will provide increased opportunities for non-auto travel; thus, reducing VMT and improving overall air quality. The land use scenario envisioned by the proposed 2026 RTP/SCS is shown in Figure 2-2. The locations of new program or plan transportation improvements are shown in Figure 2-3 through Figure 2-7. In addition, Table 2-1 through Table 2-5 at the end of this section list the Tier 1 project by category type. The projects included in those tables comprise the complete program of improvements evaluated within this EIR.

Transportation Projects

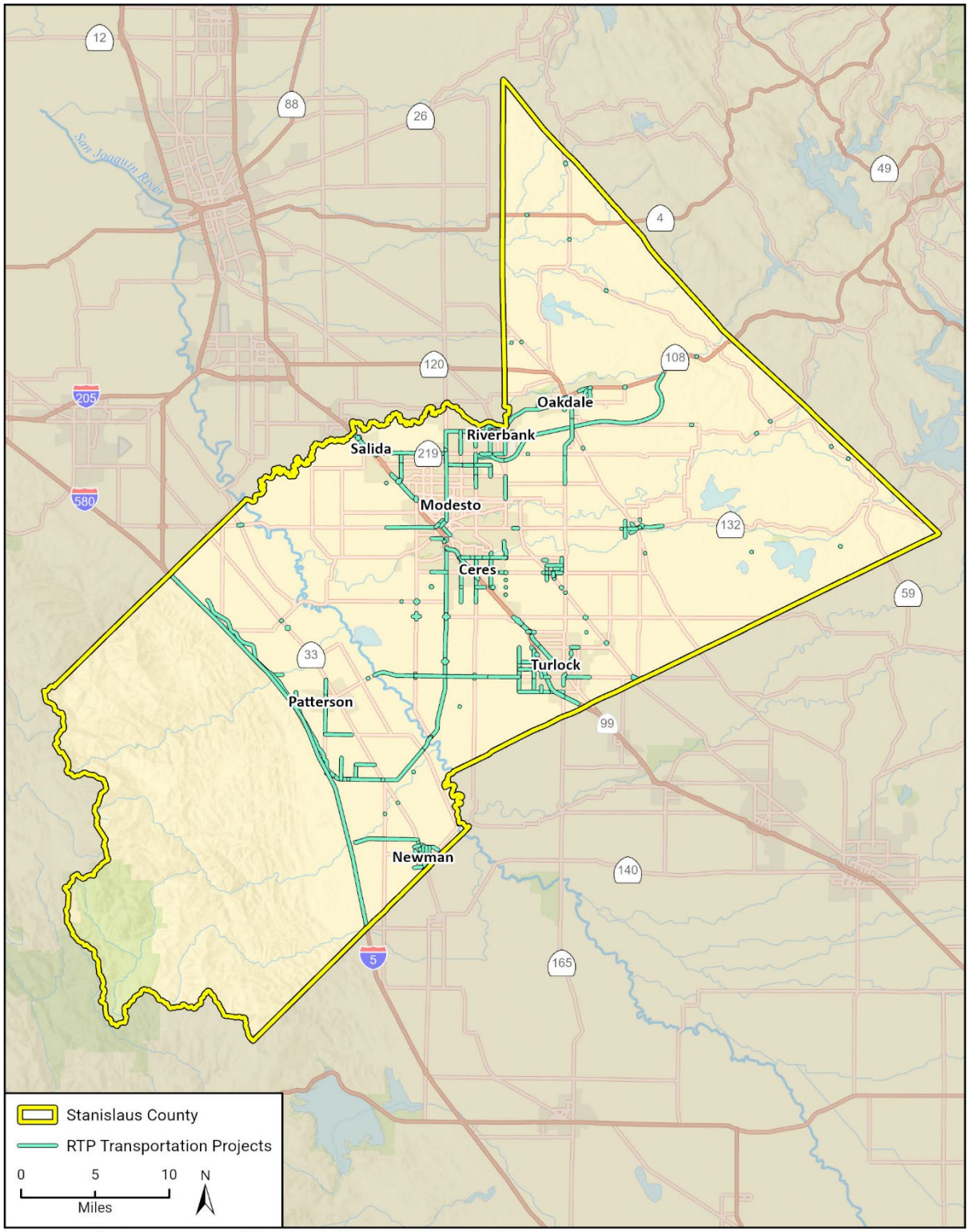
Roadway Improvements

Each jurisdiction provides projects for the state highway or local roadway system within its jurisdiction. These are shown in Table 2-1 and Table 2-5. The projects address current and future roadway needs based on existing traffic conditions and projected traffic increases anticipated based on growth planned in the jurisdictions and General Plans.

The proposed roadway projects include road widenings and extensions, various improvements to interchanges/intersections, bridge replacements, and construction of freeway overcrossings. Road widening, auxiliary lane construction, roadway rehabilitation, railroad crossing improvements and various other improvements including signal installation are programmed or planned along highways and along local arterials in Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock, Waterford and throughout Stanislaus County.

TDM and ITS projects involve the use of methods to reduce demands on the roadway system and technologies that allow more efficient use of the existing road network. Proposed TDM and ITS projects are emphasized and include the installation of fiber optic and signal interconnect cables, associated conduit, and closed-circuit television cameras.

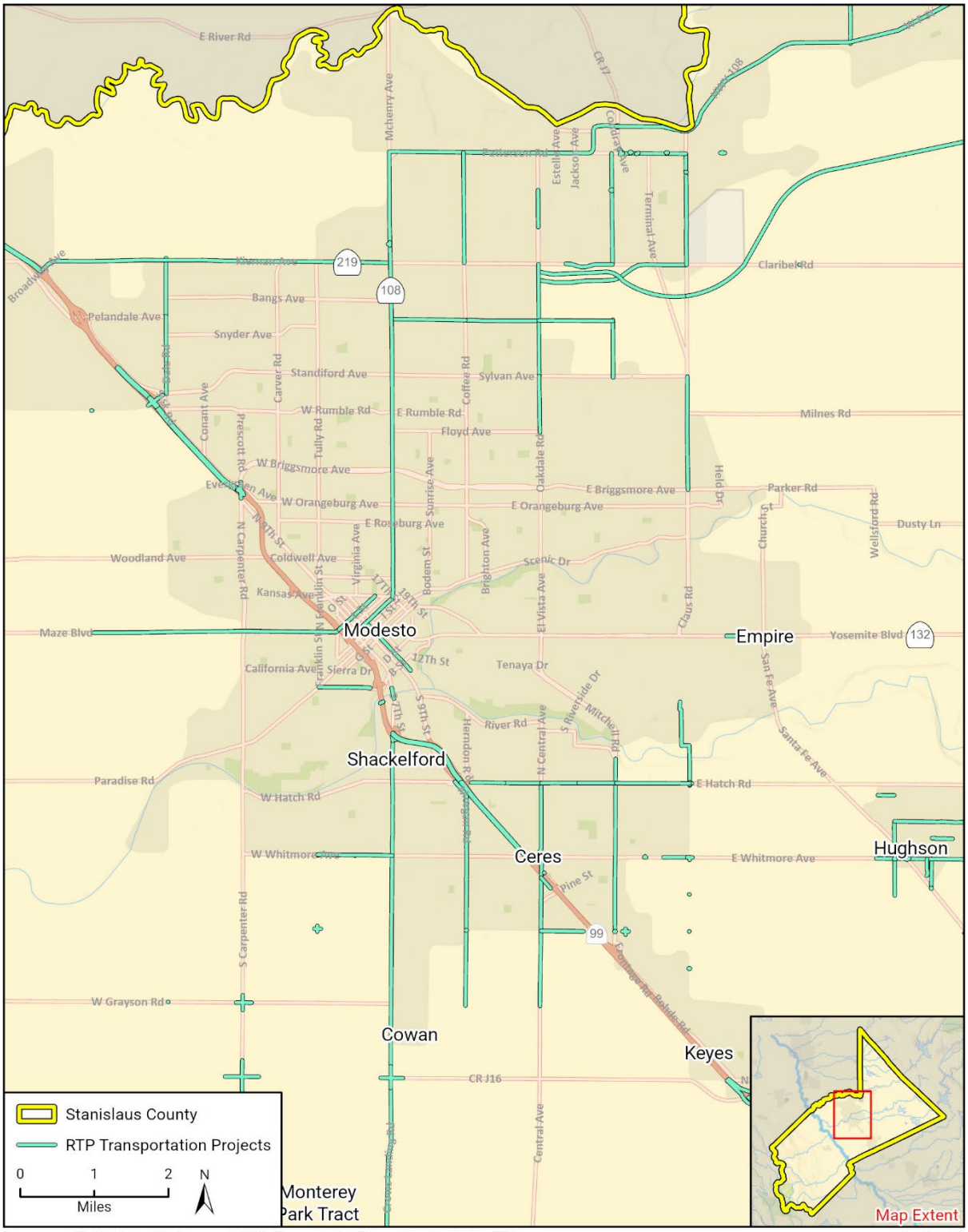
Figure 2-3 2022 RTP/SCS Transportation Improvement Projects – StanCOG Region



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EIRFig 2 Project Location Overview

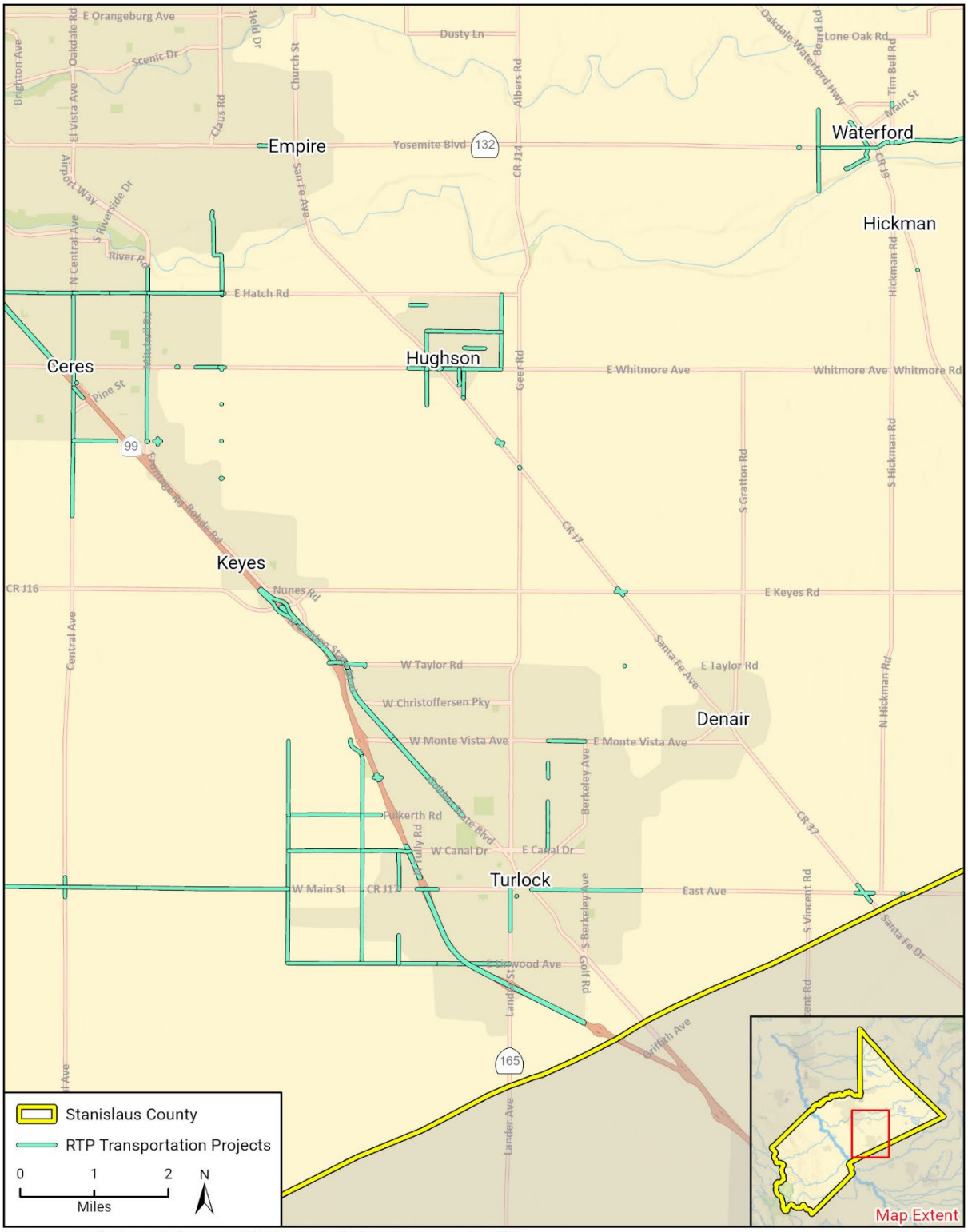
Figure 2-4 2022 RTP/SCS Transportation Improvement Projects – Modesto/Ceres



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24-16018 EPS
EIRFig 2-2 Project Locations

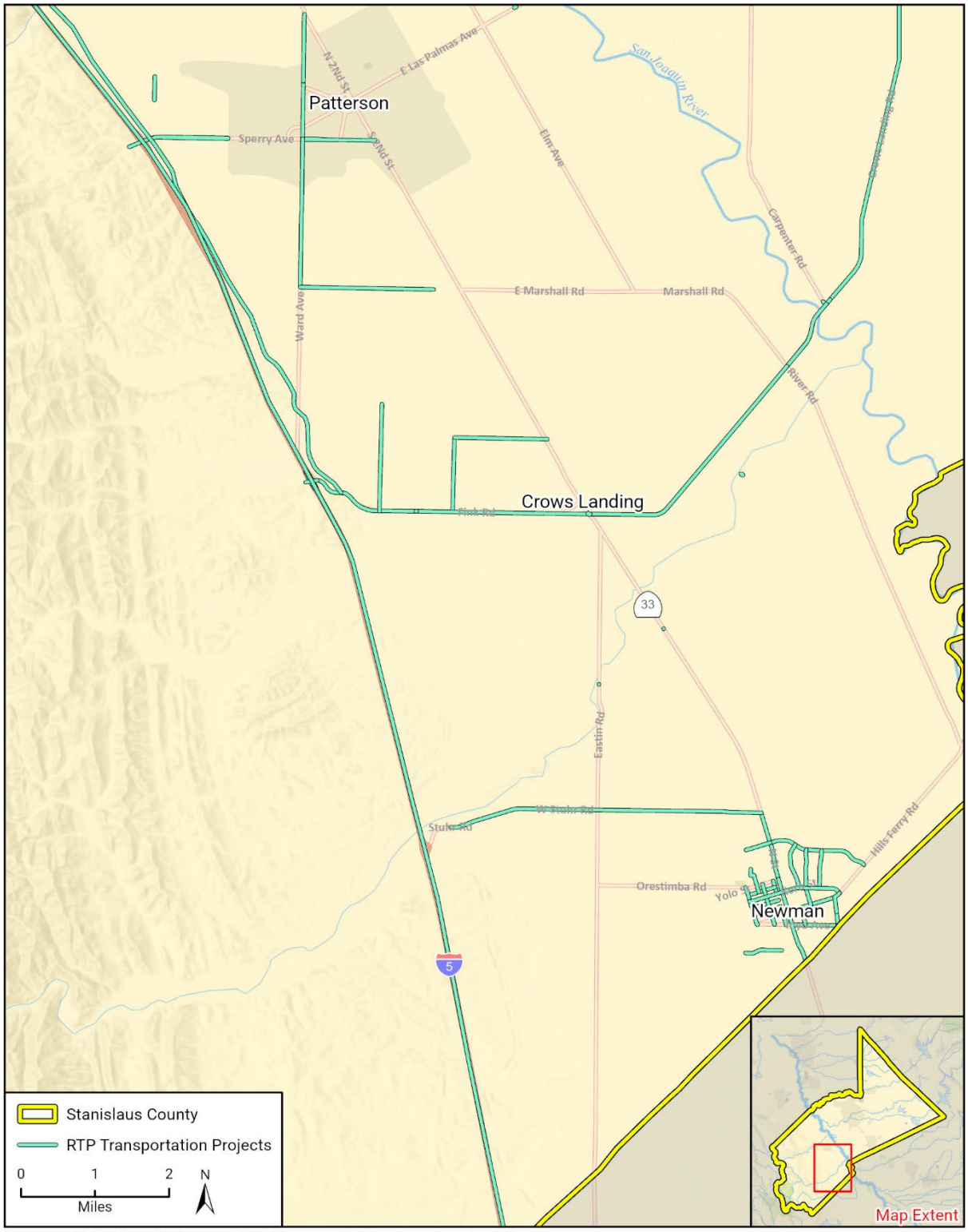
Figure 2-5 2022 RTP/SCS Transportation Improvement Projects – Turlock/Hughson/Waterford



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24-16018 EPS
EIRFig 2-2 Project Locations

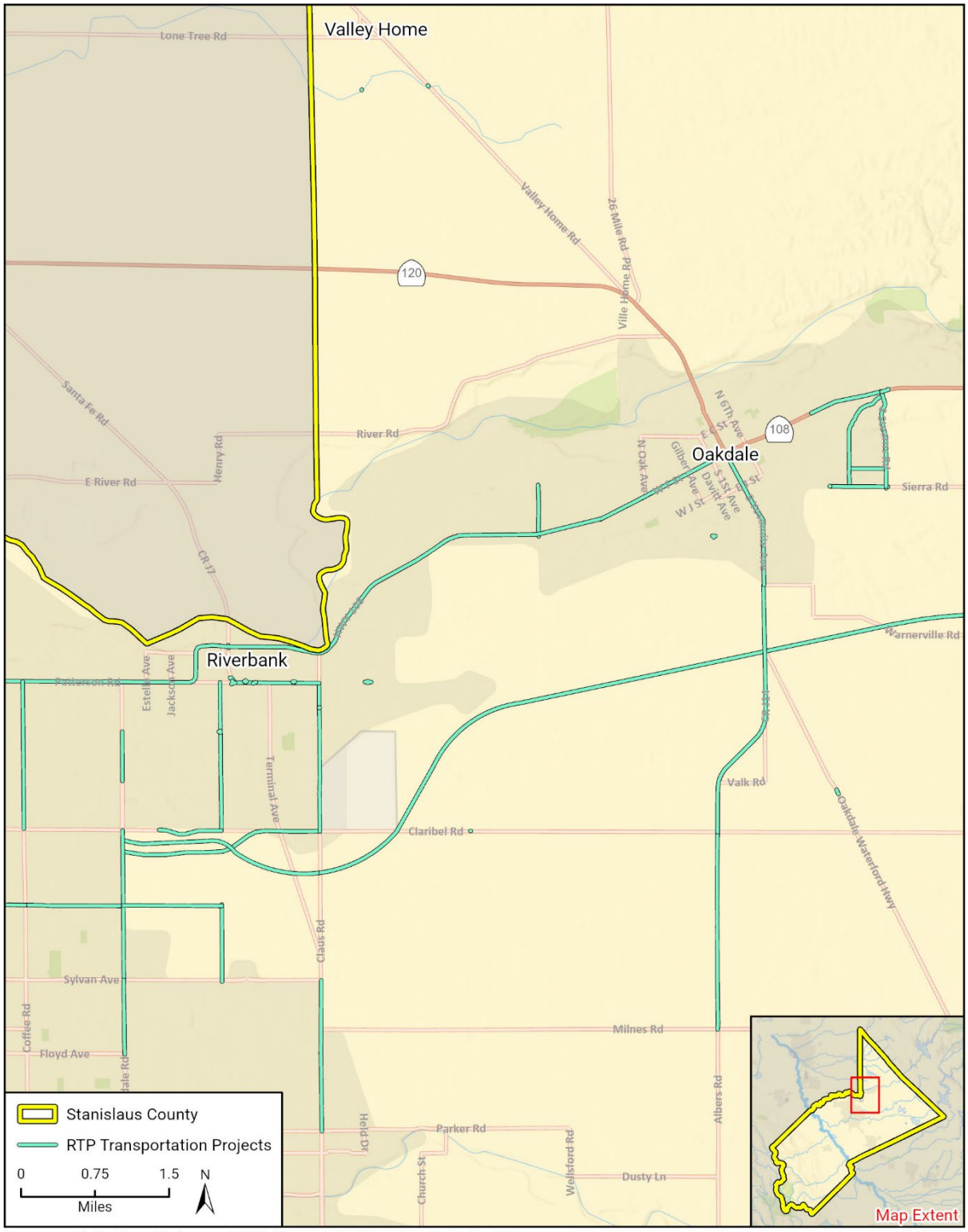
Figure 2-6 2022 RTP/SCS Transportation Improvement Projects – Patterson/Newman



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24-16018 EPS
EIRFig 2-2 Project Locations

Figure 2-7 2022 RTP/SCS Transportation Improvement Projects – Riverbank/Oakdale



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24-16018 EPS
EIRFig 2-2 Project Locations

Transit Improvements

Proposed new transit improvements for the various transit agencies are listed in Table 2-2. The purchase of new buses as well as various capital improvements is included for each of the four transit operators, including Ceres Area Transit, Modesto Area Express, Stanislaus County and Bus Line Service of Turlock. New transportation services, such as bus rapid transit (BRT) and express routes are proposed by all four operators. Passenger rail, including construction of a new passenger rail station, is expected in the City of Modesto and Turlock. Various bus stop enhancements, and other improvements are included, as well improvements to the Altamont Corridor Express (ACE) throughout the County.

Bicycle and Pedestrian Improvements

Bicycle and pedestrian improvements are listed in Table 2-3 Improvements consist of various signage, striping and signal modifications to facilitate multiple use of existing roadway corridors throughout the county; specifically, the City of Modesto is programming the construction of several bicycle paths; the City of Oakdale is programming the construction of several Class I bicycle lanes. Other projects are located in but not limited to the Cities of Ceres, Hughson, and Patterson. Stanislaus County is programming construction of widened shoulders and Class II bicycle paths.

Airport Improvements

Newly proposed aviation projects in the proposed 2026 RTP/SCS are listed in Table 2-4. The proposed 2026 RTP/SCS includes a number of new projects at Modesto City-County Airport, Turlock Airport and Oakdale Airport. These include construction of new entrance roads-, terminal building, runway extension, fire station, maintenance shop and various other improvements. New projects at Turlock and Oakdale Airports include pavement preservation construction, infrastructure improvements, new runway construction and various other improvements.

Table 2-1 through Table 2-5are found at the end of this chapter that list the projects that make up the 2026 RTP for StanCOG.

2.6 Intended Use of the EIR

2.6.1 Agencies Expected to Use EIR in Decision-making

The *CEQA Guidelines* (Section 15124(d)) require EIRs to identify the agencies that are expected to use the EIR in their decision-making, and the approvals for which the EIR will be used. StanCOG will use this Program EIR as part of its review and approval of the proposed 2026 RTP/SCS. The sponsor agencies for projects analyzed in this program EIR may use it as the basis for cumulative analysis of specific project impacts, together with the projected growth in the region. Cities and the county may use information in this EIR in their future housing elements. In addition, for projects that may be eligible for CEQA Streamlining, applicable mitigation measures from this EIR shall be incorporated into those projects as appropriate. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions. It is the intent of StanCOG that member agencies and others use the information contained within the Program EIR in order to “tier” subsequent environmental documentation of projects in the region. Information from this document may also be incorporated in future County Congestion Management Programs and associated environmental documents, as applicable.

The proposed 2026 RTP/SCS is intended to meet the changing socioeconomic, transportation infrastructure, financial, technological, and environmental conditions of the region. Individual projects are preliminarily identified in the proposed 2026 RTP/SCS; however, this Program EIR is programmatic in nature and does not specifically analyze these projects. Project-level analysis will be prepared by implementing agencies on a project-by-project basis. Project-specific planning and implementation undertaken by each implementing agency will depend on a number of issues, including: policies, programs and projects adopted at the local level; restrictions on federal, state and local transportation funds; the results of feasibility studies for particular corridors; and further environmental review of proposed projects.

This EIR is also intended to help activate the CEQA streamlining benefits of SB 375 for local jurisdictions and private development, described in Section 1.5, *Implementation Issues and Future Environmental Review.*

2.6.2 Required Permits and Approvals

Approval of the proposed 2026 RTP/SCS is at the discretion of StanCOG. It should be noted that additional environmental review will have to be conducted by the project sponsor, as the lead agency for the individual projects contained within the proposed 2026 RTP/SCS, prior to project implementation. Depending on the location of the project, future approvals for individual transportation projects identified in the proposed 2026 RTP/SCS would have to be completed by one or more of the following agencies:

- Stanislaus Council of Governments
- California Department of Transportation (Caltrans) – Roadway and Aviation
- California Public Utilities Commission's Rail Crossings Engineering Section
- Cities of: Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock, and Waterford
- County of Stanislaus
- Ceres Area Transit
- Modesto Area Express
- Stanislaus Regional Transit
- Bus Line Service of Turlock
- Modesto City-County Airport
- Turlock Airport
- Oakdale Airport

Caltrans is a responsible agency for all projects planned within its rights-of-way. Any public agencies or private developers contemplating work within a Caltrans right-of-way are required to obtain an approved encroachment permit from Caltrans prior to beginning that work. The relationship of this EIR to future environmental review of individual transportation projects is further discussed in Chapter 1, *Introduction*.

Individual projects may also require permits from the following State agencies, which may use the EIR in their environmental reviews and consultations:

- California Department of Fish and Wildlife
- Central Valley Regional Water Quality Control Board
- San Joaquin Valley Air Pollution Control District

2.7 Relationship with Other Plans and Programs

The proposed 2026 RTP/SCS provides a sound basis for the allocation of state and federal transportation funds for transportation projects within Stanislaus County over the subsequent 24-years. The plan follows guidelines established by the State of California Transportation Commission (STC 2024) to:

- Describe the transportation issues and needs facing the County;
- Identify goals and policies for how StanCOG will meet those needs;
- Identify the amount of money that will be available for identified projects; and
- Include a list of prioritized transportation projects to serve the county's long-term needs consistent with the funds allocated while considering environmental impacts and planning for future land use.

The proposed 2026 RTP/SCS has been evaluated for consistency with the goals, policies and objectives currently being implemented by municipal and county planning agencies within the region. A consistency discussion of the proposed 2026 RTP/SCS and other land use plans and agencies is provided in Section 4.11, *Land Use and Planning*. The proposed 2026 RTP/SCS would be implemented with several other existing StanCOG programs designed to reduce adverse impacts to transportation resources, air quality, GHG emissions, and energy.

The proposed 2026 RTP/SCS Program EIR builds on the analysis and mitigation contained in the 2022 RTP/SCS Program EIR. The proposed 2026 RTP/SCS project list is similar to the project list for the 2022 RTP/SCS, although some of the transportation projects from the 2022 RTP/SCS are now under construction. The proposed 2026 RTP/SCS evaluates the most recent projects, policies and the most recently selected preferred land use scenario in the SCS and provides more direct comparisons between current conditions and expected future plan conditions. In addition, the RTP/SCS has been evaluated for consistency with the goals, policies and objectives currently being implemented by municipal and county planning agencies within the county as well as the Local Agency Formation Commissions (LAFCO) for Stanislaus County.

Table 2-1 Tier I Roadway Projects

Project ID	Location	Description
City of Ceres		
C15.1	Hatch Road from Herndon Road to Richland Avenue	Grind and overlay
C15.2	Hatch Road from Richland Avenue to Central Avenue	Grind and overlay, add curb and gutter
C15.3	Hatch Road from Central Avenue to Moffet Road	Road reconstruction, add curb and gutter
C15.4	Hatch Road from Moffet Road and Mitchell Road	Road reconstruction, add curb and gutter
C15.5	Hatch Road between Mitchell Road and Faith Home Road	Widen to 4 lanes
C22	Service Road and Morgan Road	Install Traffic Signal
C23	Mitchell Road/Service Road	Construct New Interchange – Phase I
C24	7th Street and Grayson Road	Widen from 2 to 4 lanes

Project ID	Location	Description
C25	Whitmore Avenue between Eastgate Boulevard and Faith Home Road	Widen from 2 to 4 lanes
C27	Ustick Road to Crows Landing	Widen from 2 to 4 lanes
C29	Hatch Road and Faith Home Road	Install Traffic Signal
C30	Hatch Road to Grayson Road	Widen from 2 to 4 lanes
C31	River Road to Service Road	Roadway improvements
C33	Service Road and Ustick Road	Install Traffic Signal
C33	Railroad Avenue, Central Avenue, Hackett Road	Overflow Parking ACE Station
C36	Whitmore Avenue and Boothe Road	Install Traffic Signal
C37	Whitmore Avenue and Knox Road	Install Traffic Signal
C39	Herndon Road to Faith Home Road	Install curb, gutter, bike lanes
C40	Lucas Road to Central Road	Install Complete Street Improvements
C43	Whitmore Avenue and Ustick Road	Install Traffic Signal
C46	Service Road to Grayson Road	Widen from 2 to 4 lanes
C48	Whitmore Avenue ad Faith Home Road	Install Traffic Signal
C72	El Camino Avenue at North Street	Surface Parking and undercrossing to ACE station
C76	TID Cres Main Canal at Service Road/Bridge 38C0222	Replace bridge for safety, widen lanes to meet C
Caltrans		
CA01	18.5/20.9	Install Ramp Metering, Add HOV Lanes, and Mixed Flow Lanes. Modify Onramp & Ramp Intersections
CA02	PM 4.9	Newman Intersection Oversight
CA03	22.56/24.75	Construction HOV lanes
CA04	Kasson/River Rd	Lenghten EB and WB two lanes transition
CA05	Crows Landing Rd/Fink Rd	Construct Traffic Signal or Roundabout
CA06	On SR 99 from Keyes Rd to Taylor Rd	Construct auxiliary lane
CA07	Near Patterson, from Fink Road Undercrossing No. 38-0114L to Khaksa Road Undercrossing No. 38-0127L/R at various locations. Rehabilitate bridge decks with concrete overlay, replace joint seals and/or approach slabs.	Rehabilitate bridge decks with concrete overlay, replace joint seals and/or approach slabs.
CA11	In Modesto, near Zeff Road Undercrossing.	Construct stormwater Best Management Practices (BMPs).
CA12	PM 3.63 to 4.10	Construct NB and SB SR-99 auxilliary lanes between Monte Vista rd to Taylor Rd

Project ID	Location	Description
CA13	In Waterford, from Reinway Avenue to F Street.	Upgrade pedestrian facilities to make compliant with the Americans with Disabilities Act (ADA) standards.
CA14	Bridge replacement in Stanislaus County on State Route 4 at Hoods Creed Bridge (#38 0041)	Bridge Replacement
CA15	Pavement Class I in Stanislaus County Route 5	Pavement Class I in Stanislaus County Route 5
CA16	Intersection SR 33/Frank Cox Road, north of city of Patterson	Install Left-Turn Channelization for southbound and northbound traffic
CA19	On SR 99 in the city of Modesto in Stanislaus county at Briggsmore Avenue, Standiford Avenue, Beckwith Road.	Collision Severity Reduction
CA20	Repair or replace old signals in Stanislaus county 108 PM 23.08 to 38.24	Repair or replace old signals in Stanislaus county 108 PM 23.08 to 38.24
CA21	Intersection SR 120/Wamble Road, east of the city of Oakdale.	Install Left-Turn Channelization for eastbound and westbound traffic.
CA22	Stanislaus 120 PM15.04	Bridge Replacement to address Fish Passage Priority.
CA23	NB & SB from Lander Ave (SR-165) to W Main Street	Construct NB & SB auxiliary lanes
CA24	Charity Way	Construct Traffic Signal or Roundabout
CA25	Howard Rd/Grayson Rd	Construct Traffic Signal or Roundabout
CA26	Between Codoni Rd and C & D Streets	Construct Two-Way Left Turn Lane
CA27	Between Carpenter Rd and Beckwith Rd	Construct NB & SB auxiliary lanes
CA28	Between Hatch Rd and Crows Landing Rd	Construct NB & SB auxiliary lanes
CA29	Between Whitmore Ave and Hatch Rd	Construct NB & SB auxiliary lanes
City of Hughson		
H07	Hatch Rd to Whitmore Ave	Install Complete Street Improvements
H08	Whitmore Ave to Santa Fe Ave	Improve to 2-lane Minor Collector
H09	7th Street and Santa Fe Avenue	Roadway Realignment Project
H11	Whitmore Avenue to S City Limit	Improve to 2-lane Major Collector (Goods Movement)
H15	Fox Road to Santa Fe	Improve to 2-lane Minor Collector
H17	West Limits to Tully Road	Pavement Reconstruction
H18	Charles to 7th	Pavement Reconstruction
H19	Tully To Euclid	2-inch grind and rubberized overlay
H20	West Limits to Euclid	Pavement Reconstruction
H21	7th Street to Mariposa Drive	Pavement Reconstruction
H22	Whitmore Avenue to 5th Street	Pavement Reconstruction
H23	Whitmore and Santa Fe Intersection	Intersection Improvements including signalization

Project ID	Location	Description
H24	Whitmore and Tully Road Intersection	Intersection Improvements including signalization
City of Modesto		
M24	Oakdale Rd to Roselle Ave	Extension of Roadway
M34	Oakdale Rd to Roselle Ave	Construct new 4 lane roadway
M49	J St. to Morton Blvd	Street Improvements and Pedestrian & Bicycle Enhancements
M50	Needham to 9th Street	Pedestrian & Bike Enhancements
M52	McHenry Ave to Coffee Rd	Widen from 2 to 6-lane Expressway
M53	Coffee Rd. to Oakdale Rd	Widen from 2 to 6-lane Expressway
M54	Pelandale Ave to Kiernan Ave	Widen from 4 to 6 lanes
M55	Pelandale Ave to Standiford Ave	Widen from 4 to 6 lanes
M56	Briggsmore to Sylvan	Widen from 2 to 4 lanes
M57	SR 99 to 9th Street	Various improvements
M58	Sylvan Ave to Claribel Avenue	Widen from 3 to 6 lanes
M59	Floyd Ave to Sylvan Ave	Complete Street Improvements
M60	Sylvan Ave to Claratina Rd	Widen from 2 to 4 lanes
M83	State Route 99 to Dakota Ave Phase 2	Construct a four lane freeway from N. Dakota Ave
M84	Briggsmore Interchange	Reconstruct Interchange
M88	Neece Ave. to Paradise Rd.	Complete Street Improvements
City of Newman		
N02	Highway 33 to Canal School Rd	Install Collector Street improvements
N03	Inyo Ave to South City limits	Install 4 Lane Arterial Roadway Improvements
N04	Highway 33/Sherman Parkway	Install Traffic Signal
N05	Highway 33 to Canal School Rd	Install Collector Street improvements
N06	Yolo St to Sherman Pkwy	Install 4 Lane Arterial Roadway Improvements
N07	Sherman Pkwy to Stuhr Road	Install 4 Lane Arterial Roadway Improvements
N08	CCID Canal to Highway 33	Install 2 Lane Arterial Roadway Improvements
N09	Yolo Avenue to Inyo Avenue	Install 4 Lane Arterial Roadway Improvements
N10	Mariposa to Stephens, including	Pavement Rehabilitation, Maintenance
N11	Merced to Inyo and Yolo to Kern	Pavement Rehabilitation, Maintenance
N12	Main Street to T Street	Pavement Rehabilitation, Maintenance
N13	Main Street to T Street	Pavement Rehabilitation, Maintenance
N14	Main Street to T Street	Pavement Rehabilitation, Maintenance
N15	Merced to Inyo Avenue	Pavement Rehabilitation, Maintenance
N16	Driskell to Rodeo Grounds Way	Realign Canal School Road to meet the Driskell Ave and Hills Ferry Road Intersection.
N17	Inyo Ave to Yolo Ave	Roadway rehabilitation, maintenance, pedestrian, and complete streets improvements
N18	SR33 to Hills Ferry Road	Pavement Rehabilitation and Maintenance
N19	Merced County line northward to Yolo Avenue	Highway and pedestrian safety improvements

Project ID	Location	Description
N20	Driskell to Sherman Parkway	Pavement Rehabilitation, Maintenance, and complete streets improvements
N21	Driskell to Sherman Parkway	Pavement Rehabilitation, Maintenance, and complete streets improvements
N22	Upper Rd to Prince Street	Pavement Rehabilitation, Maintenance, and complete streets improvements
N23	Merced St to Sherman Parkway	Roadway rehabilitation, maintenance, pedestrian, and complete streets improvements
N24	SR33 to Hardin Rd	Roadway rehabilitation, widening, intersection improvements, pedestrian, and complete streets improvements
N26	From Inyo Ave to Yolo St	Roadway rehabilitation, maintenance, pedestrian, and complete streets improvements
N27	From T Street to Hills Ferry Road	Roadway rehabilitation, maintenance, pedestrian, and complete
N28	From Hills Ferry Road to City Limits	Roadway rehabilitation, maintenance, pedestrian, and complete streets improvements
City of Oakdale		
O14	Maag Ave to Stearns Rd	Widen roadway 5-lanes with full frontage improvements
O15	Lee Ave to Stanislaus Ave/Wood Ave	Widen Roadway to 5-lanes, including realignment of existing sidewalk and frontage improvements infill on the North side of the street
O16	Orsi Road to Stearns Road	Install Complete Street Improvements. No existing roadway, will include full frontage improvements with sidewalk and Class 1 Bikeway and 3 lanes.
O17	Warnerville to F Street	Asphalt overlay, concrete repairs, bike lane striping
O17	F Street to Pontiac	Widen Roadway to 4-lanes from existing 2 lane road. Includes full frontage improvements.
O18	Sierra Rd to F St	Install Complete Street Improvements with full frontage improvements.
O19	Maag Ave to Stearns Rd	Install Complete Street Improvements with full frontage improvements on the north side of the road.
O20	F St to Sierra Rd	Install Complete Street Improvements to include 2 lanes, median, 2 bike lanes, and full frontage improvements.
O21	F Street/Crame Road Intersection	Improve intersection to include traffic signal pole relocation, modify signal, and restriping.
O22	F Street/Willowood Intersection	Project will include removal of existing median, paving, restriping, and traffic light reconfiguration.
O24	Intersection	Install Signal & Intersection Improvements
O27	Sierra Road/Maag Avenue Intersection	Striping & Signage to include a 3-way stop, turn lanes for traveling North on Maag.
O28	Intersection	Install Signal & Intersection Improvements
O32	SR108/120 & Stearns Road Intersection	Roundabout Improvements at Stearns and F Street
City of Patterson		
P03	Baldwin Road to Del Puerto Canyon Road	Install Complete Street Improvements

Project ID	Location	Description
P04	I-5 to Rogers Road	Signal and Off-Ramp Improvements at interchange. Widen Sperry Ave to 4 Lanes between Rogers Road and I-5.
P05	Delta Mendota to Keystone Pacific Park Way	Widen from 2 to 4 lanes.
P08	Raines Rd to I-5	Construct New Interchange at I-5.
P14	Salado Av and Ward Av	Install roundabout
P15	Las Palmas Av and Poplar Av	Signalize intersection and Lane improvement
P16	Sperry Road to Ward Avenue	Widen from 2 to 4 lanes.
P17	Sperry Av to American Eagle Way	Widen from 2 to 3 lanes.
P18	American Eagle Way to SR-33	Widen from 2 to 3 lanes.
P19	Sperry Av to Marshall Rd	Widen from 2 to 3 lanes.
City of Riverbank		
R18	First Street to Claus Rd	Install Complete Street Improvements
R19	Patterson to Claribel	Install Complete Street Improvements
R20	California to Claribel	Widen roadway from 2-4 lanes
R22	Patterson at Third	Signal improvements
R23	Claus at California	Signal improvements
R24	Patterson at Eighth	Signal improvements
R26	Roselle at Morrill	Intersection Improvements
R28	First Street north of Patterson Road	Railroad crossing improvements
R29	Third Street north of Patterson Road	Railroad crossing improvements
R30	Eighth Street north of Patterson Road	Railroad crossing improvements
R31	Snedigar Road north of Patterson Road	Railroad crossing improvements
R32	Patterson Road west of Terminal Avenue	Railroad crossing improvements
R33	SR-108 at First Street	Install Congestion Management improvements
R39	Paterson Road at First Street	Signal Improvements
R40	Claribel Road to Patterson	Widen roadway from 2-4 lanes
R41	Westgate to Morrill	Widen roadway from 2-4 lanes
R42	Squire Wells to Roselle	Widen roadway from 2-4 lanes
Stanislaus County		
S01	SR-99 to Interstate 5	Improve 22 miles to Expressway standards
S02	SR-99 Interchange with Crows Landing Road	Reconstruct interchange
S03	I-5 Interchange with Fink Road	Reconstruct interchange
S04	SR-99 Interchange with Hammett Road	Reconstruct interchange
S21	Various Locations	Roadway Rehabilitation

Project ID	Location	Description
S27	Hills Ferry Rd @ San Joaquin River	Seismic Bridge Replacement
S29	Seventh St at Tuolumne River Bridge	Seismic Bridge Replacement; 4 lane bridge with pedestrian access
S30	Crows Landing Rd and Keyes Rd	Intersection improvements
S31	Crows Landing Rd and Fulkerth Ave	Intersection Improvements
S32	Kilburn Rd at Orestimba Creek Bridge	Replace Bridge (Critical)
S33	Crows Landing Rd & Carpenter Rd	Intersection Improvements
S34	Carpenter Rd & Grayson Rd	Intersection Improvements
S35	Carpenter Rd & Keyes Rd	Intersection Improvements
S36	Carpenter Rd & W. Main St	Intersection Improvements
S38	W. Main St & Central Ave	Intersection Improvements
S43	Keyes Road and SR-99 Exit/Entrance Ramps	Ramp Signalization
S44	Santa Fe Ave & East Ave	Intersection Improvements
S45	Santa Fe Ave & Keyes Rd	Intersection Improvements; Upgrade Railroad Crossing Equipment
S46	Santa Fe Ave & Main St	Intersection Improvements; Upgrade Railroad Crossing Equipment
S47	Santa Fe Ave & Service Rd	Intersection Improvements; Upgrade Railroad Crossing Equipment
S56	Carpenter Rd to River Rd/ Marshall Rd	Widen to 3 lanes
S57	River Rd/Marshall Rd to SR-33	Widen to 3 lanes
S65	San Joaquin River to Carpenter Rd	Widen to 3 lanes
S66	Carpenter Rd to Crows Landing Rd	Widen to 3 lanes
S68	Mitchell Rd to Washington Rd	Widen to 3 lanes
S69	SR-99 to McHenry Ave	Widen to 6-lanes
S70	Cooperstown Road at Gallup Creek	Bridge Replacement - Off System Bridge Toll Credits
S71	Cooperstown Road at Rydberg Creek	Bridge Replacement - Off System Bridge Toll Credits
S78	Tim Bell Road at Dry Creek	Bridge Replacement - Off System Bridge Toll Credits
S80	Milton Road over Rock Creek Tributary	Bridge Replacement - Off System Bridge Toll Credits
S81	Sonora Road over Martells Creek	Scour Countermeasure
S82	Claribel Road to Warnerville Road	Widen to 5 lanes
S84	Over Claribel Bridge Lateral	Replace Bridge
S85	Over Lone Tree Creek	Bridge Rehabilitation
S86	Over Lone Tree Creek	Replace Bridge
S88	Over Hood Creek	Replace Bridge

Project ID	Location	Description
S89	Over T.I.D. Main Canal	Replace Bridge
S90	Over Main Canal @ Dallas Rd	Replace Bridge
S103	Hatch Road to Garner Road	2-Lane Expressway
S106	Over TID Upper Lateral #3	Replace Bridge
S107	Eastin Road & Orestimba Creek	Low water crossing - bridge or culvert construction
S108	Catfish Camp to 1,200' southwest	Raise Road profile
S109	Geer Road and Santa Fe Avenue	Intersection Improvements - curb, gutter, SD improvements @ NW corner
S110	W. Main St & Faith Home Rd	Intersection Improvements
S111	Faith Home Road at Whitmore Avenue	Intersection Improvements
S112	Faith Home Road at Roeding Road	Intersection Improvements
S113	Faith Home Road at Service Road	Intersection Improvements
S114	Claribel Road at Langworth Road	Intersection Improvements
S115	Dakota Road at Beckwith Road	Intersection Improvements
S116	Grayson Road at Vivian Road	Intersection Improvements
S117	Crows Landing Road at Marshall Road/River Road	Intersection Improvements
S119	Pirrone Road - Gateway Drive to Hammett Road	Roadway Realignment
S120	A Street at 3rd Street	Intersection Improvements
S123	Bell Road to SR 33	Widen to County Standard
S124	Fink Road to W. Ike Crow Road	Widen to County Standard
S125	Fink Road to CLIBP West Entrance	Widen to County Standard
S126	Ward Avenue to CLIBP Entrance	Widen to County Standard
S127	Sperry Avenue at SR 33	Intersection Improvements
S128	W. Ike Crow Road at SR 33	Intersection Improvements
S129	Fink Road at Bell Road	Intersection Improvements
S130	Fink Road at CLIBP Entrance	Intersection Improvements
S131	Oakdale Road to Claus Road	Construct 4-lane Expressway
S132	Claus Road to Albers Road	Construct 4-lane Expressway
S133	Albers Road to SR 120	Construct 4-lane Expressway
S134	Tully Road to Coffee Road	Construct 6-lane Freeway
S135	SR 99 Interchange with Keyes Road	Reconstruct interchange
S136	SR 99 to Dakota Avenue	Widen to 4-Lane Highway
S136	SR 99 Interchange with Keyes Road	Widen to 4-Lane Highway
S191	East Avenue over TID Main Canal, O.5 MI E/O Sant	Stand alone bridge scour countermeasure
S192	Morgan Road over TID Lateral #5, JCT at Harding	Stand alone bridge scour countermeasure

Project ID	Location	Description
S193	Lake Road over Peaslee Creek, 2.6 MI W JCT Yosem	Stand alone bridge scour countermeasure
S194	Warnerville Road over Dry Creek Tributary, 1.0 M	Stand alone bridge scour countermeasure
S195	Willms Road over Dry Creek Tributary, 0.1 MI W J	Stand alone bridge scour countermeasure
S196	Warnerville Road over Dry Creek Tributary, 1.0 M	Stand alone bridge scour countermeasure
S197	Faith Home Road & Redwood Road	Intersection improvements
City of Turlock		
T16	Tegner Rd to Dianne Dr	Widen from 2-lane to 4-lane Arterial with Class II bike facility and transit
T17	Olive Ave to Berkeley Ave	Install Median; Add one (1) lane with Class II bike facility
T18	Washington Rd to Tegner Rd	Widen from 2-lane to 4-lane Arterial with Class II bike facility
T19	Linwood Ave to Fulkerth Rd	Widen from 2-lane to 4-lane Arterial with Class II bike facility and transit
T22	Tuolumne Rd to Tornell Rd	Widen from 2-lane to 4-lane Arterial with Class II bike facility
T23	Canal Dr to Wayside Rd	Widen from 2-lane to 4-lane Arterial with Class II bike facility and transit
T24	Wayside Dr to North Ave	Widen from 2-lane to 4-lane Arterial with Class II bike facility and transit
T25	Walnut Rd to Lander Ave	Widen from 2-lane to 4-lane Collector with Class II bike facility and transit (West Ave. South to Lander)
T26	Walnut Rd to Washington Rd	Widen from 2-lane to 4-lane Collector with Class II bike facility
T27	Washington Rd to Kilroy Rd	Construct new 2-lane Collector with Class I bike facility
T28	Golden State Blvd to Daubenberger Rd	Widen from 2-lane to 4-lane Arterial with Class III bike facility from Minaret to S. Berkeley/Class II from S. Berkeley to Daubenberger and transit from Oak to S. Johnson
T29	Taylor Rd to Monte Vista Ave	Complete 6-lane Boulevard with Class II bike facility and transit from Christoffersen to Monte Vista
T30	Monte Vista Ave to Fulkerth Rd	Complete 6-lane Boulevard with Class II bike facility
T31	W. Main St to W. Canal Dr	Construct new Collector
T32	Monte Vista Ave to Fulkerth Rd	Complete 2-lane Industrial Collector
T33	Fulkerth Rd to north of Pedretti Park	Construct new 2-lane Industrial Collector
T34	Tegner Rd to Golden State Blvd	Widen from 2-lane to 4-lane Collector with Class II bike facility
T35	Spengler Way to W. Linwood Ave	Construct new Industrial Collector
T36	Golden State Blvd to SR-99	Widen from 2-lane to 4-lane Arterial with Class II bike facility
T37	W. Main St to Fulkerth Rd	Construct new 2-lane Industrial Collector with Class II bike facility
T39	Lander Ave (SR-165) to S. City Limits	Construct New Interchange
T40	Taylor Rd	Reconstruct existing Interchange
T41	Taylor Rd.	Reconstruct new interchange
T42	Tuolumne Rd	Construct New Overpass

Project ID	Location	Description
T43	Fulkerth Rd to Monte Vista Ave	Construct 4-lane Expressway with Class II bike facility and transit
T44	Golden State Blvd & Taylor Rd	Widen Intersection from 2 to 4 lanes with bike improvements
Waterford		
W07	Yosemite Blvd to Church	Curb, Gutter & Sidewalk Infill from Bentley to Dorsey on East side of road, Pavement grind and overlay with widening
W08	Loop	Reconstruct new interchange
W09	Western Ave to Yosemite Blvd.	Curb, Gutter & Sidewalk Infill on North, east and west side of Riverside, Pavement Rehabilitation
W13	Bentley Street to the Eastern City Limit	Widen Yosemite Blvd per Yosemite Blvd Corridor S
W14	Northern City Limit to Yosemite Blvd	Widen Reinway to 2 lane collector standard
W25	Yosemite Blvd to Southern City Limit	Widen Reinway to 2 lane collector standard
W26	Yosemite Blvd and Eucalyptus Ave	Construct roundabout per Yosemite Blvd Corridor
W27	Yosemite Blvd and Tim Bell Rd	Construct roundabout per Yosemite Blvd Corridor

Table 2-2 Transit Projects

Project ID	Jurisdiction	Location	Description
ACE			
A07	SJRRC	Stanislaus County	Operations to extend service to Modesto, Ceres, Turlock in 2030, Merced in 2035, and MITC in 2040.
A08	SJRRC	Stanislaus County	UPRR Capital Access Fees to extend service to Modesto, Ceres, Turlock in 2030, Merced in 2035, and MITC in 2040.
A09	SJRRC	Stanislaus County	UPRR Capitalized Maintenance Fees to extend service to Modesto, Ceres, Turlock in 2030, Merced in 2035, and MITC in 2040.
-	SJRRC	Interim Service with Keyes Layover and K Street Passenger Boarding	Construct Keyes Layover Track and Temporary boarding amenities at Modesto K Street
-	SJRRC	ACE Expansion	Construct bridges, second main track, station platforms, trackwork, parking, pedestrian under- and overcrossings, sidewalks, layover track, and modify at grade crossings
-	SJRRC	CP East Escalon to CP West Ballico	Construct seven bridges and approximately 19 miles of second mail track
City of Modesto			
M81	StanRTA		Preventative Maintenance
M82	StanRTA		Purchase Buses (Expansion)
M83	StanRTA		Support Equipment/Tools
M84	StanRTA		Training/Education
M86	StanRTA		Implement Bus Rapid Transit and Operate Service (Various Locations)

Project ID	Jurisdiction	Location	Description
M87	StanRTA		Rideshare Program
M88	StanRTA		Operation of Fixed Routes
M89	StanRTA		Operation of Paratransit
M90	StanRTA		Upgrade Fareboxes
M91	StanRTA		Short/Long Term Transit and BRT Planning
M92	StanRTA		Purchase Buses (Replacement)
M95	StanRTA		Transit facilities amenities: Bus Stop Shelters/Facilities with amenities & Solar lighting
M96	StanRTA		Install and implement Intelligent Transportation Systems with Traffic (TSP) Traffic Signal Priority in StanRTA's service area
-	StanRTA		Operations and Maintenance Facility Design/Planning/Construction
-	StanRTA		Ceres Mobility Hub Design/Planning/Construction
-	StanRTA		Vintage Faire Mall Transit Hub Design/Planning/Construction
City of Turlock			
T47	Turlock		Various Construction Projects
T49	Turlock	Northern portion of Corporation Yard	Transit Operations Facility (parking, fueling and cleaning facilities for buses and a transit operations support building)
T50	Turlock		Capital Purchases (Busses, Bus Stop and Station Improvements, Support Equipment, etc.)
T51	Turlock		Acquisition of zero emission transit buses and related fueling infrastructure
T53	Turlock		Upgrades to fareboxes, AVL systems, GIS enhancements, computer systems and other technology improvements
T54	Turlock		Operating and Transit Costs
T55	Turlock		Improvements to reduce transit headways
T57	Turlock		Safe Route to Transit (SRTT) non-motorized improvements
T58	Turlock	1418 North Golden State Blvd.	Construct facility improvements at Roger K. Fall Transit Center

Table 2-3 Bicycle/Pedestrian Projects

Project ID	Location	Description
City of Ceres		
C38	Don Pedro Rd to Service Rd	Signage/Striping
C39	Joyce Rd to Whitmore Ave	Signage/Striping, widening
C41	East Gate Blvd. to Faith Home Rd	Hatch Rd TID Bike/Ped Project - Phase IV
C42	Mitchell Rd to Blaker Rd	Signage/Striping
C44	Ceres Main Canal to 6th St	Signage/Striping
C45	Various Locations	Misc. Bike/Pedestrian Facility Projects

Project ID	Location	Description
C47	Mitchell Rd to Esmar Rd	Signage/Striping
C50	Ustick Rd to Mitchell Rd	Bicycle/Pedestrian Facility
C51	Herndon Ave., El Camino Ave. & Eastgate Blvd.	Bike lane facilities
C52	Roeding Rd to Frontage Rd	Class 1 Path. Pave path adjacent to irrigation canal. StanCOG Non- Motorized Transportation Master Plan Project ID: CER-1
C54	5th Street (Whitmore Ave to Magnolia St) and 5th Street (Magnolia St to Roeding Rd)	Bicycle Boulevard (Class 3) and pedestrian improvements. (Non- Motorized Transportation Plan Top 25: Route 14)
C55	El Camino Ave to 6th Street	Class 2 Bicycle Lane. Parking removal. StanCOG Non-Motorized Transportation Master Plan Project ID: CER-4
C56	North Central Ave to Park St	Class 2 Bicycle Lane. Lane narrowing. StanCOG Non-Motorized Transportation Master Plan Project ID: CER-5
C57	El Camino Ave to East Whitmore Ave	Class 2 Bicycle Lane. Parking removal. StanCOG Non-Motorized Transportation Master Plan Project ID: CER-6
C58	East Hatch Rd to East Whitmore Ave	Class 4 Separated Bike Lane. Lane narrowing, parking removal (both sides). StanCOG Non-Motorized Transportation Master Plan Project ID: CER-7
C59	Crows Landing Rd to Central Ave	Class 4 Separated Bike Lane. Lane narrowing. StanCOG Non-Motorized Transportation Master Plan Project ID: CER-8A
C60	Ustick Rd to Crows Landing Rd	Class 1 Path. New construction. StanCOG Non-Motorized Transportation Master Plan Project ID: CER-8B
C61	Faith Home Rd to Boothe Rd	Class 1 Path. Paved existing path. StanCOG Non-Motorized Transportation Master Plan Project ID: CER-9
C62	East Hatch Rd to Joyce Ave	Class 4 Separated Bike Lane. New construction, south side of roadway. StanCOG Non-Motorized Transportation Master Plan Project ID: CER-10
C63	Blaker Rd	Class III (Bicycle Route)
C64	Hackett Rd	Class III (Bicycle Route)
C65	Georgeann Pl	Class III (Bicycle Route)
C66	Don Pedro Rd	Class III (Bicycle Route)
C67	Roeding Rd	Class III (Bicycle Route)
C68	Park St	Class III (Bicycle Route)
C69	Rose Ave/Glasgow Dr	Class III (Bicycle Route)
C70	9th St/Moffett Rd	Class III (Bicycle Route)
C71	Garrison St	Class III (Bicycle Route)
C72	Richland Ave	Class IIB (Buffered Bicycle Lane)
C73	Nadine Ave	Class III (Bicycle Route)
C74	Richard Way	Class III (Bicycle Route)
C75	Caswell Ave	Class III (Bicycle Route)

Project ID	Location	Description
City of Hughson		
H09	E of Tully Road to Charles Street	Construction Sidewalk and pedestrian improvements (across railroad tracks)
H10	Various Locations	Construct Bikeway and Pedestrian Improvements (Per Non-Motorized Plan)
H13	Fox Road to Santa Fe Ave	Bicycle Lane (Class 2), Bicycle boulevard (Class 3), and pedestrian improvements. (Non-Motorized Transportation Plan Top 25: Route 20A)
H14	Santa Fe Ave. to Geer Rd	Path (Class I) and pedestrian improvements. (Non-Motorized Transportation Plan Top 25: Route 20B)
H15	East Hatch to 7th St	Class 3.5 Bicycle Route with Wide Shoulders. Widen shoulder to at least 4 feet, wider preferred. StanCOG Non-Motorized Transportation Master Plan Project ID: HU-3
H25	Fox Rd	Class IIB (Buffered Bicycle Lane)
H26	Tully Rd	Class III (Bicycle Route)
H27	Charles St	Class IIB (Buffered Bicycle Lane)
City of Modesto		
M24	Various Locations	Non-Motorized Improvements
M25	Various Locations	Safe Routes to School projects
M26	Semallon Dr to Riverbank	Class I Trail Improvements
M27	Yosemite to Orangeburg	Class I Bike path/Ped Bike Bridge
M28	Woodrow to Pelandale	Bike/Ped facility including overcrossings
M29	Virginia Corridor to Dry Creek	Class IV Bike Path
M30	Kewin to Beardbrook Park	Class I Bike Path Connecting Trails
M31	MID Lateral Nos. 3,4 and 7	Construct Class 1 Trail along MID Lateral Nos. 3, 4 and 7
M31	Carver to Virginia Corridor	Class I Bike Path along MID
M31	Campus Way to Tully Rd	MJC Class I Bike Path Phase 3
M32	Briggsmore to Sylvan	Class I Bike Path along Claus Rd.
M33	Mitchell Rd to Carpenter Rd	Remaining Trail Improvements
M34	Dale Road to Virginia Corridor	Class I bike path
M35	Various Locations	Pedestrian/ADA modifications
M36	Various Locations	Class II Bicycle Improvements (Class II - Signage/Striping, Curb, Gutter & Sidewalk)
M37	Paradise from Sheridan to 1st, S. Jefferson from Paradise to Vine, 1st from Vine to Sierra and G St from Sierra to 2nd	Pedestrian and Bicycle Safety Improvements around Modesto High School
M38	Various Locations	Class II Bicycle Improvements(Class II - Signage/Striping, Curb, Gutter & Sidewalk)
M41	Carpenter Road to J Street	Complete Streets/Bike Trail Improvements
M42	Various Locations	Rectangular Rapid Flashing Beacons
M129	Carver Rd	Class III (Bicycle Route)
M130	Pelandale Ave	Class IV (Cycle Track)
M131	Dale Rd	Class IV (Cycle Track)

Project ID	Location	Description
M132	Standiford Ave	Class II (Bicycle Lane)
M133	Standiford Ave	Class IIB (Buffered Bicycle Lane)
M134	Sisk Rd	Class I (Multi-Use Path)
M135	Carpenter Rd	Class IIB (Buffered Bicycle Lane)
M136	Carpenter Rd	Class IIB (Buffered Bicycle Lane)
M137	Rosemore Ave	Class III (Bicycle Route)
M138	Shaddox Ave	Class III (Bicycle Route)
M139	Woodland Ave	Class III (Bicycle Route)
M140	Granite Ln	Class IIB (Buffered Bicycle Lane)
M141	Woodland Ave	Class IIB (Buffered Bicycle Lane)
M142	Emerald Ave	Class IIB (Buffered Bicycle Lane)
M143	Martin Luther King Dr/Sutter Ave	Class III (Bicycle Route)
M144	New Path to Tuolumne River	Class I (Multi-Use Path)
M145	Merle Ave	Class III (Bicycle Route)
M146	Highway 108	Class IIB (Buffered Bicycle Lane)
M147	Claratina Ave	Class I (Multi-Use Path)
M148	Oakdale Rd	Class I (Multi-Use Path)
M149	Sylvan Ave	Class I (Multi-Use Path)
M150	Coffee Rd	Class IIB (Buffered Bicycle Lane)
M151	Oakdale Rd	Class IIB (Buffered Bicycle Lane)
M152	Lifescapes Dr/Grecian Ave/Dragoo Park Dr/Claremont Ave	Class III (Bicycle Route)
M153	Sheffield Ln/Sunrise Ave/Bodem St	Class III (Bicycle Route)
M154	Morris Ave	Class III (Bicycle Route)
M155	Johnson St	Class III (Bicycle Route)
M156	Coffee Rd	Class IV (Cycle Track)
M157	Brighton Ave	Class III (Bicycle Route)
M158	Locke Rd	Class III (Bicycle Route)
M159	Wylie Dr	Class III (Bicycle Route)
M160	Oakdale Rd	Class IIB (Buffered Bicycle Lane)
M161	Briggsmore Ave	Class I (Multi-Use Path)
M162	Briggsmore Ave	Class IV (Cycle Track)
M163	Claus Rd	Class IV (Cycle Track)
M164	Encina Ave/Riverside Dr/El Pasado Dr/Capistrano Dr/Penny Ln	Class I (Multi-Use Path)
M165	14th St	Class IIB (Buffered Bicycle Lane)
M166	12th St	Class IV (Cycle Track)
M167	9th St	Class IV (Cycle Track)
M168	D St	Class IV (Cycle Track)
M169	B St	Class IV (Cycle Track)
M170	7th St/Crows Landing Rd	Class II (Bicycle Lane)

Project ID	Location	Description
M171	H St	Class IIB (Buffered Bicycle Lane)
M172	2nd St	Class III (Bicycle Route)
M173	I St	Class I (Multi-Use Path)
M174	Downey Ave/19th St/La Loma Ave/Rue de Yoe/James St	Class I (Multi-Use Path)
M175	Morton Blvd	Class I (Multi-Use Path)
M176	Hatch Rd	Class IV (Cycle Track)
City of Newman		
N28	Various Locations	Bicycle and Pedestrian Improvements
N29	Canal School Road/Hills Ferry From Driskell to City LID Project	Class I Multiuse Path
N30	Intersections of SR33 and Kern St	Install bicycle detector loops
N31	Intersection of SR33 and Merced St	Install bicycle detector loops
N32	Intersections of SR33 and Inyo Ave	Install bicycle detector loops
N33	At City Parks	Bike Parking facilities at City Parks
N34	At City Schools	Bike Parking facilities at City Schools
N35	At Jensen Road and N Street Along Sherman Parkway At Orestimba Road and T Street At Inyo Avenue and Upper Road At Inyo Avenue and T Street At Inyo Avenue and P Street/Prince Street At Merced Street and Barrington Avenue At Hills Ferry Road and Canal School Road	Install bicycle crossing warning signs at unsignalized intersections
N36	Merced St at Railroad	Pedestrian RR Crossing Improvements
N37	Sherman Pkwy at Railroad	Pedestrian RR Crossing Improvements
N38	Driskell Ave at Railroad	Pedestrian RR Crossing Improvements
N39	T Street from Inyo Ave to Orestimba High School	Class I Multiuse Path, pedestrian and bicycle improvements
N40	SR33 to Hardin	Class I Multiuse Path, pedestrian and bicycle improvements
N41	Various Locations	Construct Bicycle Parking Facilities and Bus Shelters (Figure 4-4 in Non-motorized Transportation Plan)
N42	Merced St to Sherman Parkway	Bicycle and Pedestrian Improvements
N43	Yolo St to Jensen Rd	Bicycle and Pedestrian Improvements
N44	Yolo St to Jensen Rd	Bicycle and Pedestrian Improvements
N45	Yolo St to Merced St	Buffered Bicycle Lane (Class 2) and pedestrian improvements. (Non-Motorized Transportation Plan Top 25: Route 18)
N46	S St to Q St	Class 2 Bicycle Lane. Lane narrowing. StanCOG Non-Motorized Transportation Master Plan Project ID: NEW-2
N47	Jensen Rd to Merced County Line	Class 2 Bicycle Lane. Lane narrowing, widen shoulder to at least 4'. StanCOG Non-Motorized Transportation Master Plan Project ID: NEW-3

Project ID	Location	Description
City of Oakdale		
O17	South of Kerr Park to A Street	Construct Class I Bike Lane to connect to the D Street multi use trail.
O18	North of Kerr Park to Valley View Park	Construct Class I Bike Lane along Stanislaus River to connect to the existing Valley View Trail.
O19	Various Locations	Install Sidewalks, upgrade ADA-compliant ramps, install and/or enhance crosswalks
O20	Various Locations	Pedestrian/Bicycle Infrastructure Improvements
O21	F Street (SR-108) to Oakdale City Limits North of Pontiac St	Bicycle Boulevard (Class 3) and pedestrian improvements. (Non- Motorized Transportation Plan Top 25: Route 16A)
O22	Yosemite Ave to Crane Rd	Separated Bicycle Lane (Class 4) and pedestrian improvements. (Non-Motorized Transportation Plan Top 25: Route 16B)
O23	North Yosemite Ave to Stanislaus River Trail (Proposed)	Class 4 Separated Bike Lane. Lane removal. StanCOG Non-Motorized Transportation Master Plan Project ID: OAK-3
O32	4th Avenue to East Avenue	Asphalt repairs, sidewalk infill, bike lane striping
O36	6th Ave	Class IIB (Buffered Bicycle Lane)
O37	G St	Class IIB (Buffered Bicycle Lane)
O38	Yosemite Ave	Class III (Bicycle Route)
O39	Wood Ave	Class IIB (Buffered Bicycle Lane)
O40	F St	Class IIB (Buffered Bicycle Lane)
O41	Lee Ave	Class III (Bicycle Route)
O42	Willowood Dr	Class III (Bicycle Route)
O43	Pontiac St	Class III (Bicycle Route)
City of Patterson		
P19	Various Locations	Roadway Rehabilitation and complete street improvements.
P20	Various Locations	Construct & Rehabilitate Class I and Class II bike lanes
P21	Bartch Ave to Eucalyptus Ave	Class 3.5 Bicycle Route with Wide Shoulders. Widen shoulder to at least 4 feet, wider preferred. StanCOG Non-Motorized Transportation Master Plan Project ID: PAT-1
P22	Ward Ave to South 2nd St	Class 2 Bicycle Lane. Lane narrowing. StanCOG Non-Motorized Transportation Master Plan Project ID: PAT-1
P23	Ward Ave to South 2nd St	Bicycle Lane (Class 2) and pedestrian improvements. (Non-Motorized Transportation Plan Top 25: Route 17A)
P24	N St to Sperry Ave	Multi-Use Path (Class 1), Bicycle Lane (Class 2), Separated Bike Lane (Class 4) and pedestrian improvements. (Non-Motorized Transportation Plan Top 25: Route 17B)
P26	Ward Avenue to Cliff Swallow Drive	Underground Patterson Irrigation District Canal to create mulit-use path near Patterson HS (ATP Master Plan Bike ID #41 & TIMP 2020)
P27	Cliff Swallow Drive to Highway 33	Underground Salado Creek to create mulit-use trail from Cliff Swallow Drive to Highway 33, connect El Solyo Village (ATP Matser Plan ID Bike #13 & Ped ID #6)
P28	Sperry Ave	Class I (Multi-Use Path)

Project ID	Location	Description
P29	Kestrel Dr	Class III (Bicycle Route)
City of Riverbank		
R18	Various Locations	Pedestrian/Bicycle Infrastructure Improvements
R19	Various Locations	ADA/Sidewalk Improvements
R20	Various Locations	School Traffic Safety Project
R21	Hetch Hetchy Trail	Install trail system improvements
R22	Jacob Myer Park Bridge	Install trail system bridge
R23	Various Locations	Rails with Trails
R24	Bicycle/Pedestrian/Traffic Management Improvements	Install Bicycle & Pedestrian infrastructure improvements
R25	Roselle Avenue Patterson to Pocket	Sidewalk & ADA Improvements, Drainage and ROW
R27	Pedestrian Access over MID Canal	Installation of Sidewalk over MID Canal
R28	Terminal to Claus Road	Bicycle/Pedestrian Path along BNSF Railroad
R29	Westgate Road to Sylvan Avenue	Bicycle/Pedestrian Path w/ ADA
R31	1st St to Patterson Rd	Class 4 Separated Bike Lane. Pave shoulder, lane removal, or lane narrowing. StanCOG Non-Motorized Transportation Master Plan Project ID: RB-2
R36	Santa Fe St to Kentucky Ave (Santa Fe Ave changed to St)	Buffered Bicycle Lane (Class 2) and Bicycle Route with wide Shoulders (Class 3.5) and pedestrian improvements. (Non-Motorized Transportation Plan Top 25: Route 23)
R43	8th St	Class III (Bicycle Route)
R44	8th St	Class IIB (Buffered Bicycle Lane)
R45	Townsend Ave	Class IIB (Buffered Bicycle Lane)
R46	California Ave	Class IIB (Buffered Bicycle Lane)
R47	Terminal Ave	Class IIB (Buffered Bicycle Lane)
R48	Patterson Rd	Class IV (Cycle Track)
R49	Callander Ave	Class IIB (Buffered Bicycle Lane)
R50	Sierra St	Class IIB (Buffered Bicycle Lane)
R51	Railroad Ave	Class IIB (Buffered Bicycle Lane)
R52	Roselle Ave	Class IV (Cycle Track)
R53	Morrill Rd	Class IIB (Buffered Bicycle Lane)
R54	Homewood Way	Class III (Bicycle Route)
R55	MID Main Canal Path	Class I (Multi-Use Path)
Stanislaus County		
S137	East Ave. to City Limit	Shoulders Widening - Class 2 Bikepath
S138	Keyes Rd to SR132	Shoulder Widening - Class 2 Bikepath
S139	Hammett Rd to SR-219/Sisk inc. MCS	Shoulder Widening - Class 2 Bikepath
S140	Santa Fe to Patterson Rd.	Shoulder Widening - Class 2 Bikepath
S141	Claratina Ave to Ladd Rd	Shoulder Widening - Class 2 Bikepath
S142	Daubenberger to Hickman	Shoulder Widening - Class 2 Bikepath
S143	SR-33 to Carpenter Road	Shoulder Widening - Class 2 Bikepath

Project ID	Location	Description
S144	Sycamore to Washington	Shoulder Widening - Class 2 Bikepath
S149	Various Locations	Construct Bicycle and Pedestrian Improvements (Class I Bikeways/Sidewalk, etc.)
S150	North Yosemite Ave to 1st St	Class 1 Path. New Construction. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-1A
S151	North Yosemite Ave (Proposed) to Orange Blossom Rd	Class 1 Path. New Construction. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-1B
S152	630 ft NE of Stanislaus River Court/Stanislaus River Drive to Sonora Rd	Class 1 Path. New Construction. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-1C
S153	270 ft E of Brady Rd/CA 108 to 8th St	Class 3.5 Bicycle Route with Wide Shoulders. Parking removal (both sides). StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-2
S154	SR-108 to Riverbank City Limits (Near Oakdale Rd)	Multi-Use Path (Class 1) and pedestrian improvements. (Non- Motorized Transportation Plan Top 25: Route 22)
S155	Virginia Corridor Bike Path to Terminal Ave	Class 1 Path. New Construction. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-4
S157	Hetch Hetchy Canal (Proposed) to Kiernan Ave	Class 4 Separated Bike Lane. Parking removal (both sides). StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-5B
S158	Van Dusen Ave to Claribel Rd	Class 3.5 Bicycle Route with Wide Shoulders. Widen shoulder to at least 4 feet, wider preferred. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-6
S159	Claus Rd to Terminal Ave (Proposed)	Class 1 Path. New Construction. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-7
S160	Bartch Ave to 70 ft N of CA 33/East Stuhr Rd/West Stuhr Rd	Class 3.5 Bicycle Route with Wide Shoulders. Widen shoulder to at least 4 feet, wider preferred. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-8
S162	Howard Rd to Eucalyptus Ave	Class 3.5 Bicycle Route with Wide Shoulders. Widen shoulder to at least 4 feet, wider preferred. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-10
S163	Shiloh Rd to River Rd	Class 1 Path. Widen shoulder to at least 4', bridge construction. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-11
S164	West Grayson Rd to Paradise Rd	Class 3.5 Bicycle Route with Wide Shoulders. Widen shoulder to at least 4', wider preferred. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-12
S165	Shiloh Rd to South Carpenter Rd	Class 3.5 Bicycle Route with Wide Shoulders. Widen shoulder to at least 4', wider preferred. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-13
S166	East Taylor Rd to 7th St	Class 3.5 Bicycle Route with Wide Shoulders. Widen shoulder to at least 4', wider preferred. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-14
S167	Faith Home Rd to Santa Fe Rd	Class 1 Path. Pave existing path along canal. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-15
S168	180 ft E of Lucas Rd/Mitchell Rd to North Golden State Blvd	Class 1 Path. New Construction. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-16
S169	Hickman Rd to Mitchell Rd	Class 1 Path. New Construction. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-17

Project ID	Location	Description
S170	Oakdale-Waterford Highway to Claus Rd	Class 1 Path. New Construction. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-18
S171	Lateral Number Two Path (Proposed) to 1180 ft E of East Hatch Rd/Euclid Ave	Class 3.5 Bicycle Route with Wide Shoulders. Widen shoulder to at least 4', wider preferred. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-19
S172	Moore Rd to W. Christofferson Pkwy	Bicycle Lane (Class 2), Buffered Bicycle Lane (Class 2), Bicycle Route with wide shoulders (Class 3.5), Separated Bike lane (Class 4), and pedestrian improvements. (Non-Motorized Transportation Plan Top 25: Route 25)
S173	Yosemite Blvd to East Hatch Rd	Class 4 Separated Bike Lane. Lane narrowing. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-21
S174	Lateral Number One Trail (Proposed) to Herndon Rd	Class 1 Path. Pave path along irrigation canal, Class 1 bridge over Golden State Highway. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-22
S175	Ustick Rd to W. Hatch Rd	Multi-Use Path (Class 1) and pedestrian improvements. (Non- Motorized Transportation Plan Top 25: Route 7)
S176	Crater Ave to West Whitmore Ave	Class 3 Bicycle Boulevard. Traffic calming, signage, and crossing treatments. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-24
S177	I St to Claus Rd	Class 4 Separated Bike Lane. Lane narrowing, shoulder widening, parking removal. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-25
S178	Leek Rd to I St	Class 3.5 Bicycle Route with Wide Shoulders. Widen shoulder to at least 4', wider preferred. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-26
S179	Sequoia St to Sisk Rd	Class 4 Separated Bike Lane. Lane narrowing in some areas, convert angled to parallel parking (both sides). StanCOG Non- Motorized Transportation Master Plan Project ID: STAN-27
S180	Pelandale Ave to Kiernan Ave	Separated Bicycle Lane (Class 4) and pedestrian improvements. (Non-Motorized Transportation Plan Top 25: Route 21)
S181	River Rd to Joyce Ave	Class 3 Bicycle Boulevard. Wayfinding, traffic calming, crossing improvements. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-29
S182	Herndon Rd to South 9th St	Class 2 Bicycle Lane. Wayfinding, traffic calming, crossing improvements. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-30
S183	Albers Rd to MID Main Canal (Waterford)	Class 3.5 Bicycle Route with Wide Shoulders. Widen shoulder to at least 4', wider preferred, add markings and signage. StanCOG Non- Motorized Transportation Master Plan Project ID: STAN-31
S186	Proposed Canal Path North of Yosemite Blvd to Warnerville Rd	Class 3.5 Bicycle Route with Wide Shoulders. Improve shoulder, add markings. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-34
S187	E F St to E H St	Class 2 Bicycle Lane. Lane removal. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-35

Project ID	Location	Description
S188	Claribel Rd to Sylvan Ave	Class 2 Bicycle Lane. Widen shoulder, add markings. StanCOG Non- Motorized Transportation Master Plan Project ID: STAN-36
S189	Santa Fe Ave to E Hatch Rd	Class 3.5 Bicycle Route with Wide Shoulders. Improve shoulder, add markings. StanCOG Non-Motorized Transportation Master Plan Project ID: STAN-37
S201	Crows Landing Rd	Class IIB (Buffered Bicycle Lane)
S202	Carpenter Rd	Class IV (Cycle Track)
S203	Carpenter Rd	Class IIB (Buffered Bicycle Lane)
S204	Monte Vista Ave	Class IIB (Buffered Bicycle Lane)
S205	River Rd	Class IV (Cycle Track)
S206	Hart Rd	Class IIB (Buffered Bicycle Lane)
S207	Shoemake Ave	Class IIB (Buffered Bicycle Lane)
S208	Finney Rd	Class IIB (Buffered Bicycle Lane)
S209	Blue Gum Ave	Class IIB (Buffered Bicycle Lane)
S210	Dakota Ave	Class IIB (Buffered Bicycle Lane)
S211	Salida Blvd	Class IIB (Buffered Bicycle Lane)
S212	Highway 219	Class IIB (Buffered Bicycle Lane)
S213	Stoddard Rd	Class IIB (Buffered Bicycle Lane)
S214	Pirrone Rd	Class I (Multi-Use Path)
S215	Dale Rd	Class I (Multi-Use Path)
S216	Ladd Rd	Class IIB (Buffered Bicycle Lane)
S217	Saint John Rd	Class IIB (Buffered Bicycle Lane)
S218	Country Club Dr/Hillcrest Dr/Thunderbird Dr	Class III (Bicycle Route)
S219	Carver Rd	Class IIB (Buffered Bicycle Lane)
S220	Wade Ave	Class III (Bicycle Route)
S221	Rouse Ave	Class III (Bicycle Route)
S222	Stanislaus River Trail Bridge near Kerr Park	Class I (Multi-Use Path)
S223	Stearns Rd	Class II (Bicycle Lane)
S224	Plaza de Oro Dr	Class II (Bicycle Lane)
S225	Stanislaus River Trail Bridge near Kerr Community Park	Class I (Multi-Use Path)
S226	Valley View Dr Path	Class I (Multi-Use Path)
S227	River Rd Path	Class I (Multi-Use Path)
S228	Stanislaus River Trail Path Connection	Class I (Multi-Use Path)
S229	River Rd	Class III (Bicycle Route)
S230	Sawyer Ave/Pleasant Valley Rd/Pioneer Ave	Class III (Bicycle Route)
S231	Lone Tree Rd	Class III (Bicycle Route)
S232	Valley Home Rd	Class III (Bicycle Route)
S233	Wilkins Ave/Cleveland Ave/Lon Dale Rd	Class III (Bicycle Route)

Project ID	Location	Description
S234	Crane Rd	Class III (Bicycle Route)
S235	Claus Rd	Class IV (Cycle Track)
S236	Terminal Ave/Sante Fe Ave	Class IIB (Buffered Bicycle Lane)
S237	Patterson Rd	Class IIB (Buffered Bicycle Lane)
S238	6th St	Class II (Bicycle Lane)
S239	Montpelier Rd	Class II (Bicycle Lane)
S240	Lake Rd	Class II (Bicycle Lane)
S241	Santa Fe Ave	Class IIB (Buffered Bicycle Lane)
S242	Main St	Class IIB (Buffered Bicycle Lane)
S243	Lander Ave	Class IIB (Buffered Bicycle Lane)
S244	Nunes Rd	Class IV (Cycle Track)
S245	Monte Vista Ave	Class IIB (Buffered Bicycle Lane)
S246	Geer Rd	Class IIB (Buffered Bicycle Lane)
S247	Keyes Rd	Class IIB (Buffered Bicycle Lane)
S248	Gratton Rd/Taylor Rd	Class IIB (Buffered Bicycle Lane)
S249	Main St	Class IIB (Buffered Bicycle Lane)
S250	Santa Fe Ave	Class IIB (Buffered Bicycle Lane)
S251	Crowell Rd Path	Class I (Multi-Use Path)
S252	Taylor Rd	Class IIB (Buffered Bicycle Lane)
S253	Walnut Rd	Class IIB (Buffered Bicycle Lane)
S254	Service Rd	Class IIB (Buffered Bicycle Lane)
S255	TID Upper Lateral Number 2 Path	Class I (Multi-Use Path)
S256	Washington Rd	Class IIB (Buffered Bicycle Lane)
S257	Nunes Rd	Class IIB (Buffered Bicycle Lane)
S258	Tully Rd	Class III (Bicycle Route)
S259	Grayson Rd	Class IIB (Buffered Bicycle Lane)
S260	Central Ave	Class IIB (Buffered Bicycle Lane)
S261	Keyes Rd	Class IIB (Buffered Bicycle Lane)
S262	Faith Home Rd	Class IIB (Buffered Bicycle Lane)
S263	Starlite Dr	Class IIB (Buffered Bicycle Lane)
S264	Rhode Rd/7th St	Class IIB (Buffered Bicycle Lane)
S265	Ladd Rd/Patterson Rd	Class IV (Cycle Track)
S266	Roselle Ave	Class I (Multi-Use Path)
S267	Parker Rd	Class IIB (Buffered Bicycle Lane)
S268	Church St	Class IIB (Buffered Bicycle Lane)
S269	2nd St	Class IIB (Buffered Bicycle Lane)
S270	Highway 132	Class IV (Cycle Track)
S271	Carpenter Rd	Class IV (Cycle Track)
S272	Whitmore Ave	Class IIB (Buffered Bicycle Lane)
S273	Whitmore Ave	Class IIB (Buffered Bicycle Lane)

Project ID	Location	Description
S274	Rouse Ave	Class III (Bicycle Route)
S275	Sutter Ave	Class IIB (Buffered Bicycle Lane)
S276	Sutter Ave	Class I (Multi-Use Path)
S277	Sutter Ave/Ustick Rd Bridge	Class I (Multi-Use Path)
S278	Ustick Rd	Class I (Multi-Use Path)
S279	Hackett Rd	Class I (Multi-Use Path)
S280	Glenn Ave	Class III (Bicycle Route)
S281	Morgan Rd	Class IV (Cycle Track)
S282	Service Rd	Class IV (Cycle Track)
S283	Don Pedro Rd/Woodview Dr/Moffett Rd	Class III (Bicycle Route)
S284	River Rd	Class IIB (Buffered Bicycle Lane)
S285	Herndon Rd/Central Ave	Class III (Bicycle Route)
S286	El Camino Ave	Class IIB (Buffered Bicycle Lane)
S287	Central Ave	Class III (Bicycle Route)
S288	Highway 33	Class IIB (Buffered Bicycle Lane)
S289	Highway 33	Class IV (Cycle Track)
S290	Howard Rd	Class IV (Cycle Track)
City of Turlock		
T32	Various Locations	Construct Class I Bike Paths
T33	Various Locations	Construct Class II Bike Lanes and Class III Bike Pathes
T34	Various Locations	ADA/Pedestrian Improvements
T35	Various Locations	Implement bike share program
T36	Various Locations	Curb, Gutter, Sidewalk and Bike/Pedestrian Improvements
T37	N. Berkeley Ave to Countryside Dr.	Separated Bicycle Lane (Class 4) and pedestrian improvements. (Non-Motorized Transportation Plan Top 25: Route 10)
T38	East Christoffersen Parkway to West Taylor Rd	Class 4 Separated Bike Lane. Lane narrowing. StanCOG Non-Motorized Transportation Master Plan Project ID: TUR-3A
T39	N. Golden St. Blvd to E. Christofferson Pkwy	Bicycle Route with wide shoulders (Class 3.5), Separated Bike lane (Class 4), and pedestrian improvements. (Non-Motorized Transportation Plan Top 25: Route 12)
T40	North Berkeley Ave to Countryside Drive	Class 4 Separated Bike Lane. Lane narrowing, lane removal. StanCOG Non-Motorized Transportation Master Plan Project ID: TUR-4
T41	North Golden State Blvd to Lander Ave	Class 3 Bicycle Boulevard. Wayfinding. StanCOG Non-Motorized Transportation Master Plan Project ID: TUR-5
T43	South Soderquist Rd to A St	Class 3 Bicycle Boulevard. Traffic calming, wayfinding, crossing treatments. StanCOG Non-Motorized Transportation Master Plan Project ID: TUR-7A
T44	West Main St to High St	Class 2 Bicycle Lane. Lane narrowing, parking removal (one side). StanCOG Non-Motorized Transportation Master Plan Project ID: TUR-7B
T45	South Kilroy Rd to South Soderquist Rd	Class 4 Separated Bike Lane. Lane removal. StanCOG Non-Motorized Transportation Master Plan Project ID: TUR-8A

Project ID	Location	Description
T46	North Washington Rd to South Kilroy Rd	Class 3.5 Bicycle Route with Wide Shoulders. Widen shoulder to at least 4', wider preferred. StanCOG Non-Motorized Transportation Master Plan Project ID: TUR-8B
T67	Main St	Class III (Bicycle Route)
T68	Berkeley Ave	Class IIB (Buffered Bicycle Lane)
T69	Hawkeye Ave	Class IV (Cycle Track)
T70	Quincy Rd	Class III (Bicycle Route)
T71	Grant St	Class III (Bicycle Route)
T72	Canal Dr	Class IIB (Buffered Bicycle Lane)
T73	Dels Ln	Class IV (Cycle Track)
T74	Crowell Rd	Class III (Bicycle Route)
T75	Chestnut St/Canal Dr	Class IIB (Buffered Bicycle Lane)
T76	Main St	Class IIB (Buffered Bicycle Lane)
T77	Main St	Class III (Bicycle Route)
T78	Crowell Rd	Class IIB (Buffered Bicycle Lane)
City of Waterford		
W12	Main St to Bonnie Brae Ave	Pavement widening (parking lanes on both sides) with curb, gutter & sidewalk infill on both the East and West sides of the road.
W13	Reinway to West City Limits	Pavement widening with curb, gutter & sidewalk infill on the North side of the roadway.
W14	Reinway (from Washington to 620' N), Washington (from Reinway to Pasadena) and Pasadena (from Washington to 500' N)	Pavement widening (8' parking lane) with curb, gutter & sidewalk infill on the East side of Reinway, North side of the Washington, and West side of Pasadena.
W16	Various Locations	Curb, Gutter, Sidewalk and Bike/Pedestrian Improvements
W17	Oakdale-Waterford Highway to Yosemite Blvd	Class 1 Path. New Construction. StanCOG Non-Motorized Transportation Master Plan Project ID: WF-1
W18	Bentley St to F St	Class 3 Bicycle Boulevard. Traffic calming, wayfinding, crossing treatments. StanCOG Non-Motorized Transportation Master Plan Project ID: WF-2
W20	Lateral Number Two Path (Proposed) to Dorsey St	Class 4 Separated Bike Lane. Parking removal (one side), lane narrowing. StanCOG Non-Motorized Transportation Master Plan Project ID: WF-4A
W21	Bentley St to Hickman Rd	Class 4 Separated Bike Lane. Lane narrowing. StanCOG Non-Motorized Transportation Master Plan Project ID: WF-4B
W22	F St to 960 ft S of F St/Hickman Rd/Yosemite Blvd	Class 1 Path. Widen shoulder to at least 4', wider preferred. StanCOG Non-Motorized Transportation Master Plan Project ID: WF-4C
W23	F Street to Tim Bell Rd	Pavement widening with curb, gutter & sidewalk infill on north side of the road.
W24	Bentley Street and MID Main Canal	Bicycle and Pedestrian bridge over MID Main Canal, connecting to existing Class 1
W29	MID Lower Lateral Number 11 Path	Class I (Multi-Use Path)

Table 2-4 Aviation Projects

Project ID	Location	Description
Modesto		
M97	Modesto City-County Airport	Design - Reconstruction of Taxiway C
M98	Modesto City-County Airport	Reconstruction of Taxiway C
M99	Modesto City-County Airport	Design - Reconstruction of Taxiway E
M100	Modesto City-County Airport	Reconstruction of Taxiway E
M101	Modesto City-County Airport	Design - Reconstruction of Taxiway D
M102	Modesto City-County Airport	Reconstruction of Taxiway D
M103	Modesto City-County Airport	Airfield Electrical Improvements
M104	Modesto City-County Airport	Airfield Slurry Seal - Design/Construct
M105	Modesto City-County Airport	Computer Base Airfield Drivers Education Program
M106	Modesto City-County Airport	Construct Entrance Road
M107	Modesto City-County Airport	Construct New Airport Fire Station
M108	Modesto City-County Airport	Construct New Airport Maintenance Shop
M109	Modesto City-County Airport	Construct Terminal Building
M110	Modesto City-County Airport	Engineering & Contingencies
M111	Modesto City-County Airport	Environmental Planning Studies
M112	Modesto City-County Airport	Equipment Replacement
M113	Modesto City-County Airport	Expand Airport Apron
M114	Modesto City-County Airport	Extend RW/TX 500'
M115	Modesto City-County Airport	Land Acquisition - Phase 1
M116	Modesto City-County Airport	Land Acquisition - Phase 2
M117	Modesto City-County Airport	Land Acquisition - Phase 3
M118	Modesto City-County Airport	Masterplan Update
M119	Modesto City-County Airport	Obstruction Removal - Tree Trimming
M120	Modesto City-County Airport	Realign Airport Way
M121	Modesto City-County Airport	Relocate Localizer
M122	Modesto City-County Airport	Relocate Perimeter Road
M123	Modesto City-County Airport	Remove old terminal
M124	Modesto City-County Airport	Replace VASI with PAPI, RW10L/28R
M125	Modesto City-County Airport	Runway 28R Extension - NEPA/CEQA
M126	Modesto City-County Airport	Taxiway E Re-alignment
M127	Modesto City-County Airport	Terminal Complex - NEPA/CEQA
City of Oakdale		
O25	Oakdale Municipal Airport	Runway Safety Area
O27	Oakdale Municipal Airport	Pavement Preservation Construction, Phase III
O28	Oakdale Municipal Airport	Pavement Preservation Construction, Phase IV
O29	Oakdale Municipal Airport	Pavement Preservation Construction, Phase V
O30	Oakdale Municipal Airport	Pavement Preservation Construction, Phase VI
O31	Oakdale Municipal Airport	Pavement Maintenance and Management Plan (PMMP)

Project ID	Location	Description
-	Oakdale Municipal Airport	Runway/Taxi Lighting Upgrade
-	Oakdale Municipal Airport	Taxiway Drainage Improvements
City of Turlock		
T59	Turlock Municipal Airport	Widen Runway 12-30, RSA & Infrastructure Improvements Including Airfield Electrical Upgrades.
T60	Turlock Municipal Airport	Rehabilitate/Reconstruct Apron A1; Relocate Wind Indicator & Segmented Circle (Construction)
T61	Turlock Municipal Airport	Extend Parallel Taxiway "A"; Construct new runway/taxiway connector. (Design Only)
T62	Turlock Municipal Airport	Extend Parallel Taxiway "A"; Construct new runway/taxiway connector. Construction.
T63	Turlock Municipal Airport	Update Airport Master Plan
-	Turlock Municipal Airport	Runway and Taxiway asphalt concrete resurfacing
Stanislaus County		
S190	Crows Landing Industrial Park-Phase 1-A.	Restore Airport to support Industrial Development. The 1,528-acre property is bound by Marshall Road and State Route 33 to the north, Fink Road to the south, Bell Road to the east, and Davis Road to the west.

Table 2-5 Tier 1 Regional Study Projects

Project ID	Jurisdiction	Location	Description
Stanislaus County			
RE21	Stanislaus County	SR 132 to SR 99	Project Initiation and Corridor Study
RE22	Stanislaus County	Turlock City Limits to Interstate 5	Preliminary Engineering 2-6 Lane Expressway on new alignment
RE23	Stanislaus County	Stanislaus County Limits	Project Initiation and Corridor Study

3 Environmental Setting

This section provides a general overview of the environmental setting for the proposed 2026 RTP/SCS. More detailed descriptions of the environmental setting for each environmental issue area can be found in Chapter 4, *Environmental Impact Analysis*.

3.1 Regional Setting

The StanCOG region includes all of Stanislaus County and the incorporated cities therein. Stanislaus County is located in the San Joaquin Valley of California. It is bounded by San Joaquin County to the northwest, Calaveras and Tuolumne Counties to the northeast, Mariposa County to the east, Merced County to the southeast, Santa Clara County to the southwest, and Alameda County to the west. The geographic center of the county is about 80 miles east of San Francisco and 75 miles south of Sacramento.

The majority of Stanislaus County is located on the San Joaquin Valley floor and has an elevation of approximately 100 feet above sea level. To the west of Interstate 5 (I-5), the Valley floor gives way to the foothills and mountains of the Coast Range. In the eastern part of the County, as the landscape approaches the foothills of the Sierra Nevada Mountains, elevations gradually increase to 150 feet above sea level and higher.

Although the StanCOG region is primarily rural and agricultural, it is home to nine incorporated cities. The three most populous cities (Modesto, Turlock, and Ceres) are located along the State Route (SR) 99 corridor, which runs on a northwest axis through the center of the County, with Modesto as the County seat. Together, these cities account for approximately 61 percent of the County's population. Modesto is the largest city accounting for approximately 40 percent of the county's population (California Department of Finance [DOF] 2025). The cities of Newman and Patterson are located on the western side of the county, along the SR 33 corridor and in proximity to I-5. The cities of Riverbank and Oakdale are located in the northeast part of the County along the Stanislaus River. The City of Waterford is situated along the Tuolumne River on the east side of the Valley. The City of Hughson is located east of Ceres.

3.2 Regional Transportation System

3.2.1 Highways and Roadways

The County's regional transportation system consists of state highways, and all levels of roadways, bikeways, several rail lines, and three airports – one with commercial passenger service. Regional transportation within the San Joaquin Valley depends heavily on SR 99 and I-5. I-5 is a four-lane freeway that runs along the west side of Stanislaus County and the San Joaquin Valley adjacent to the Coast Ranges. It runs entirely in the unincorporated areas of the County with interchanges providing access to cities and communities in western Stanislaus County, including the cities of Newman and Patterson, and the unincorporated communities of Westley, Grayson, and Crows Landing. SR 99 is a six-lane freeway in Stanislaus County and connects the largest urban areas in the County to other metropolitan areas in the San Joaquin Valley. The three largest cities in the County (Modesto, Turlock, and Ceres) are located in the SR 99 corridor, along with the unincorporated communities of Keyes and Salida.

The principal east-west corridor in the county is SR 132, which runs through Modesto and Waterford. Other important routes that connect urban areas of Stanislaus County include SRs 108, 33 and 99. A number of arterial and major roadways in Stanislaus County are vital for regional travel. These roadways provide connectivity between the incorporated cities and unincorporated communities within the County. Most of these are signed County J-Routes, and include Santa Fe Avenue (County Route J7), Geer/Albers Road (J14), Howard/Grayson Road (J16), Keyes Road (J16), West Main Street/Las Palmas Avenue (J17), Crows Landing Road, and a portion of McHenry Avenue (J6).

3.2.2 Transit and Rail Services

The Stanislaus County region offers local, regional, and intercounty transit services provided by the newly consolidated Stanislaus Regional Transit Authority (StanRTA).It's goal is to provide a more streamlined and integrated transit service connecting all Stanislaus County communities. Additionally, the San Joaquin Regional Transit District provides bus service from Lodi to Ripon, and Merced County Transit Authority's "The Bus" has one fixed-route that connects Turlock with Merced County cities along the SR 99 corridor.

Amtrak provides intercity passenger rail service connecting Stanislaus County to major metropolitan areas in California. Amtrak California's San Joaquin Route (The Gold Runner) travels through Stanislaus County along the BNSF rail line with stations in Modesto and Denair/Turlock (approximately three miles northeast of central Turlock). The Gold Runner route provides scheduled daily service from Stanislaus County to Sacramento, the San Francisco Bay Area, and Bakersfield. Stanislaus County does not have any direct commuter rail service; however, StanRTA connects to the Lathrop/Manteca train station, where the Altamont Commuter Express (ACE) train provides commuter service to the San Joaquin Valley and Livermore, Pleasanton, Fremont and the Santa Clara Valley. ACE provides an alternative means of reaching the Bay Area by offering commuter rail service through the Altamont Pass. ACE currently operates four westbound trains each morning and four returning eastbound trains Monday through Friday between Stockton in San Joaquin County and San Jose and may extend service from Stockton to Modesto and Turlock.

Railroad freight operators in Stanislaus County include the Union Pacific Railroad (UPRR), BNSF Railway, Modesto and Empire Traction Company Railroad, Sierra Railroad, and the Tidewater Southern Railroad, which is a subdivision of the UPRR. The UPRR operates mainline service through Salida, Modesto, Ceres, Keyes, and Turlock. UPRR also operates the California Northern Railroad line, which passes through Westley, Patterson, Crows Landing, and Newman on the west side of the County. The BNSF Railway operates mainline service through Riverbank, Hughson, Empire, and Denair. BNSF Railway also operates a branch line which connects the mainline at Riverbank with the Sierra Railroad in Oakdale.

The Modesto and Empire Traction Company Railroad Company is a short-line railroad that connects switching operations between the UPRR in Modesto and the BNSF Railway in Empire. The Sierra Railroad operates between Oakdale and Standard, which is near Sonora in Tuolumne County. Union Pacific and BNSF operate freight trains on the Sierra Railroad line approximately three times per week. Passenger trips travel between Oakdale and the eastern Stanislaus County Line and include entertainment-style railroad travel roughly three to five times per week. The Tidewater Southern Railroad is a branch line operation of the UPRR. The line runs generally north-south through Stanislaus County, from the City of Stockton in San Joaquin County to North Modesto, and from the City of Turlock to South Modesto.

3.2.3 Airports

The Modesto City-County Airport is the largest public airport in Stanislaus County, and the only facility in the County with regularly scheduled commercial air passenger service. The airport is located east of SR 99 and south of SR 132 near the Tuolumne River and Mitchell Road in Modesto. The Oakdale Municipal Airport is owned by the City of Oakdale. The 117-acre facility is located three miles southeast of the City of Oakdale off Sierra Road. The airport is a general aviation facility. The Turlock Municipal Airport is located in the northeastern part of Merced County, but it is owned by the City of Turlock, which is located in Stanislaus County.

3.2.4 Active Transportation/Complete Streets

The proposed 2026 RTP/SCS is committing significant investment in the bicycle and pedestrian network for the StanCOG region by enhancing multimodal travel opportunities throughout the County, increasing investment in the countywide transit, bicycle, and pedestrian systems. Availability of viable alternative and active transportation options, including bicycle and pedestrian options, is integral to achieving a successful regional transportation network in the StanCOG region. StanCOG's transportation demand management program, called Dibs makes it easier for residents of Stanislaus County to get around locally and to adjacent counties that includes walking and biking as part of their transportation routine. The Dibs program works directly with commuters, employers, member agencies, and community organizations to promote smart travel options such as carpooling, vanpooling, transit, and biking and walking. Program elements include a comprehensive on-line trip planning tool, community outreach and presentations, vanpool subsidies, Emergency Ride Home, San Joaquin Valley Air Pollution Control District Rule 9410 implementation assistance, and coordination of employer and community events. The StanCOG region's alternative transportation network consists of trails and on-street bicycle routes. Most major streets have sidewalks and partner agencies have developed, or are developing, active transportation plans to identify and close gaps in the active transportation network. In 2013, StanCOG adopted a Non-Motorized Transportation Plan to guide the future development of bicycle and pedestrian facilities in Stanislaus County. In 2021, StanCOG updated the Non-Motorized Transportation Plan to support the development of a regional non-motorized transportation network. In agricultural areas, the County provides adequate striping and paving in accordance with Caltrans and American Association of State Highway and Transportation Officials standards to safely accommodate bicycle travel whenever a roadway is widened and where adequate right-of-way exists. Development standards for jurisdictions within Stanislaus County typically require proposed residential and commercial developments located in the urban areas to construct curb, gutter, and sidewalk improvements along the development's frontage on a public street.

3.3 Mitigation Approach, EIR Baseline, Approach for Direct and Cumulative Analysis

3.3.1 Mitigation Approach

This EIR includes proposed mitigation measures to reduce impacts and identifies agencies for implementation of those mitigation measures. StanCOG as the lead agency has authority to enforce mitigation measures for projects for which they have discretionary authority. However, StanCOG does not have authority to require recommended mitigation measures be implemented by other implementing agencies (e.g., Caltrans, the County, cities, transit agencies, etc.). These agencies are

responsible agencies for this proposed 2026 RTP/SCS EIR but will be lead agencies for future transportation and land use development projects. While StanCOG cannot mandate that sponsoring agencies implement the mitigation measures, ongoing interagency consultation during a project specific environmental review process would ensure that mitigation contained herein is considered and implemented where applicable. It is the responsibility of the lead agency implementing specific proposed 2026 RTP/SCS projects to conduct project–level environmental review consistent with CEQA and where applicable, incorporate mitigation measures provided herein and developed specifically for the project to reduce impacts. Project-specific environmental documents may adjust the mitigation measures identified in this EIR as necessary to respond to site-specific conditions.

3.3.2 EIR Baseline

Under CEQA, the impacts of a proposed project must be evaluated by comparing expected environmental conditions after project implementation to conditions at a point in time referred to as the baseline. *CEQA Guidelines* Section 15125 states that an EIR should describe physical environmental conditions of the project as they exist at the time the Notice of Preparation (NOP) is published, or if no NOP is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.

As the *CEQA Guidelines* Section 15125 states, ordinarily the appropriate baseline will be the actual environmental conditions existing at the time of CEQA analysis, typically when NOP is published. However, the *CEQA Guidelines* also contemplate times when a deviation from the use of the NOP date to establish the baseline is appropriate to present an accurate description of the expected environmental impacts of a proposed project.

This EIR evaluates potential impacts against existing conditions at the time of the release of the NOP (April 2025), where information is available, for issue areas that would not be substantially influenced by future regional growth that would occur with or without implementation of the proposed 2026 RTP/SCS. It was determined that for these issues a comparison to current, existing baseline conditions would provide the most relevant information for the public, responsible agencies, and StanCOG decision makers. For air quality, energy, greenhouse gas emissions, noise, and transportation, this EIR evaluates potential impacts against both (1) a forecast future baseline condition and (2) current, existing baseline conditions, controlling for impacts caused by population growth and other factors that would occur whether or not the RTP/SCS is adopted. . The 2023 baseline is used as the baseline for analysis within this EIR for these technical sections relying on RTP/SCS modeling data that includes consideration of project effects against a forecast no project condition in addition to the current, existing, or modeled 2023 baseline conditions, controlling for impacts caused by population growth and other factors that would occur whether or not the 2049 RTP/SCS is adopted. Whenever this EIR refers to the 2023 baseline year, it refers to the modeled 2023 conditions. Because the modeling data used for developing the RTP and SCS is based on 2023 data, impacts assessed using that data are using 2023 as a baseline to stay consistent with the modeling data. The RTP/SCS is a long-term, approximately 25-year plan that organizes transportation projects and land use patterns to the year 2049. It is important to emphasize that population growth, urbanization, and volume of average daily traffic generated in the StanCOG region will increase by 2049, with or without implementation of the RTP/SCS, as a result of a range of demographic and economic factors independent of policy and land use decisions by StanCOG and its member agencies. Therefore, this Program EIR evaluates potential impacts to air quality,

greenhouse gas emissions, noise, and transportation against both a future baseline and a current baseline standard. All other impacts are assessed based on the current baseline, 2025.

Interim Timeframes

2049 is the horizon year of the proposed 2026 RTP/SCS. While the proposed 2026 RTP/SCS would be implemented gradually over the planning period, this EIR does not analyze interim time frames because the four-year update cycle of the RTP/SCS prepared by StanCOG already requires short-term adjustments to the Plan. The one exception to this approach is in Section 4.8, *Greenhouse Gas Emissions and Climate Change*, which discusses years 2035 and 2050, as well as a comparative baseline of 1990 and 2005, to satisfy statutory requirements and address state goals related to GHG emissions, such as SB 375 (Health & Safety Code, Section 38551(b)). A summary of the scenarios considered in the GHG analysis is provided in Section 4.8.2 in Section 4.8, *Greenhouse Gas Emissions and Climate Change.*

3.3.3 Approach for Direct Impact Analysis

The programmatic nature of the proposed 2026 RTP/SCS necessitates a general approach to the evaluation of existing conditions and impacts associated with the project. As a program document, this EIR presents a regionwide assessment of the impacts of the proposed 2026 RTP/SCS. These impacts are examined for both transportation network improvements and the regional growth and land use changes forecasted. Because the EIR is a long-term document intended to guide actions over 20 years into the future, program-level and qualitative evaluation is involved. Quantitative analyses are provided where applicable with available information. During future stages in planning and implementation of specific projects envisioned by the proposed 2026 RTP/SCS, including land development resulting from regional growth and transportation improvements identified in the proposed 2026 RTP/SCS, project-specific CEQA documents would be prepared by the appropriate project implementation agency.

3.3.4 Approach for Cumulative Analysis

CEQA defines cumulative impacts as “two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impacts.” Section 15130 of the *CEQA Guidelines* requires that an EIR evaluate environmental impacts that are individually limited but cumulatively considerable. These impacts can result from the proposed project alone, or together with other projects. The *CEQA Guidelines* state: “The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present and reasonably foreseeable probable future projects” (*CEQA Guidelines*, Section 15355). Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

CEQA Guidelines Section 15130 requires a discussion of the cumulative impacts of a project when the project’s incremental contribution to a significant cumulative effect is “cumulatively considerable.” This means that the project’s incremental effects are considerable when viewed in connection with the effects of past, current, and probable future projects. CEQA does not require an analysis of incremental effects that are not cumulatively considerable nor is there a requirement to discuss impacts which do not result in part from the project evaluated in the EIR.

3.3.4.1 Cumulative Impact Methodology

The project integrates transportation investments with land use strategies for an entire region of the state that shares, or is connected by, common economic, social, and environmental characteristics. This Program EIR contains detailed analysis of regional cumulative impacts, which are differentiated from localized impacts that may occur at the city level.

The proposed 2026 RTP/SCS addresses cumulative conditions by design. The proposed 2026 RTP/SCS covers the entire area of Stanislaus County and includes nine cities as well as the unincorporated County. It integrates transportation investments with land use strategies for the County. However, StanCOG and neighboring agencies San Joaquin Council of Governments and the Merced County Association of Governments share, or are connected by, common economic, social and environmental characteristics. As such, the environmental analysis of the proposed 2026 RTP/SCS presented throughout this Draft EIR is a cumulative analysis consistent with CEQA policies. Furthermore, this Draft EIR contains detailed analysis of regional (cumulative) impacts, which are differentiated from localized impacts that may occur at the county level.

When evaluating cumulative impacts, CEQA allows the use of either a list of past, present, and probable future projects, including projects outside the control of the lead agency, or a summary of projections in an adopted planning document, or a combination of the two approaches. Although the RTP/SCS analysis is cumulative by design, additional cumulative analysis has been provided by taking into account future regional growth and development in the surrounding counties combined with the regional growth in the StanCOG region. The cumulative analysis presented below primarily uses a projections-based approach [see State *CEQA Guidelines* Section 15130(B)(1)]. Under the projections-based approach, land use and growth projections for the region, which are the subject of analysis throughout this Program EIR, are combined with the growth and VMT projections for the adjoining counties. Adjoining counties include Merced, San Joaquin, Tuolumne, Calaveras, Alameda, Santa Clara, and Mariposa (described below). The cumulative impact analysis in this Program EIR considers the impacts of planned growth and increased VMT in these adjoining counties.

- **Merced County**. Merced County is located south of the plan area in the San Joaquin Valley. The county spans from coastal ranges to the foothills of the Sierra Nevada and includes six incorporated cities: Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced. Approximately 21,128 acres, or 1.9 percent of the total county land area, lies within these cities (County of Merced 2013).
- **San Joaquin County**. San Joaquin County is located north of the plan area and encompasses nearly 920,000 acres (1,440 square miles) of agricultural lands. The foothills of the Diablo Range define the southwest corner of the County and the foothills of the Sierra Nevada lie along the county's eastern boundary. The County includes 11 incorporated cities, the largest being the City of Stockton located in the center of the County and serves as the County seat (County of San Joaquin 2016).
- **Tuolumne County**. Tuolumne County is located to the northeast of the plan area along the western slope of the Sierra Nevada mountain range. Tuolumne County encompasses 2,274 total square miles and includes diverse terrain and land uses. The County includes one incorporated city, the City of Sonora, which serves as the County seat (County of Tuolumne 2018).
- **Calaveras County**. Calaveras County is located to the northeast of the plan area in California's Sierra Nevada region. The County is made up of small communities, surrounded by agricultural lands, working forests, wildlands, and large expanses of publicly managed forests and recreation

lands. San Andreas is the seat of Calaveras County with Angels Camp being the only incorporated city in the County (County of Calaveras 2019).

- **Mariposa County**. Mariposa County is located southeast of the plan area in the western foothills of the Sierra Nevada mountains. Mariposa is the county seat and there are no incorporated cities. The county has a total area of 1,463 square miles and includes extensive acres of forest lands (including portions of Sierra National Forest and Stanislaus National Forest) as well as recreation lands that are a part of Yosemite National Park (County of Mariposa 2006).
- **Alameda County**. Alameda County is located to the west of the plan area and is a 735 square mile metropolitan county, where the majority of the flatter portions of the County are committed to urban and industrial uses across 14 incorporated cities. The County is located on the east side of the southern portion of the San Francisco Bay and has a diverse combination of land forms ranging from salt water marshes along the bay to moderately high uplands and intermontane valleys (County of Alameda 2014).
- **Santa Clara County**. Santa Clara County is located to the west of the plan area and encompasses 1,300 square miles at the southern end of the San Francisco Bay. The County constitutes about one fourth of the Bay Area's total population and is a major employment center for the region, providing more than a quarter of all jobs in the Bay Area. The northern portion is extensively urbanized, housing approximately 90 percent of the county's residents, and 13 of the County's 15 incorporated cities are located in the Northern Valley. The southern portion is predominantly rural with the exception of the cities of Gilroy and Morgan Hill (County of Santa Clara 1994).

The area that includes Stanislaus County and the above-referenced adjoining counties is referred to in this analysis as the "cumulative impact analysis area." The population for the cumulative impact analysis area is projected to grow from approximately 5.4 million people to 5.9 million by 2049 (DOF 2025). The StanCOG travel demand model accounts for travel in this cumulative region. It has external stations at the end of the model that represents roadway connections on the County's border. At these stations, an average distance is estimated based on travel surveys and other data such as from Big Data on the ultimate destination for the trips crossing the County border using each respective roadway. The model is set up to generate and distribute trips based on a pre-defined number of trips by trip purpose for each external station. Analysis of the cumulative effects of the 2026 RTP/SCS for each environmental issue area is presented at the ends of Sections 4.1 through 4.17.

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4 Environmental Impact Analysis

This section discusses the possible environmental effects of the proposed 2026 RTP/SCS for the specific issue areas that were identified through the scoping process as having the potential to experience significant effects. "Significant effect" is defined by the *CEQA Guidelines* Section 15382 as:

> "…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment, but may be considered in determining whether the physical change is significant."

The assessment of each issue includes a discussion of the setting for that issue and an analysis of the project's impact. Within the impact analysis, the first subsection identifies the methodologies used and the "significance thresholds," which are those criteria that are adopted by StanCOG, its member agencies, or other agencies, are universally recognized, or have been developed specifically for this analysis to determine whether potential effects are significant. The next subsection describes each potential impact of the proposed project, mitigation measures for significant impacts, and the level of significance after mitigation. Each potential effect under consideration for an issue area is separately listed in bold text, with the discussion of the effect and its significance following. Each bolded impact listing also contains a statement of the significance determination for the environmental impact as follows:

- **Significant and Unavoidable.** An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per Section 15093 of the *CEQA Guidelines*.
- **Less than Significant with Mitigation Incorporated.** An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings under Section 15091 of the *CEQA Guidelines*.
- **Less than Significant.** An impact that may be adverse, but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.
- **No Impact.** The proposed project would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Following each environmental impact discussion is a list of mitigation measures and the residual effects or level of significance remaining after implementation of the measure(s). In cases where the mitigation measure for an impact could have an environmental impact in another issue area, this impact is discussed and evaluated as a secondary impact.

The impact analysis concludes with a discussion of cumulative effects, which are defined and discussed in detail in Chapter 3, *Environmental Setting*.

EIR Scope, Content, and Format

This EIR includes discussions of environmental impacts related to several topic areas. The analysis of environmental impacts identifies impacts by category: significant and unavoidable, less than significant with mitigation incorporated, less than significant, and no impact. It proposes mitigation measures, where feasible, for identified significant environmental impacts. Environmental topic areas that are addressed in this EIR include:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gases and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Transportation
- Tribal Cultural Resources
- Wildfire

The EIR *Executive Summary* summarizes all impacts and mitigation measures that apply to the proposed Project.

4.1 Aesthetics

This section evaluates the aesthetics and visual resource impacts of the proposed 2026 RTP/SCS.

4.1.1 Setting

a. Environmental Setting

The aesthetic value of an area can be generally defined by the measure of its visual character and quality, combined with the viewer response to the area. Scenic quality can best be described as the overall impression that an individual viewer retains after driving through, walking through, or flying over an area. Viewer response is a combination of viewer exposure and viewer sensitivity. Viewer exposure is a function of the number of viewers, number of views seen, distance of the viewers, and viewing duration. Viewer sensitivity relates to the extent of the public's concern for a particular viewshed.

StanCOG's plan area is predominantly rural, with urban development focused near the center of the County, with more rural areas east, west, and in between the major cities. The specific characteristics that contribute to and define the aesthetic value of the StanCOG region are described below.

Visual Character of the Region

Located in the San Joaquin Valley and one of the most productive farming regions in the world, visual character of the StanCOG region is primarily agricultural. To the west of Interstate 5 (I-5), flat plains transition to gently rolling hillsides and then into mountainous areas that are part of California's Coastal Range. Within the County boundary, sparse development occurs west of I-5 due to the geography and physical terrain of the California Coastal Range. Aerially viewed, agricultural land uses begin east of I-5 and surround the denser urban development in the cities. In the eastern portion of StanCOG region, near the border with Tuolumne County, the landscape gradually transitions to the foothills of the Sierra Nevada Mountains. The region's geography varies substantially from the agriculturally dominant San Joaquin Valley towards the sierras and western mountains. Elevations range from approximately 100 feet above sea level across the Valley to more than 3,800 feet above sea level at Mount Stakes on the western border with Santa Clara County.

The three main rivers in the StanCOG region occupy meandering, shallow channels on the floor of the San Joaquin Valley. The Tuolumne and Stanislaus Rivers flow west, carrying waters from the Sierra Nevada Mountains to the confluence with the San Joaquin River which flows north and west to the Sacramento-San Joaquin River Delta.

The StanCOG region is largely rural and agricultural in character. The City of Modesto is the only city in the County with more than 100,000 residents, with the City of Turlock second, at 72,000 residents (California Department of Finance [DOF] 2025). Major urban areas are concentrated along State Route (SR) 99, with large agricultural areas to the east and west. Similarly, the cities of Modesto and Waterford are located along SR 132. Smaller and more rural communities are located along SR 33, parallel and east of I-5.

Scenic Views/Resources

Scenic resources in the County are primarily comprised of parks, open space areas and agricultural land, as well as rivers, creeks, and riparian habitat.

As mentioned above, the landform of the County and surrounding areas is generally characterized by a flat valley floor that is dominated with agricultural and dairy production. Agricultural land in the region is planted predominantly with orchard and row crops. These fields offer expansive views that extend over the valley floor to the east and Diablo Range to the west (when haze is at a minimum). These landscape views are strongly characteristic of the Central Valley and contribute to the regional identity.

State, regional, and some local parks are scenic resources that provide views of natural vegetation, wildlife and wildlife habitat, or open space areas otherwise less disturbed by anthropologic activities, such as farming. Some of the larger parks in the region include Henry W. Coe State Park, San Joaquin River National Wildlife Refuge, Turlock Lake State Recreation Area, Kerr Park, Woodward Reservoir Park, and Frank Raines Park.

The Sacramento-San Joaquin River Delta (Delta), northwest of the County, is an integral part of the region's visual character. Connected to the Delta are many rivers, creeks, sloughs, and bays that strongly influence local land use patterns. Many of these rivers, creeks, and sloughs are scenic resources in the County, including the San Joaquin River, Stanislaus River, Tuolumne River, Martells Creek, Duck Creek, and the Delta-Mendota Canal, as well as smaller irrigation ditches and sloughs. Additionally, there are numerous lakes in the County that are scenic resources, such as Turlock Lake and Modesto Reservoir. The riparian vegetation associated with these waterbodies is also considered a scenic resource in the County.

Affected viewers in the County include residential, recreational, industrial, institutional, and commercial viewers and viewers on local freeways, highways, and smaller arterials. Viewer sensitivity would range from low to high depending on location in the landscape relative to the specific project, and presence or absence of various viewer groups.

Scenic Highways and Roadways

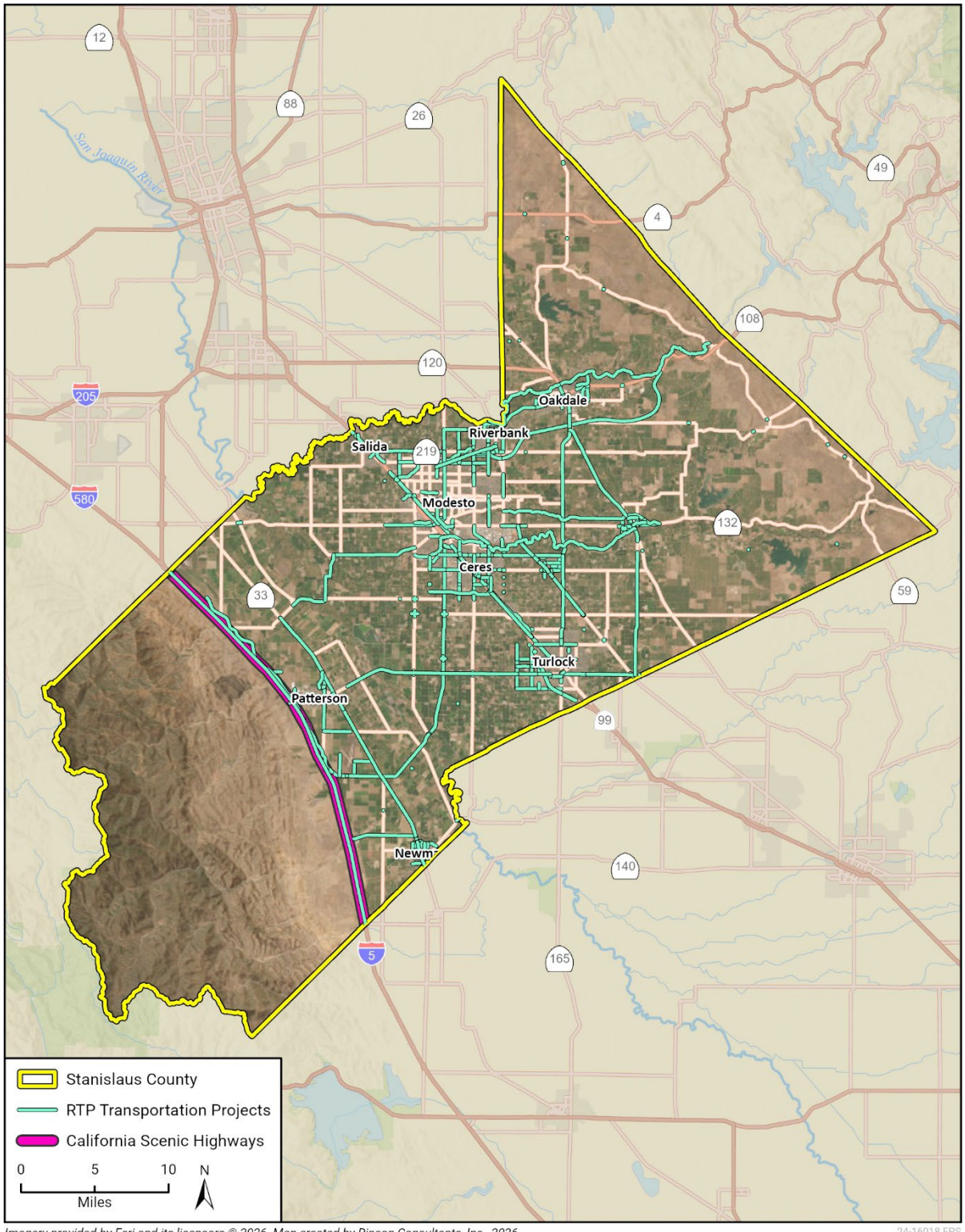
The State has designated I-5 as a scenic highway across Stanislaus County from the Merced County line to the San Joaquin County line (California Department of Transportation [Caltrans] 2021). This is the only State-designated route in the StanCOG region. When traveling on I-5, views consist of open agricultural fields to the east and rolling hills to the west.

In addition to State designated I-5, the following roadways are locally designated as scenic routes:

- SR 108 between the cities of Riverbank and Oakdale (City of Riverbank 2009)
- SR 132 within the city limits of Waterford (City of Waterford 2006)
- Tim Bell Road from the Modesto Irrigation District Main Canal to its intersection with Hazeldine Road (City of Waterford 2006)
- Oakdale/Waterford Highway, from Tuolumne River to Dry Creek (City of Waterford 2006)

No other State highways within the StanCOG region are in the State's master plan of highways eligible for designation as scenic highways (Caltrans 2019). The aforementioned scenic highways and roadways are shown in Figure 4.1-1, along with the location of the transportation projects included in the proposed 2026 RTP/SCS.

Figure 4.1-1 RTP/SCS Projects and StanCOG Region Scenic Highways/Routes



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24-16018 EPS
RTP SCS Projects and Stan COG Region Scenic Highways

Wild and Scenic Rivers

Federal agencies have jurisdiction, under the Wild and Scenic Rivers Act, to designate rivers or river sections to "be preserved in free-flowing condition and protected for the benefit and enjoyment of present and future generations." Currently, no rivers in the StanCOG region are designated under the National Wild and Scenic Rivers System (Wild and Scenic Rivers Council n.d.).

4.1.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

Federal Land Policy and Management Act

The Federal Land Policy and Management Act was established to authorize the Bureau of Land Management to own and manage public lands across the United States. Several lands near La Grange on the eastern side of Stanislaus County are managed by the Bureau of Land Management (BLM) through the Federal Land Policy and Management Act.

National Trails System Act

The National Trails System Act was established to create a national system of recreation, scenic, and historic trails. This act establishes four classes of trails: national scenic trails, national historic trails, national recreation trails, and side and connecting trails. Under this law, national historic trails recognize original trails or routes of travel of national historic significance.

U.S. Department of Transportation Act, Section 4(f)

Section 4(f) of the Department of Transportation Act (DOT Act) of 1966 (49 United States Code Section 303) was enacted to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites. Section 4(f) requires a comprehensive evaluation of all environmental impacts resulting from federal-aid transportation projects administered by the FHWA, Federal Transit Administration (FTA), and Federal Aviation Administration (FAA) that involve the use, or interference with use, of the following types of land:

- Public park lands;
- Recreation areas;
- Wildlife and waterfowl refuges; and
- Publicly- or privately-owned historic properties of federal, state, or local significance.

This evaluation, called the Section 4(f) statement, must be sufficiently detailed to permit the U.S. Secretary of Transportation to determine that:

- There is no feasible and prudent alternative to the use of such land;
- The program includes all possible planning to minimize harm to any park, recreation area, wildlife and waterfowl refuge, or historic site that would result from the use of such lands; or
- If there is a feasible and prudent alternative, a proposed project using Section 4(f) lands cannot be approved the by Secretary; or if there is no feasible and prudent alternative, the proposed project must include all possible planning to minimize harm to the affected lands.

Detailed inventories of the locations and likely impacts on resources that fall into the Section 4(f) category are required in project level environmental assessments.

In August 2005, Section 4(f) was amended to simplify the process for approval or projects that have only minimal impacts on lands affected by Section 4(f). Under the new provisions, the U.S. Secretary of Transportation may find such a minimal impact if consultation with the State Historic Preservation Officer (SHPO) results in a determination that a transportation project will have no adverse effect on the historic site or that there will be no historic properties affected by the proposed action. In this instance, analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete.

b. State Laws, Regulations, and Policies

California Scenic Highway Program

Recognizing the value of scenic areas and view from roads in such areas, the State Legislature established the California Scenic Highway Program in 1963 (Streets and Highways Code Sections 260 et seq). This legislation preserves and protects scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. The goal of the Scenic Highway Program is to preserve and enhance the natural beauty of California. Under this program, a number of State Routes have been designated as eligible for inclusion as scenic routes. Once the local jurisdiction through which the roadway passes have established a corridor protection program and the Departmental Transportation Advisory Committee recommends designation of the roadway, the State may officially designate roadways as scenic routes. Interstate highways, State Routes and county roads may be designated as scenic under the program. The Master Plan of State Highways Eligible for Official Scenic Highway Designation maps designated highway segments, as well as those that are eligible for designation. Changes to the map require an act of the State Legislature.

As noted, a corridor protection program must be adopted by the local governments with land use jurisdiction over the area through which the roadway passes as the first step in moving a road from “eligible” to “designated” status. Each designated corridor is monitored by the State and designation may be revoked if a local government fails to enforce the provisions of the corridor protection program. While there are no restrictions on scenic highway projects, local agencies and Caltrans must coordinate on transportation and development projects and ensure the protection of the corridor’s scenic value to the greatest extent possible, including undergrounding all visible electric distribution and communication utilities within 1,000 feet of a Scenic Highway. In some cases, local governments have their own land use and site planning regulations in place to protect scenic values along a designated corridor. At a minimum, each corridor protection program must include:

- Regulation of land use and density of development;,
- Detailed land and site planning;
- Control of outdoor advertising devices;
- Control of earthmoving and landscaping; and
- Regulation of the design and appearance of structures and equipment.

The Master Plan of State Highways Eligible for Official Scenic Highway Designation requires that proposed realignments and route improvements be evaluated for their impact on the scenic

qualities of the corridor. The designated or eligible State Scenic Highways in the plan area can be seen in Figure 4.1-1.

California Building Energy Efficiency Standards

California Code of Regulations Title 24, Part 6 contains California's Energy Efficiency Standards for Residential and Non-residential Buildings. California Building Energy Efficiency Standards were established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. The 2025 Energy Code contains standards to reduce energy consumption for outdoor lighting application in residential and non-residential developments, which can reduce light and glare from lighting in new development.

Caltrans Adopt-a-Highway Program

To improve and maintain the visual quality of California highways, Caltrans administers the Adopt-a-Highway program, which was established in 1989. The program provides an avenue for individuals, organizations, or businesses to help maintain sections of roadside within California's State Highway System. Groups have the option to participate as volunteers or to hire a maintenance service provider to perform the work on their behalf. Adoptions usually span a two-mile stretch of roadside, and permits are issued for five-year periods. Since 1989, more than 120,000 California residents have kept 15,000 shoulder miles of state roadways clean by engaging in litter removal, tree and flower planting, graffiti removal and vegetation removal.

c. Local Laws, Regulations, and Policies

Stanislaus County General Plan

The Stanislaus County General Plan, Conservation/Open Space Element (Chapter 3) includes visual goals and policies in an effort to preserve the visual characteristics of the County. Relevant goals and policies to the proposed 2026 RTP/SCS EIR include the following (Stanislaus County 2015):

Goal 1: Encourage the protection and preservation of natural and scenic areas throughout the County.

Policy 2: Assure compatibility between natural areas and development.

Implementation Measure 5: Consider adoption of scenic corridors to protect and preserve natural scenic vistas located throughout the County.

City of Ceres General Plan

The City of Ceres' Agriculture and Natural Resources Element of the General Plan 2035 includes goals and policies that are intended to preserve open space, protect agricultural lands, and conserve natural and scenic resources throughout the community. These policies promote the protection of visual resources and the maintenance of open space buffers, while guiding development to be compatible with the City's rural character and surrounding landscapes (City of Ceres 2018). The General Plan also serves as the City's policy framework for land use and development decisions, balancing growth with the conservation of open space resources and the enhancement of community character.

City of Modesto General Plan

The City of Modesto's Environmental Resources, Open Space, and Conservation Element of the General Plan includes policies to protect views of natural landscapes, protect views for travelers along the County's roads and highways, and plan development to protect the scenic qualities of natural landscapes (City of Modesto 2019). The City's General Plan Community Development Policies also provide a framework to guide future land use decisions and development in Modesto, while also enhancing community character.

City of Turlock General Plan

The City of Turlock's Conservation Element and City Design Element of the General Plan include policies to protect visual character, attractiveness, and integrity, for both the natural and built environment (City of Turlock 2012). The City's General Plan Land Use and Economic Development Element also provides a framework to guide future land use decisions and development in Turlock, while also maintaining Turlock's small-town character.

Other City General Plans

The general plans and zoning ordinances of the County and cities within the StanCOG region regulate design and the built environment within those communities, while the general plan for the County performs the same function within unincorporated areas. In all cases, the general plans and zoning typically prescribe visual resource policies and, in some cases, require design review of projects. In general, little direction is provided regarding the design of roadways, which are typically subject to adopted Caltrans or local engineering standards related to safety and capacity, rather than aesthetics. Outlined below are the policies for Stanislaus County and major cities within the StanCOG region.

4.1.3 Impact Analysis

a. Methodology and Significance Thresholds

Environmental assessment of a proposed project's impacts to the aesthetic and visual resources of a site begins with identification of the existing visual resources on and off that site, including the site's physical attributes, its relative visibility, and its relative uniqueness. The assessment of aesthetic impacts involves qualitative analysis that is inherently subjective in nature. Different viewers react to viewsheds and aesthetic conditions differently. This evaluation measures the existing visual resource against the proposed action, analyzing the nature of the anticipated change.

It is important to distinguish between public and private views. Private views are those views seen from privately-owned land, including views from private residences, and are typically enjoyed by individuals. Public views are experienced by the collective public. These include views of significant landscape features such as the Coastal Range and the Sierra Nevada foothills, as seen from public viewing space, not privately-owned properties. California Environmental Quality Act (CEQA) (PRC Section21000 et seq.) case law has established that only public views, not private views, need be analyzed under CEQA. For example, in *Association for Protection etc. Values v. City of Ukiah (1991) 2 Cal. App. 4th 720 [3 Cal. Rptr.2d 488]* the court determined that "we must differentiate between adverse impacts upon particular persons and adverse impacts upon the environment of person in general." As recognized by the court in *Topanga Beach Renters Assn. v. Department of General Services (1976) 58 Cal. App.3d 188 [129 Cal. Rptr. 739]*: "[A]ll government activity has some direct or

indirect adverse effect on some persons. The issue is not whether [the project] will adversely affect particular persons but whether [the project] will adversely affect the environment of persons in general." Therefore, for this analysis, only public views will be considered when analyzing the visual impacts of implementing the proposed 2026 RTP/SCS.

Appendix G of the *CEQA Guidelines* identifies the following criteria for determining whether development facilitated by the proposed 2026 RTP/SCS would have a significant impact on visual resources, namely an analysis of whether or not the proposed 2026 RTP/SCS would:

1. Have a substantial adverse effect on a scenic vista;
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
3. In non-urbanized areas, substantially degrade the existing visual character or quality of the site or its surroundings. If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality; and/or
4. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Project Impacts and Mitigation Measures

The following section discusses potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2026 RTP/SCS. Due to the programmatic nature of the proposed 2026 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement projects and future projects under the land use scenario envisioned by the proposed 2026 RTP/SCS could result in the impacts as described in the following section.

Threshold 1:	Would the project have a substantial adverse effect on a scenic vista?
Threshold 2:	Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

IMPACT AES-1 THE PROPOSED TRANSPORTATION PROJECTS AND LAND USE PROJECTS ENVISIONED UNDER THE PROPOSED 2026 RTP/SCS WOULD HAVE A SUBSTANTIAL ADVERSE EFFECT ON SCENIC VISTAS AND SUBSTANTIALLY DAMAGE SCENIC RESOURCES WITHIN HIGHWAYS IDENTIFIED TO HAVE HIGH SCENIC QUALITIES OR DESIGNATED BY THE STATE AS ELIGIBLE SCENIC HIGHWAYS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

The only State-designated scenic route in the StanCOG region is I-5 from the Merced County line to the San Joaquin County line. Construction of the proposed transportation improvements along scenic highways or locally designated scenic routes could potentially create significant, but short-term, visual impacts. As shown in Figure 4.1-1 there are several projects included in the proposed 2026 RTP/SCS that would be located along designated state or local scenic routes throughout the County including I-5. These projects could result in temporary impacts related to blockage of public views by construction equipment and staging areas, disruption of views by temporary signage, and exposure of slopes and removal of vegetation. These effects would be temporary during the construction phase.

In the long-term, implementation of the proposed 2026 RTP/SCS would generally result in modification of existing transportation facilities within existing highway, roadway, or railroad rights-

of-way. Many of the proposed projects are at-grade with the surrounding environment. As such, most of the road and highway improvements are not likely to result in massive obstructions or blockages of surrounding views nor modify or substantially alter existing scenic resources viewed from a scenic vista or identified scenic highway.

With regard to long-term aesthetic impacts to scenic corridors, implementation of the Fink Road interchange project would result in a modification of existing transportation facilities within existing highway and roadway rights-of-way. This project is not likely to result in major additional obstructions or blockages of views of surrounding rural areas. Nevertheless, the proposed Fink Road interchange project may result in moderate intrusions on the aesthetics of the I-5 scenic corridor. By modifying the interchange to accommodate a greater capacity of vehicular traffic, the project could involve construction of a more massive roadway structure which, from the perspective of motorists on I-5 or Fink Road, may partially obstruct views of rural areas to the west. Such impacts would be potentially significant.

The future land use scenario envisioned by the proposed 2026 RTP/SCS is intended to encourage transit-oriented and infill development. This type of development would help to avoid the loss of scenic resources along I-5 and locally designated scenic routes by concentrating development within existing urbanized areas when compared to a future scenario without the proposed 2026 RTP/SCS. However, when compared to existing conditions, this land use scenario would intensify the built environment within existing urban areas through planned infill development. In addition, this land use scenario would concentrate development near transportation corridors, which would further increase the visibility of future infill and transit-oriented development and potentially impact views of background scenic resources.

Changes to both land use patterns and transportation improvements have the potential to change the view of the middle ground or background elements of broad viewsheds through the conversion of open space uses to transportation use and/or urban use, or through the removal of visually important resources (such as trees, rocks, or historic buildings). The proposed 2026 RTP/SCS transportation projects could include features, such as sound walls, substantial grading, or structures (for example bridges, elevated passenger/commercial rail tracks) that could disrupt views.

Changes in land use patterns would introduce a variety of urban uses to existing open space land and increase density in existing urban areas. Changes in land use patterns and individual proposed 2026 RTP/SCS transportation projects could cause intermittent interruption in views to users of the highways, roadways, and rail system. Such changes to views would result in significant impacts. In some cases, impacts to visual resources can be reduced to less than significant levels by avoiding certain high-profile improvements and/or by minimizing alterations, and/or designing new structures so that they do not impede the scenic landscape and/or view.

Not all projects and development included in proposed 2026 RTP/SCS would be infill projects in urbanized areas, and some projects would inevitably be located in rural and other areas in the StanCOG region. Therefore, the proposed 2026 RTP/SCS could result in a substantial adverse effect on a scenic vista or substantially damage scenic resources within an eligible scenic highway or a locally identified scenic highway in rural areas of the StanCOG region. Impacts would be significant.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures. These

mitigation measures have been developed for the proposed 2026 RTP/SCS program where applicable for transportation projects that would potentially degrade views from scenic corridors and/or within a state scenic highway. Stanislaus County and cities in the StanCOG region can and should implement these measures where relevant to land use projects when implementing the proposed 2026 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

AES-1(a) Discouragement of Architectural Features that Block Scenic Views

The implementing agency shall, or can and should, design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Setbacks and acoustical design of adjacent structures shall be preferentially used as mitigation for potential noise impacts arising from increased traffic volumes associated with adjacent land development. The use of sound walls, or any other architectural features that could block views from the scenic highways or other view corridors, shall be discouraged to the extent possible. Where use of sound walls is found to be necessary, walls shall incorporate offsets, accents, and landscaping to prevent monotony. In addition, sound walls shall be complementary in color and texture to surrounding natural features.

IMPLEMENTATION AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. These mitigation measures shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

AES-1(b) Tree Protection and Replacement

The implementing agency for new roadways, extensions, and widenings of existing roadways, trails and facility improvements shall, or can and should, avoid the removal of existing mature trees to the extent possible consistent with adopted local City and County policies as applicable. The implementing agency of a particular 2026 RTP/SCS project shall replace any trees lost at a minimum 2:1 basis and incorporate them into the landscaping design for the roadway when feasible. The implementing agency also shall ensure the continued vitality of replaced trees through periodic maintenance.

IMPLEMENTATION AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. These mitigation measures shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

Significance After Mitigation

Although identified mitigation would help reduce impacts related to state-designated scenic highway corridors and scenic resources, individual transportation infrastructure projects as well as land use development included in proposed 2026 RTP/SCS could still result in obstructions to scenic vistas as seen from public viewing areas. As this EIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable, and these mitigation measures may not be feasible or effective for some projects. Therefore, given the extent of planned land use development and the

potential for site-specific visual obstructions from future land use and transportation projects, impacts related to the obstruction of scenic vistas from public viewing areas and impacts to state-designated scenic highway corridors and scenic resources would be significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.

Threshold 3:	Would the project in non-urbanized areas, substantially degrade the existing visual character or quality of the site or its surroundings. If the project is in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality?

IMPACT AES-2 THE PROPOSED TRANSPORTATION PROJECTS AND LAND USE PATTERNS ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD IN NON-URBANIZED AREAS, SUBSTANTIALLY DEGRADE THE EXISTING VISUAL CHARACTER OR QUALITY OF PUBLIC VIEWS OF THE SITE OR ITS SURROUNDINGS, AND IN AN URBANIZED AREA, WOULD CONFLICT WITH APPLICABLE ZONING AND OTHER REGULATIONS GOVERNING SCENIC QUALITY. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Non-Urbanized Areas

Some of the proposed transportation improvements in the 2026 RTP/SCS would introduce visual features that would alter the existing rural or semi-rural character of the area in which they are proposed. New roadways at the outskirts of urbanized areas in the StanCOG region, or traversing unincorporated areas to connect cities, would intrude into agricultural lands.

The proposed 2026 RTP/SCS would include new road and highway facilities such as new interchanges, new roadways and overcrossings, and road extensions. Most road and highway projects would occur in areas where transportation infrastructure is already a dominant feature of the landscape. Such transportation projects would not likely degrade the existing visual character of the region because transportation infrastructure is already a dominant feature of the landscape in those areas. In less developed areas of the region, adding new transportation infrastructure would add an element of urban character to previously undeveloped lands. New and extended roadways, such as the widening projects in Newman and Riverbank, would alter the character of agricultural areas. This change in character is primarily due to conversion of farmland and introducing paved surfaces. Ancillary features constructed along new or existing roads (such as lighting, bus shelters, and signs) would further contribute to the trend toward a more urban or suburban visual character. Depending on the design and siting of transportation projects, this could be considered a substantial degradation of the visual character or quality of an area.

Urbanized Areas

The proposed 2026 RTP/SCS envisions infill development and development near existing transportation corridors, which are generally located in urbanized areas of cities and unincorporated communities. Infill development can be favorable in terms of visual character, as it occurs in areas already designated for and receiving growth and precludes growth in undeveloped and/or agricultural and rural areas. Infill development, in general, does not significantly change the existing visual character or quality at the regional level, but rather adds to it while preserving the undeveloped character and quality in the agricultural and rural areas.

However, when compared to existing conditions, the proposed 2026 RTP/SCS land use scenario would intensify the built environment within existing urban areas through the implementation of infill and mixed-use development projects, thereby resulting in an overall change in the character of existing urbanized areas to a denser development pattern. In addition, land use projects that do

occur in rural or agricultural areas would introduce urban development to areas that were previously undeveloped. Depending on the design and siting of these projects, the resulting change would degrade the visual character or quality of their surroundings. However, new development facilitated under the proposed 2026 RTP/SCS would be required to comply with applicable zoning standards or acquire an approved zoning amendment.

Projects implemented under the proposed 2026 RTP/SCS would be subject to existing regulations that would help to minimize impacts to visual character. For example, in visually sensitive areas, local land use agencies would apply development standards and guidelines to maintain compatibility with surrounding natural areas, including site coverage, building height and massing, building materials and color, landscaping, and site grading. Nevertheless, even with compliance with these standards, the overall visual effect of planned roadway projects and envisioned land use patterns would contribute to an incremental, and over time, substantial transformation in visual character from rural or semi-rural to more urban or suburban throughout the StanCOG region. Impacts would be potentially significant and unavoidable.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures, along with Mitigation Measures AES-1(a) and AES-1(b), discussed above for Impact AES-1. These mitigation measures have been developed for the proposed 2026 RTP/SCS program where applicable for transportation projects that would potentially degrade views from scenic corridors and/or within a state scenic highway. Stanislaus County and cities in the StanCOG region can and should implement these measures where relevant to land use projects when implementing the proposed 2026 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

AES-2(a) Recontouring for Adjacent Landforms

Where a particular 2026 RTP/SCS project affects adjacent landforms, the local jurisdiction in which the project is located should ensure that recontouring provides a smooth and gradual transition between modified landforms and existing grade. This requirement can be accomplished through the placement of conditions on the project by the implementing agency during the project specific environmental review.

AES-2(b) Landscaping for Landform Variation

The local jurisdiction in which a particular project is located should ensure that associated landscape materials and design enhance landform variation, provide erosion control and blend with the natural setting. This requirement can be accomplished through the placement of conditions on the project by the local jurisdiction during individual environmental review. To ensure compliance with approved landscape plans, the implementing agency should provide a performance security equal to the value of the landscaping/irrigation installation.

AES-2(c) Design Measures for Visual Compatibility

The implementing agency shall, or can and should, require measures that minimize contrasts in scale and massing between the project and surrounding natural forms and developments. Strategies to achieve this include:

- Siting or designing projects to minimize their intrusion into important viewsheds;
- Avoiding large cuts and fills when the visual environment (natural or urban) would be substantially disrupted;
- Ensuring that re-contouring provides a smooth and gradual transition between modified landforms and existing grade;
- Developing transportation systems to be compatible with the surrounding environments (e.g., colors and materials of construction material; scale of improvements);
- Designing and installing landscaping to add natural elements and visual interest to soften hard edges, as well as to restore natural features along corridors where possible after widening, interchange modifications, re-alignment, or construction of ancillary facilities. The implementing agency shall provide a performance security equal to the value of the landscaping/irrigation installation to ensure compliance with landscaping plans; and
- Designing new structures to be compatible in scale, mass, character, and architecture with existing structures.

IMPLEMENTATION AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. These mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

Significance After Mitigation

Implementation of Mitigation Measures AES-2(a) through AES-2(c) would reduce project-specific impacts to the extent feasible. Mitigation Measures AES-1(a) and AES-1(b), discussed above for Impact AES-1, would also reduce impacts associated with visual character. Nevertheless, the alteration of current rural or semi-rural character to a more suburban environment is considered a significant and unavoidable impact because mitigation measures may not be feasible for all projects. Additionally, while these mitigation measures may reduce impacts from urban and infill development, some project-specific impacts may be unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 4:	Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

IMPACT AES-3 DEVELOPMENT OF PROPOSED TRANSPORTATION PROJECTS AND LAND USE PATTERNS ENVISIONED UNDER THE PROPOSED 2026 RTP/SCS WOULD CREATE A NEW SOURCE OF SUBSTANTIAL LIGHT OR GLARE THAT WOULD ADVERSELY AFFECT DAYTIME OR NIGHTTIME VIEWS IN THE AREA. IMPACTS ARE SIGNIFICANT AND UNAVOIDABLE.

New or intensified lighting from land use development envisioned in the proposed 2026 RTP/SCS, which is focused on compact, infill and mixed-use development, would be concentrated in areas with existing sources of light and glare. In these infill areas, such increases may not adversely affect nighttime views because existing sources of light, glare, and shadow are already a dominant feature of the urban landscape. However, the intensity of light and glare in these urban areas could increase as a result of infill and mixed-use projects under the proposed 2026 RTP/SCS, depending on site-specific conditions and lighting design associated with new structures/roadways. Because of the

potential for increased lighting affecting nighttime views, impacts from land use development would be potentially significant.

Improvements to existing roadways and highways would not significantly increase the amount of light and glare in an area, as these improvements would take place on existing facilities that have existing sources of light and glare. Increases in light and glare from new reflective signage, streetlights, intersection control devices and other improvements would be relatively minor compared to existing conditions. However, the expansion and widening of existing roadways or construction of new roadways would allow a greater volume of vehicles to travel through a given segment of roadway or highway throughout the day, or introduce vehicles into a new area, which would have the potential to introduce new or additional vehicle headlights as new light sources. In addition, some of the new transportation facilities included in the proposed 2026 RTP/SCS would directly introduce light, including: replacement and/or improvement of existing lighting at the Modesto Municipal Airport associated with airport expansion, construction of pedestrian lighting along various city streets, and installation of lighting along bike paths in the StanCOG region. The introduction of light and glare could adversely affect day or nighttime views.

Overall, light and glare impacts from transportation improvements and projects envisioned under the proposed 2026 RTP/SCS would be significant because there would be new sources of substantial light or glare.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures for transportation projects that would result in light and glare impacts. Stanislaus County and cities in the StanCOG region can and should implement these measures, where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

AES-3(a) Roadway and Project Lighting

The implementing agency shall, or can and should, minimize roadway lighting to the extent possible, consistent with safety and security objectives, and shall not exceed the minimum height requirements of the local jurisdiction in which the project is proposed. This may be accomplished through the use of back shields, hoods, low intensity lighting, and using as few lights as necessary to achieve the goals of the project.

As part of planning, design, and engineering for projects, project sponsors shall ensure that projects proposed near light-sensitive uses avoid substantial spillover lighting. Potential design measures include, but are not limited to, the following:

- Lighting shall consist of cutoff-type fixtures that cast low-angle illumination to minimize incidental spillover of light into adjacent properties and undeveloped open space. Fixtures that project light upward or horizontally shall not be used.
- Lighting shall be directed away from habitat and open space areas adjacent to the project site.
- Light mountings shall be downcast, and the height of the poles minimized to reduce potential for backscatter into the nighttime sky and incidental spillover of light onto adjacent private properties and undeveloped open space. Light poles will be 20 feet high or shorter. Luminary mountings shall have non-glare finishes.

- Exterior lighting features shall be directed downward and shielded in order to confine light to the boundaries of the subject project. Where more intense lighting is necessary for safety purposes, the design shall include landscaping to block light from sensitive land uses, such as residences.

AES-3(b) Glare Reduction Measures.

The implementing agency shall, or can and should, minimize and control glare from transportation and infill development projects near glare-sensitive uses through the adoption of project design features such as:

- Planting trees along transportation corridors to reduce glare from the sun;
- Creating tree wells in existing sidewalks;
- Adding trees in new curb extensions and traffic circles;
- Adding trees to public parks and greenways;
- Landscaping off-street parking areas, loading areas, and service areas;
- Limiting the use of reflective materials, such as metal;
- Using non-reflective material, such as paint, vegetative screening, matte finish coatings, and masonry;
- Screening parking areas by using vegetation or trees;
- Using low-reflective glass; and
- Complying with applicable general plan policies, municipal code regulations, city or local controls related to glare
- Tree species planted to comply with this measure shall provide substantial shade cover when mature. Utilities shall be installed underground along these routes wherever feasible to allow trees to grow and provide shade without need for severe pruning.

IMPLEMENTATION AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. The mitigation measures shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

Significance After Mitigation

In the absence of regulations specifically addressing light and glare impacts, the aforementioned mitigation measures would limit the use of reflective building materials and the potential spillage of light both upward and onto adjacent properties from exterior lighting fixtures. However, mitigation measures maybe not be feasible for all projects. Therefore, this impact would remain significant and unavoidable.

4.1.4 Cumulative Impacts

The cumulative impact analysis area for visual resources consists of the StanCOG region and adjoining counties (including San Joaquin, Calaveras, Tuolumne, Mariposa, Merced, Santa Clara, and Alameda counties). Information regarding these adjoining counties can be found in Chapter 3, *Environmental Setting, 3.3.4 Approach for Cumulative Analysi*s. Future development in this region

that could impact visual resources is considered in the analysis. This cumulative extent is used to evaluate potential direct and indirect, and permanent and temporary impacts to scenic vistas, scenic resources, and existing visual character within the context of regional diminishment of these resources.

Some types of impacts to aesthetic resources are localized and not cumulative in nature. For example, the creation of glare or shadows at one location is not worsened by glare or shadows created at another location. Rather, these effects are independent and the determination as to whether they are adverse is specific to the project and location where they are created. Projects that block a view or affect the visual quality of a site also result in localized impacts. The impact occurs specific to a site or area and remains independent from another project elsewhere that may block a view or degrade the visual environment of a specific site. However, from some vantage points, such as mountain ridges or open valley floors, the viewshed can span for miles. Because development may be seen from distances or into the distance from some locations, the cumulative impact analysis area for aesthetics includes the StanCOG region and adjoining counties.

There are two types of aesthetic impacts that may be additive in nature and thus cumulative: night sky lighting and overall changes in the visual environment as the result of increasing urbanization of large areas. As development in one geographic area, such as a relatively large city adjoining agricultural land like Modesto, increases and connects with development in an adjoining ex-urban area, the effect of night sky lighting experienced outside of the region may increase in the form of larger and/or more intense nighttime glow in the viewshed. Although growth envisioned in the proposed 2026 RTP/SCS is primarily focused on infill areas, development outside of those areas with long-distance views may result in nighttime lighting becoming more visible, covering a larger area and/or appearing in new areas as a result of projected development under the proposed 2026 RTP/SCS.

With regard to the visual environment experienced throughout the cumulative impact analysis area, as planned cumulative development occurs over time the overall visual environment will change. The combination of forecasted development in the StanCOG region and planned development in neighboring counties would result in a different visual environment than currently exists. The cumulative impacts and associated changes in the visual environment (including scenic vistas and scenic resources) and night sky lighting and are considered significant and the contribution of the proposed 2026 RTP/SCS to these impacts is cumulatively considerable. Mitigation measures described earlier in this section would reduce impacts to aesthetics; however, even with implementation of those mitigation measures, impacts of the proposed 2026 RTP/SCS would remain cumulatively considerable.

4.2 Agriculture and Forestry

This section evaluates impacts on agriculture and forestry resources from implementation of the proposed 2026 RTP/SCS, including direct impacts associated with the conversion of agricultural land to non-agricultural use, the conversion of forest land to non-forest use, and potential indirect impacts to adjacent agricultural operations.

4.2.1 Setting

a. Overview of Regional Agriculture and Forestry

Agricultural Lands

The StanCOG region is located in California's San Joaquin Valley, one of the richest agricultural areas in the world, and contains 961,838 acres of productive farmland. The StanCOG region contributed $3.15 billion in 2024 to the California economy (Stanislaus County Agricultural Commissioner 2024); the agricultural industry is vitally important to both the County's industry and the nation's food supply.

The StanCOG region is among California's leaders in the production of almonds, milk, and poultry. In 1984, approximately 414,800 acres of land in the StanCOG region were classified as "agricultural land", according to the California Department of Conservation. Of this land, 189,754 acres were classified as "Prime Farmland". In 2004, the StanCOG region contained 843,603 acres of agricultural land and 262,045 acres of Prime Farmland; the total area increased due to completion of soil survey data for the northeastern section of the County (DOC 2018). However, since 2004, the amount of Prime Farmland in the StanCOG region has been declining due to conversion to other or non-agricultural uses.

Agriculture has deep roots in the region's history and future. The 2024 crop year's gross value of all agricultural commodities produced in the StanCOG region was $3,150,321,000. This represented a decrease (6 percent) from 2023.

Since 2004, there has been a Countywide decline of agricultural lands. From 2004 to 2018 there was a loss of 11,625 acres of Prime Farmland, but a net gain of 3,295 and 51,793 acres of Farmland of Statewide Importance and Unique Farmland, respectively. During the same period, Urban and Built-Up Land had a net total increase of 5,135 acres, Farmland of Local Importance had a net total decrease of 11,992 acres, and Grazing Land had a net total decrease of 46,083 acres (DOC 2018).

The land use pattern throughout the StanCOG region is characterized by relatively compact urban centers surrounded by agricultural lands that produce a wide range of commodities. Table 4.2-1 shows the 2023 and 2024 values of major crop groupings in the StanCOG region. Both the poultry and dairy sectors faced significant challenges in 2024 due to Highly Pathogenic Avian Influenza. This disease has wreaked havoc in commercial poultry across the United States since 2022, particularly turkey and egg-laying operations locally. In 2024, the virus jumped species, infecting dairy cattle for the first time. In Stanislaus County, the outbreak caused milk production losses in the final quarter and led to the quarantine of more than 80 percent of the county's dairies. In addition, 2024 marked the first detection of the Glassy-winged Sharpshooter in Stanislaus County, prompting the implementation of a quarantine and the use of integrated pest management strategies.

Table 4.2-1 Stanislaus County Annual Agricultural Crop Report

Crop Grouping	2023 Crop Value	2024 Crop Value
Apiary Products	99,844,000	90,907,000
Field Crops	200,498,000	181,414,000
Fruit and Nut Crops	1,056,480,000	1,089,326,000
Livestock & Poultry	662,659,000	524,957,000
Livestock & Poultry Products	823,099,000	816,331,000
Nursery Products	207,910,000	173,134,000
Other Agriculture	29,921,000	33,598,000
Vegetable Crops	285,671,000	240,654,000
Total	**3,150,321,000**	**3,366,082,000**

Source: Stanislaus County Agricultural Commissioner 2024

Important Farmlands

To characterize the environmental baseline for agricultural resources, Important Farmland Maps produced by the California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP) were reviewed. Unless otherwise expressed, the future use of "Important Farmland" in this EIR specifically includes the following definitions provided by the DOC (DOC 2019):

Prime Farmland

Land which has the best combination of physical and chemical characteristics to produce crops. It has the soil quality, growing season and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming standards.

Farmland of Statewide Importance

Land that is like Prime Farmland but with minor shortcomings, such as greater slopes or less ability to hold and store moisture.

Unique Farmland

Land of lesser quality soils is typically used to produce specific high economic value crops. It has the special combination of soil quality, location, growing season and moisture supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming methods. It is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Examples of crops include oranges, olives, avocados, rice, grapes and cut flowers.

Figure 4.2-1 illustrates the location of Important Farmland in the StanCOG region. Table 4.2-2 illustrates the most up to date conversion of Important Farmland in the StanCOG region from 2020 to 2022. As shown therein, the amount of Important Farmland within the StanCOG region increased by approximately 0.3 percent (1,177 acres) between 2020 and 2022.

Table 4.2-2 Important Farmland Conversion in Stanislaus County

	Total Acreage Inventoried		2020-2022 Acreage Changes			
Land Use Category	2020	2022	Acres Lost (-)	Acres Gained (+)	Total Acreage Changed	Net Acreage Changed
Important Farmland[1]	429,863	428,686	5,083	3,906	8,989	-1,177

[1]Within this table, Important Farmland includes Prime Farmland, Farmland of Statewide Importance, and Unique Farmland.

Source: DOC 2023

Williamson Act Lands

The California Land Conservation Act of 1965, Sections 51200 et seq. of the California Government Code, commonly referred to as the "Williamson Act", enables local governments to restrict the use of specific parcels of land to agricultural or related open space use. In 2021, the County established nine new Williamson Act contracts, totaling 457.6 acres (Stanislaus County Department of Planning and Community Development 2020). In 2022, the County established six new Williamson Act contracts, totaling 258.3 acres (Stanislaus County Department of Planning and Community Development 2021). In 2023, the County established nine new Williamson Act contracts, totaling 946.25 acres (Stanislaus County Department of Planning and Community Development 2022). In 2024, the County established 15 new Williamson Act contracts, totaling 913.59 acres (Stanislaus County Department of Planning and Community Development 2024).

Forest and Timber Lands

The Stanislaus County General Plan and County Zoning Ordinance do not specify any land in the County as designated or zoned for forestland or timberland. Additionally, the California Department of Forestry and Fire Protection (CAL FIRE) maintains a statewide record of Timber Harvesting Plans (THP), which does not display any THPs within Stanislaus County (CAL FIRE 2026).

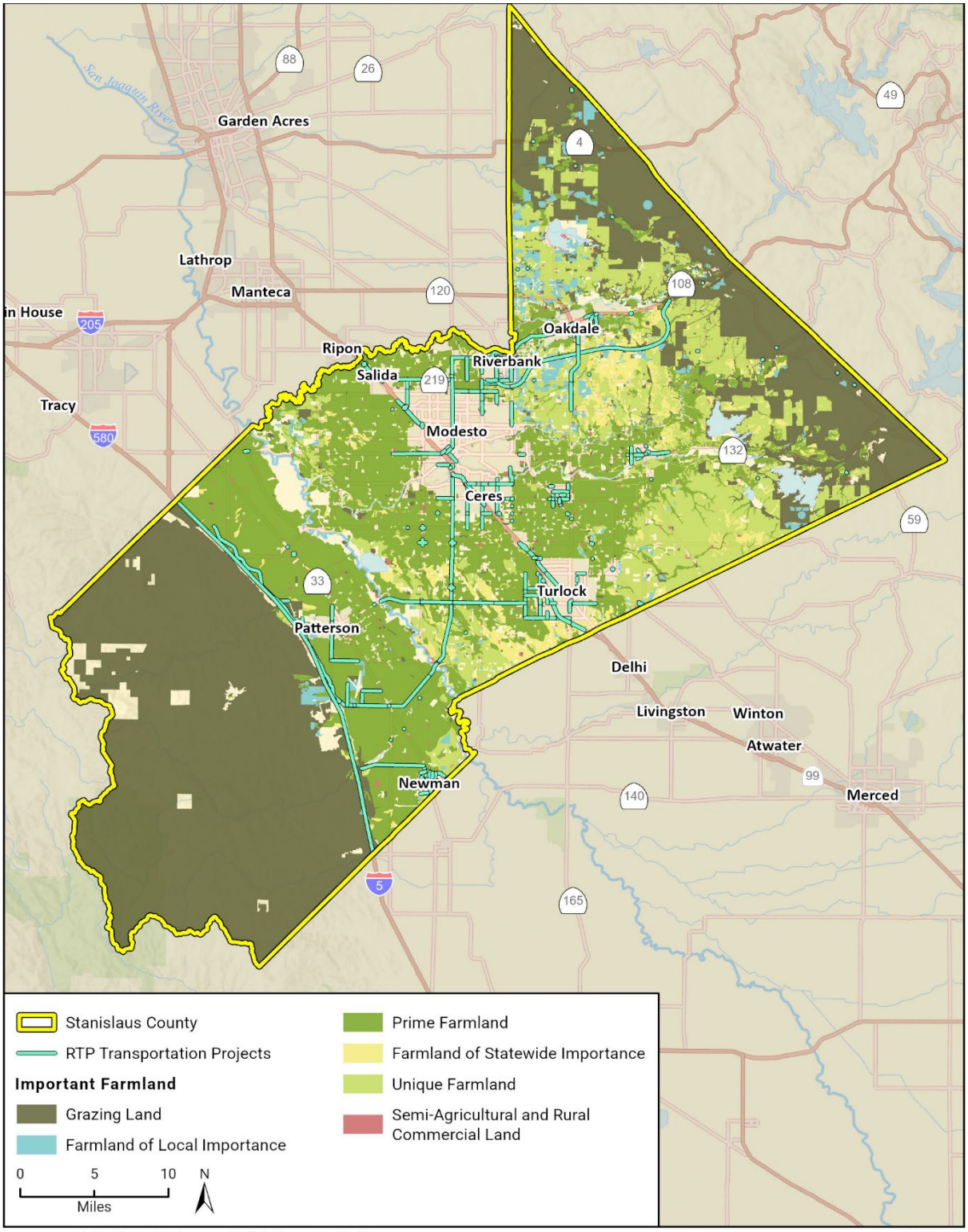
b. Agricultural/Urban Interface

According to the Stanislaus County General Plan, land use change threatens the continued productivity of agricultural land. Rapid growth at the edge of urban areas is converting Important Farmland to developed uses. The slow reduction of agricultural parcel sizes has also threatened the economic viability of the industry. As urban areas encroach on agricultural land, conflicts can result between growers and urban uses. Potential agricultural/urban land use conflicts can arise from the following activities, among others:

Potential Concerns for Urban Neighbors

- Use of pesticides/dust problems in vicinity of residential neighborhoods, particularly near schools.
- Odors and health concerns associated with fertilizer/pesticide application and livestock.
- Noise related to farming equipment or farm worker activities.
- Agricultural worker parking.

Figure 4.2-1 Important Farmland in Stanislaus County



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24-16018 EPS
EIRFig 3.1 County-wide Farmland

Potential Concerns for Agricultural Interests

- Restrictions on activity arising from neighbor concerns/complaints.
- Inability to move road equipment between farm areas as roadway capacity and improvements (curb and gutter, center medians) increase.
- Loss of revenue and competitiveness.
- Competition for water and land.
- Fragmentation of tracts of agricultural land such that farming becomes inefficient.
- Inability to continue flood irrigation systems.
- Pilferage, trespassing, and littering.
- Dust from adjacent construction activity.

4.2.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

Federal Farmland Protection Act

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to non-agricultural uses. It assures that to the extent possible federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to non-agricultural use and are completed by a federal agency or with assistance from a federal agency (Natural Resources Conservation Service n.d.).

Federal Farm and Ranchland Protection Program

The Federal Farm and Ranchland Protection Program (FRPP) is a voluntary easement purchase program that helps farmers and ranchers keep their land in agriculture. Pursuant to sections 1539 to 1549 of the FPPA of 1981, the Secretary of Agriculture is directed to establish and carry out a program to "minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses, and to the extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland." (7 USC 4201-4209 & 7 USC 658). The program provides matching funds to state, tribal, or local governments and non-governmental organizations with existing farmland protection programs to purchase conservation easements or other interests in land. The FRPP was re-authorized in the Farm Security and Rural Investment Act of 2002 (Farm Bill). The NRCS manages the program, and the Technical Committee awards funds to qualified entities to conduct their farmland protection programs. Although a minimum of 30 years is required for conservation easements, priority is given to applications with perpetual easements.

Federal Forest Legacy Program

The Federal Forest Legacy Program was a part of the 1990 Farm Bill. Its purpose is to identify and protect environmentally important forestlands that are threatened by present or future conversion to non-forest uses. The program provides conservation easements and gives priority to lands that can be effectively protected and managed, as well as lands that have significant scenic, recreational,

timber, riparian, fish, and wildlife, threatened and endangered species, and other cultural or environmental values. Properties that are "working forests," whereby the forestland is managed for the production of forest products, are also eligible under this program. Involvement in this program by private landowners is voluntary.

b. State Laws, Regulations, and Policies

Farmland Mapping and Monitoring Program

The DOC, under the Division of Land Resource Protection, developed the FMMP to monitor the conversion of the state's farmland to and from agricultural use. Data is collected at the county level to produce a series of maps identifying eight land use classifications using a minimum mapping unit of 10 acres. The program also produces a biannual report on the amount of land converted from agricultural to non-agricultural use. The program maintains an inventory of state agricultural land and updates the "Important Farmland Series Maps" every two years.

Land Conservation Act/Williamson Act

The California Land Conservation Act of 1965, Sections 51200 et seq. of the California Government Code, commonly referred to as the "Williamson Act", enables local governments to restrict the use of specific parcels of land to agricultural or related open space use. Landowners enter into contracts with participating cities and counties and agree to restrict their land to agriculture or open space use for a minimum of ten years. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market (speculative) value. Local governments receive an annual subvention of forgone property tax revenues from the state via the Open Space Subvention Act of 1971.

The Right to Farm Act

The Right to Farm Act of 1981 (Civ. Code, Section 3482.5) is meant to protect commercial agricultural operations from nuisance complaints that may occur when agricultural operations are conducting business in a "manner consistent with proper and accepted customs." The code states operations that have been in business for three or more years and not nuisances upon commencement of operation shall not be considered a nuisance because of new land use.

California Farmland Conservancy Program Act

The California Farmland Conservancy Program Act of 2010 formed the California Farmland Conservancy Program and provides grants for agricultural conservation easements. Agricultural conservation easements are created to support agriculture and prevent development on the subject parcels. Easements funded by the program must be suitable for commercial agriculture.

The Cortese-Knox-Hertzberg Local Government Reorganization Act

The Cortese-Knox-Hertzberg Local Government Reorganization Act (Government Code Sections 56000 et seq.) establishes procedures for local government changes of organization, including city incorporations, annexations to a city or special district and city and special district consolidations. This act requires that development or use of land for other than open space will be guided away from existing prime agricultural lands in open space use toward areas containing nonprime agricultural lands, unless that action would not promote that planned, orderly, efficient development of an area.

Forest Practice Act

CAL FIRE enforces the laws that regulate logging on privately owned lands in California under the Forest Practice Act. Under the Forest Practice Act of 1973, timber operations may only be conducted pursuant to an approved THP, an environmental review document prepared by a Registered Professional Forester and submitted by landowners to CAL FIRE. The THP outlines the timber they want to harvest, how it will be harvested, and the steps that will be taken to prevent damage to the environment. Because a THP is the functional equivalent to an EIR for tree removal activities, the approval of a THP could depend on the inclusion of required mitigation.

A landowner that proposes to carry out a project that will result in timberland being converted to a non-timber growing use must apply for either a Timberland Conversion Permit or a notice of exemption. Grounds for exemption include conversions of less than three acres, conversions to construct or maintain a right–of-way by a public agency or a public or private utility, and development of subdivisions on forest land where approved by local government. When a Timberland Conversion Permit is issued, restocking of the timber resources is not required, as the land is converted to a non-timber growing use.

c. Local Laws, Regulations, and Policies

Agriculture Preservation Policy

The Stanislaus County Local Agency Formation Commission (LAFCO) is established under the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (Government Code Section 56000, et seq.). The job of the commission is to "review and approve with or without amendment, wholly, partially, or conditionally, or disapprove proposals for changes of organization or reorganization, consistent with written policies, procedures, and guidelines adopted by the commission." (Government Code Section 56375). This gives the commission exclusive power to consider city incorporations, city annexations, as well as the creation of or addition to special districts. Government Code Section 56377 requires the commission to minimize impacts on open space lands, including agricultural lands, as follows:

- In reviewing and approving or disapproving proposals which could reasonably be expected to induce, facilitate, or lead to the conversion of existing open-space lands to uses other than open-space uses, the commission shall consider all of the following policies and priorities:
  A. Development or use of land for other than open-space uses shall be guided away from existing prime agricultural lands in open-space use toward areas containing nonprime agricultural lands, unless that action would not promote the planned, orderly, efficient development of an area.
  B. Development of existing vacant or nonprime agricultural lands for urban uses within the existing jurisdiction of a local agency or within the sphere of influence of a local agency should be encouraged before any proposal is approved which would allow for or lead to the development of existing open-space lands for non-open-space uses which are outside of the existing jurisdiction of the local agency or outside of the existing sphere of influence of the local agency.

The Stanislaus LAFCO has adopted an Agricultural Preservation Policy that provides evaluation standards for review of proposals that could induce or lead to the conversion of agricultural lands. The Policy requires that applicants prepare a Plan for Agricultural Preservation that details the impacts on agricultural resources and identifies the method or strategy selected to minimize the

loss of agricultural lands. The Policy sets forth three agricultural preservation strategies that the Commission encourages: 1:1 mitigation (that can also be achieved through in-lieu fees), reduction of an existing sphere of influence that contains agricultural lands, and voter-approved urban growth boundaries. In recognition of the County's requirements that 1:1 mitigation applies to conversion of agricultural lands to residential uses; LAFCO's Policy also allows for 1:1 mitigation to be focused on similar conversions.

County and City General Plans and Regulations

The general plans and zoning ordinances of the County and cities within the StanCOG region regulate land use and development patterns that influence the conservation, conversion, and long-term viability of agricultural resources within their jurisdictions, while the County's general plan performs the same function within unincorporated areas. In all cases, general plans and zoning typically include agricultural land use designations, right-to-farm policies, and, in some instances, requirements intended to minimize conflicts between agricultural and non-agricultural uses. In general, limited direction is provided regarding the treatment of agricultural resources within transportation facilities beyond compliance with applicable local, state, and federal regulations related to farmland protection and land conversion, rather than preservation of agricultural operations. Outlined below are the agricultural resource–related policies for Stanislaus County and the major cities within the StanCOG region.

Stanislaus County

The Stanislaus County General Plan includes an Agricultural Element (Chapter 7) to promote and protect local agriculture. Under Section 65303 of the California Government Code, optional elements of the general plan are authorized but not mandated by the state legislature. The Agricultural Element is coordinated with several other elements of the general plan and consistent with the entire general plan. It interacts primarily with the agriculture-related policies of the Land Use, Conservation/Open Space, and Housing Elements. The Agricultural Element's policies have the same legal status as any other element of the general plan. Relevant goals and policies to the proposed 2026 RTP/SCS EIR include the following (Stanislaus County 2015):

Goal 2: Conserve our agricultural lands for agricultural uses.

> **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 2.5:** To the greatest extent possible, development shall be directed away from the County's most productive agricultural areas.

City of Ceres General Plan

The City of Ceres General Plan contains several policies in the Agricultural and Natural Resources Element that pertain to the preservation and protection of agricultural land and minimize potential conflicts with farming in the City (City of Ceres 2018). For example, Policy 4.A.2, *Urban Expansion in Agricultural Areas*, states that the City of Ceres shall ensure that new development and public works projects do not encourage expansion of urban uses outside the Planning Area into areas designated for agriculture. Policy 4.A.5, *Land Use Compatibility,* of the General Plan requires development adjacent to designated agricultural areas to minimize conflicts with the adjacent agricultural uses.

City of Modesto General Plan

The City of Modesto Urban Area General Plan establishes a Baseline Developed Area and Redevelopment Area within the City in which development is encouraged to prevent more than minimal impacts to agricultural land (City of Modesto 2019). The General Plan also establishes the Planned Urbanizing Areas. Policies in the Environmental Resources and Open Space Element of the General Plan have been developed to minimize impacts and conflicts on agriculture land and uses in the Planned Urbanizing Areas. For example, policies state that the City shall support the continuation of agricultural uses on lands designated for urban uses in the Planned Urbanizing Areas until urban development is imminent. For any subsequent project that is adjacent to an existing agricultural use, the project proponent may incorporate measures to reduce the potential for conflicts with the agricultural use.

City of Turlock General Plan

The Turlock General Plan contains several policies in the Land Use Element and Conservation Element that pertain to the preservation and protection of agricultural land and minimize potential conflicts with farming in the City (City of Turlock 2012). For example, Policy 7.2-a of the Conservation Element directs the City to promote the preservation and economic viability of agricultural land adjacent to the City of Turlock. Policy 7.2-b of the Conservation Element directs the City to retain its agricultural setting by limiting urban expansion to designated areas and minimizing conflicts between agriculture and urban activities. Additionally, pursuant to Policy 7.2-e, the City is directed to require development at densities higher than typical in recent years in order to limit conversion of agricultural land and minimize the urban/agricultural interface.

Voter Action

In 1983, Stanislaus County sought to ensure the continued economic vitality of farmland by adopting a minimum parcel size requirement of 40 acres for the majority of agriculturally zoned land.

Stanislaus County voters passed Measure E in November 2007. Under Measure E, land that is designated as agricultural or open space in the Land Use Element cannot be amended to residential or rezoned to residential without the approval of a majority of county voters. Because Measure E amended the county general plan, it affects unincorporated lands that are under the county's jurisdiction. Under California law, a general plan amendment that is adopted by voter-approved initiative can be changed only by approval of another initiative.

The intent of Measure E is to direct residential growth into the incorporated cities, which are more capable of serving such growth, and limit the potential for residential growth to convert agricultural land within the unincorporated areas. Its immediate effect is to restrict future residential developments within the unincorporated county to those areas that are currently designated and zoned for residential development (e.g., Salida and Diablo Grande). Measure E will remain in effect until December 31, 2036, unless it is otherwise amended by a future voter initiative.

4.2.3 Impact Analysis

a. Methodology and Significance Thresholds

Agricultural impacts were evaluated based upon review of DOC Important Farmland classifications, regulatory requirements that apply to the various agricultural lands within the county, and the

potential of future development to create agricultural/urban interface. For analysis purposes, "Important Farmland" include the following DOC classifications: Prime Farmland, Farmland of Statewide Importance, and Unique Farmland.

Appendix G of the *CEQA Guidelines* identifies the following criteria for determining whether development facilitated by the proposed 2026 RTP/SCS would have a significant impact on agriculture and forestry resources, namely an analysis of whether or not the proposed 2026 RTP/SCS would:

1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use;
2. Conflict with existing zoning for agricultural use, or a Williamson Act contract;
3. Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production;
4. Result in the loss of forest land or conversion of forest land to non-forest use; and/or
5. 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.

b. Project Impacts and Mitigation Measures

The following section describes generalized agricultural resource impacts associated with the projects included in the land use scenario envisioned by the proposed 2026 RTP/SCS. Due to the programmatic nature of the proposed 2026 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the proposed 2026 RTP/SCS could result in the impacts as described in the following section.

Threshold 1:	Would the project 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?
Threshold 2:	Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?
Threshold 5:	Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

Impact AG-1 PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD RESULT IN THE CONVERSION OF PRIME FARMLAND, UNIQUE FARMLAND, OR FARMLAND OF STATEWIDE IMPORTANCE TO NON-AGRICULTURAL USE, OR CONFLICT WITH EXISTING ZONING FOR AGRICULTURE OR A WILLIAMSON ACT CONTRACT. THIS WOULD BE A SIGNIFICANT AND UNAVOIDABLE IMPACT.

The most recent FMMP data from the DOC has identified 428,686 acres of land as Important Farmland in the StanCOG region (refer to Table 4.2-2). In addition, the StanCOG region has agricultural lands under Williamson Act contract. Figure 4.2-2 through Figure 4.2-5 illustrate the

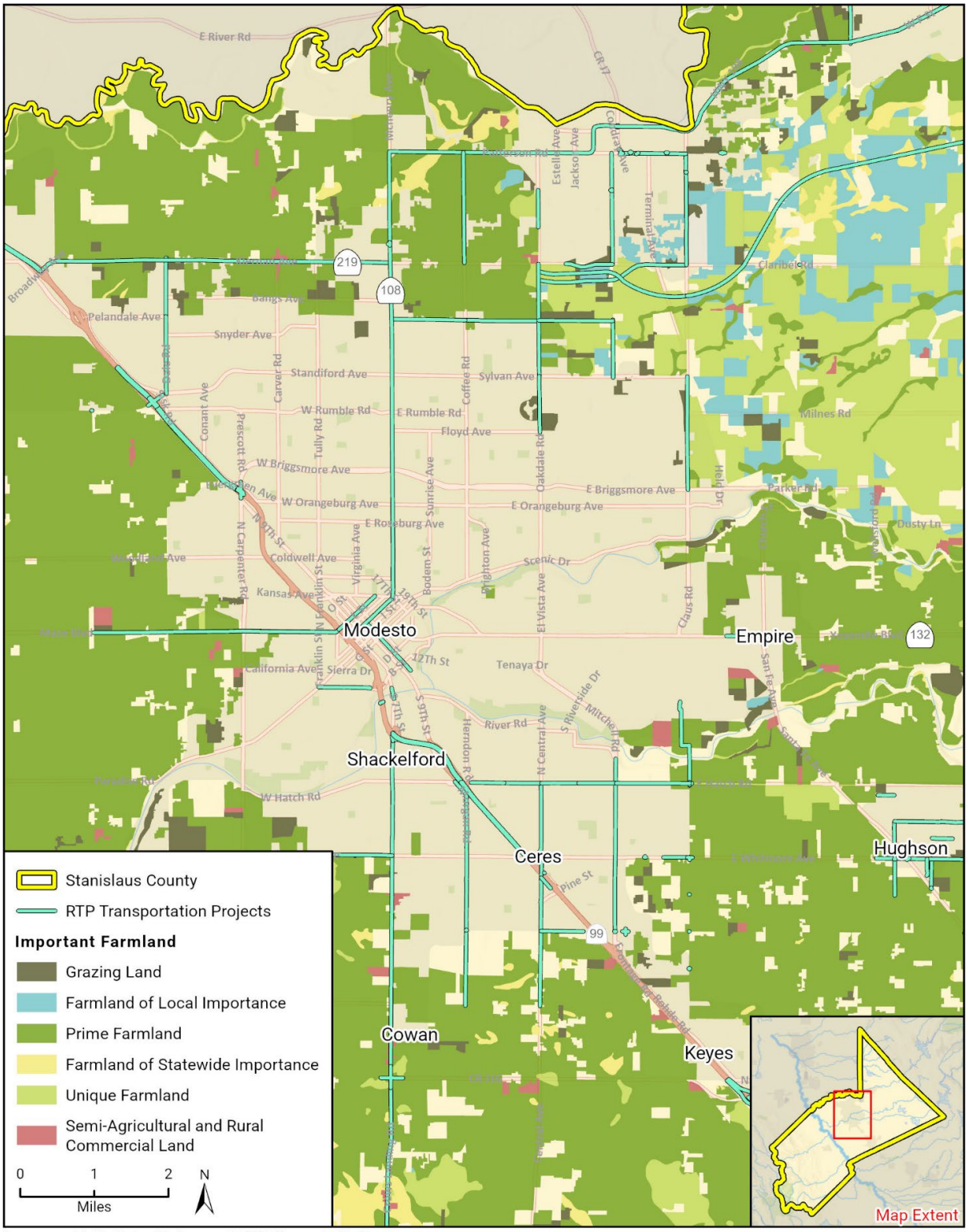
location of Important Farmland in relation to transportation projects included in the proposed 2026 RTP/SCS.

The proposed 2026 RTP/SCS emphasizes infill development and development near existing transportation corridors, which are generally located in urbanized areas of cities and unincorporated communities. Such land use development within urbanized areas would not be likely to result in agricultural resource impacts since they would be located within existing urban areas. Because the proposed 2026 RTP/SCS land use pattern emphasizes infill development in conjunction with mixed use and transit-oriented development within existing urbanized areas along transportation corridors, the majority of this Important Farmland would not be impacted by the proposed 2026 RTP/SCS.

Transportation improvement projects under the proposed 2026 RTP/SCS adjacent to agricultural areas, particularly those requiring new rights-of-way, could convert Important Farmland to non-agricultural use, or conflict with agricultural zoning and/or Williamson Act contracts through the involvement of other changes in the existing environment which, due to their location or nature, result in conversion of farmland to a non-agricultural use. Although incorporated cities in the StanCOG region are urbanized, many cities border agriculture, including FMMP-designated Important Farmland. Transportation improvement projects that involve roadway widening have the potential to affect narrow segments of agricultural land located immediately along the existing right-of-way of proposed improvements. For example, the widening of State Route 33 through the StanCOG region would have the potential to impact agricultural lands immediately adjacent to both sides of the roadway. In addition, improving, expanding, and extending existing roadways, along with the installation of new roadways, could remove some barriers to development taking place on the urban edge as the region's connectivity and access improves from these projects. Additionally, construction of projects adjacent to agricultural fields could result in introduction of invasive species or weeds, which could out compete agricultural crops. It is important to note that for federally funded projects, implementing and local agencies are required to follow the rules and regulations of the FPPA including determining the impact by completing the Farmland Conversion Impact Rating form (AD-1006). The FPPA assures that to the extent possible, federal programs are administered to be compatible with state and local programs and policies to protect farmland.

The proposed 2026 RTP/SCS would also relieve traffic congestion in urban areas and in the spheres of influence around cities in the StanCOG region, which could potentially change a city's periphery. This could change which communities are closest to agricultural land, and new residents in these areas may be react to the noise, pesticide use, and dust generated by farming practices, resulting in pressure to change zoning or other laws related to those farming activities. According to the County's Right-to-Farm Ordinance (Section 9.32.050 of the Stanislaus County Code), the County would condition discretionary permits for special uses and residential development within or adjacent to agricultural uses to record a Right-to-Farm Notice. Thus, residents moving into these areas in the vicinity of existing agricultural activities would acknowledge that they may experience discomfort or inconveniences arising from typical agricultural operations, and that an established agricultural operation shall not be considered a nuisance due to moving to the nuisance. The right-to-farm ordinance purpose is to promote an understanding and cooperation between urban residents and agricultural operators.

Figure 4.2-2 FMMP Designations and Proposed 2026 RTP/SCS Projects – Ceres



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24-16018 EPS
EIRFig 3 Farmland

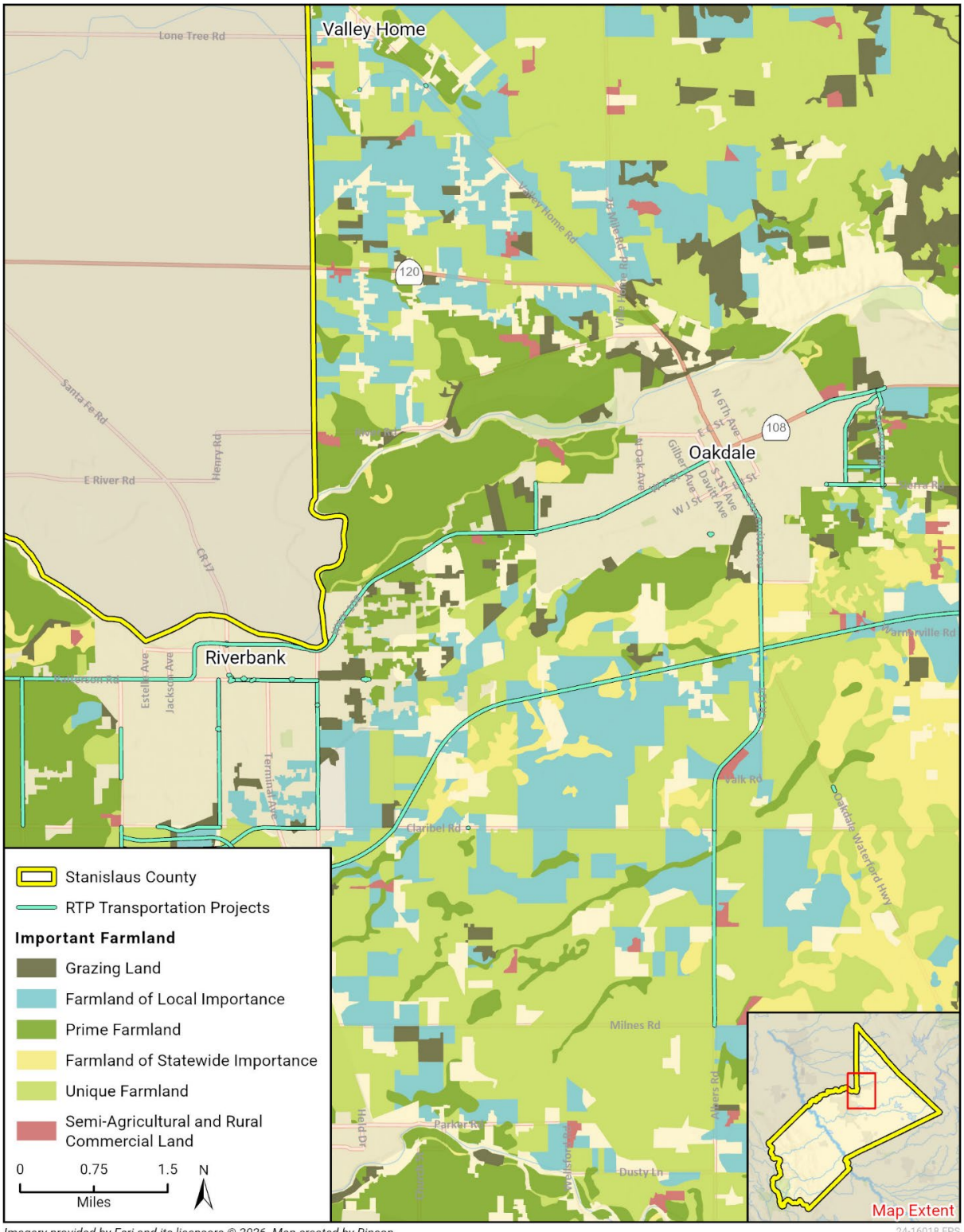
Figure 4.2-3 FMMP Designations and Proposed 2026 RTP/SCS Projects – Patterson and Newman



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24-16018 EPS
EIRFig 3 Farmland

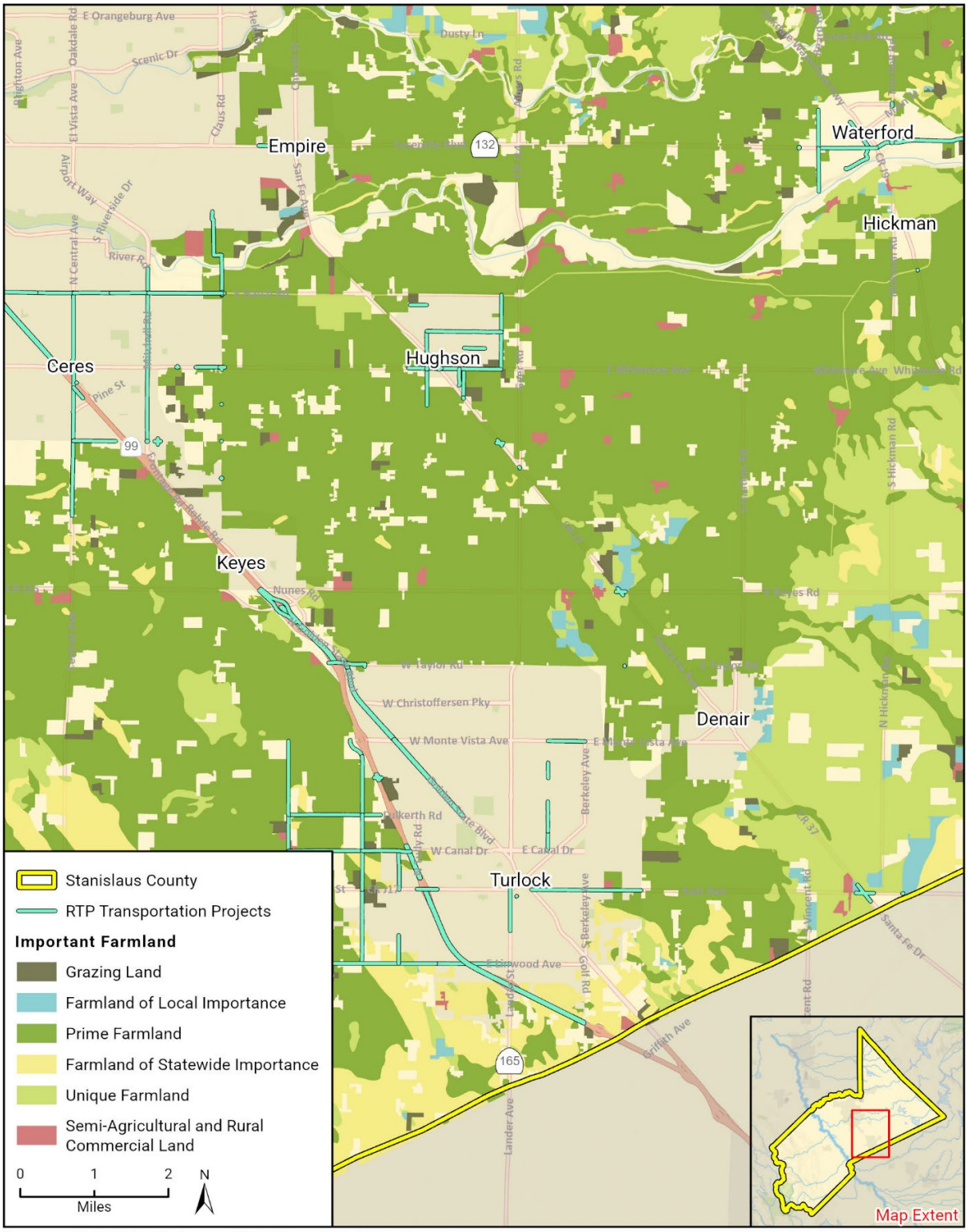
Figure 4.2-4 FMMP Designations and Proposed 2026 RTP/SCS Projects – Riverbank and Oakdale



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24-16018 EPS
EIRFig 3 Farmland

Figure 4.2-5 FMMP Designations and Proposed 2026 RTP/SCS Projects – Turlock, Hughson, and Waterford



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24-16018 EPS
EIRFig 3 Farmland

A determination of the impacts to Important Farmland, agricultural zoning and conflicts with Williamson Act contracts would be made on a case-by-case basis as individual projects are implemented. Many individual projects would likely not create significant impacts, particularly those that involve only minor widening along existing rights-of-way or would be located in urbanized areas zoned for development. Nevertheless, because implementation of the proposed 2026 RTP/SCS may directly result in conversion of Important Farmland and conflict with agricultural zoning and Williamson Act contracts, this would be a significant impact.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement the following mitigation measures developed for the proposed 2026 RTP/SCS program, where applicable, for transportation projects that would result in impacts to Important Farmland. Stanislaus County and cities in the StanCOG region can and should implement these measures, where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

AG-1 Agricultural Land Impact Avoidance and Minimization

Implementing agencies shall implement measures, where feasible based on project and site specific considerations, that include, but are not limited to those identified below.

- Require project relocation or corridor realignment, where feasible, to avoid Important Farmland, agriculturally zoned land and/or land under Williamson Act contract;
- Manage project construction to minimize the introduction of invasive species or weeds that may affect agricultural production on agricultural land adjacent to project sites. Managing project construction may include washing construction equipment before bringing equipment on-site, using certified weed-free straw bales for construction Best Management Practices (BMPs), and other similar measures.
- Provide buffers, berms, setbacks, fencing, or other project design measures to protect surrounding agriculture, and to reduce conflict with farming that could result from implementation of transportation improvements and/or development included as a part of the RTP/SCS.
- Achieve compensatory mitigation in advance of impacts through purchase or creation of mitigation credits or the implementation of mitigation projects through Regional Advance Mitigation Planning, as deemed appropriate by permitting agencies.
- Require acquisition of conservation easements on land in the same jurisdiction, if feasible, and at least equal in quality and size to converted Important Farmland, to offset the loss of Farmland.
- Institute new protection of farmland in the project area or elsewhere through the use of long-term restrictions on use, such as 20-year Farmland Security Zone contracts (Government Code Section 51296 et seq.) or 10-year Williamson Act contracts (Government Code Section 51200 et seq.).

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are Stanislaus County and incorporated cities

within the County. This mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during construction, where applicable.

Significance After Mitigation

If the implementing agency adopts these mitigation measures, impacts from the proposed 2026 RTP/SCS would be reduced, although not to a less than significant level. Because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, even with implementation of Mitigation Measure AG-1, impacts could remain significant and unavoidable. In addition, impacts remain significant and unavoidable due to the irreversible effects of land conversion. Further, as described in Section 3.3.1, *Mitigation Approach*, StanCOG does not have the authority to require other implementing agencies (e.g., Caltrans, counties, cities, transit agencies, etc.) for individual projects included in the proposed 2026 RTP/SCS to implement these mitigation measures. As a result, the aforementioned mitigation could reduce impacts if implemented, but as implementation is not guaranteed, impacts would remain significant and unavoidable.

Threshold 3:	Would the project conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production
Threshold 4:	Would the project result in the loss of forest land or conversion of forest land to non-forest use

Impact AG-2 PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD NOT CONFLICT WITH EXISTING ZONING FOR FOREST LAND, TIMBERLAND, OR TIMBERLAND PRODUCTION, NOR RESULT IN THE LOSS OF FOREST LAND OR CONVERT FOREST LAND TO NON-FOREST USES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The Stanislaus County General Plan and County Zoning Ordinance do not specify any land in the StanCOG region as designated or zoned for forestland or timberland. The proposed 2026 RTP/SCS and County and city polices focus development in areas that do not include forest land or timberland, as defined by statutes. As such, the proposed 2026 RTP/SCS would not conflict with existing zoning for forest land, timberland, or timber production, nor convert forest land to non-forest use.

Because land use strategies contained within the proposed 2026 RTP/SCS would help to encourage growth in developed areas, and forest lands and timber areas are located outside the StanCOG region, impacts on conversion of forest land or conflicts with land zoned for forest land, timberland, or timberland production would be less than significant.

Mitigation Measures

Mitigation measures are not required because this impact would be less than significant, as jurisdictions are required to follow the protection policies and ordinances as described above.

4.2.4 Cumulative Impacts

The cumulative analysis presented below primarily relies on a projections-based approach, using regional land use and growth forecasts for the StanCOG region and adjoining counties to evaluate cumulative conditions. Information regarding these adjoining counties can be found in Chapter 3, *Environmental Setting, 3.3.4 Approach for Cumulative Analysi*s. The project is assessed within the

existing and foreseeable future environmental setting, and a determination is made as to whether its incremental contribution would be cumulatively considerable when considered alongside both the overall envisioned land use scenario and specific planned transportation projects.

The cumulative impact analysis area for agriculture and forestry resources consists of the StanCOG region and adjoining counties. Future development in this cumulative impact analysis area that would impact farmland or forestry land is considered in the analysis. This cumulative extent is used to evaluate the potential loss or conversion of farmland and forest land due to projected regional development to determine whether reasonably foreseeable future development facilitated under the land use scenario envisioned by the proposed 2026 RTP/SCS would contribute to the reduction in these resources in the StanCOG region.

Future development within the cumulative impact analysis area would convert agricultural land to non-agricultural uses and may result in conflicts with agricultural zoning and Williamson Act contracts. In addition, future development adjacent to agricultural land has the potential to result in a loss of Important Farmland due to land use conflicts, which adds to the cumulative conversion of agricultural lands. Cumulative impacts to agricultural resources would be significant. As described above, implementation of transportation projects and land use development patterns under the proposed 2026 RTP/SCS would contribute to these impacts by resulting in conversion of Important Farmland to non-agricultural use, and conflicts with agricultural zoning or Williamson Act contracts. This is a cumulatively considerable contribution to cumulative agricultural impacts.

Implementation of Mitigation Measure AG-1 would reduce the contribution of the proposed 2026 RTP/SCS to cumulative agricultural land impacts. However, the mitigation would not ensure that the future land use development pattern and transportation projects could feasibly relocate or realign to avoid impacts, and impacts would remain significant and unavoidable. The contribution of the proposed 2026 RTP/SCS to cumulative impacts would therefore remain cumulatively considerable post-mitigation.

In the cumulative impact analysis area, forestland and timber resources are primarily located in Calaveras County and Mariposa County. Specifically, the Sierra National Forest and Stanislaus National Forest are located within Mariposa and Calaveras counties and contain large expanses of publicly managed forests. National forests are protected by federal law and greatly restrict any type of urban development that can occur in these areas. Thus, future development within the cumulative impact analysis area would not convert forestland to non-forest uses and thus would not result in conflicts with forest zoning. Cumulative impacts to forestland and timber resources would therefore be less than significant. The contribution of the proposed 2026 RTP/SCS to cumulative impacts to forestland and timber resources would not be cumulatively considerable.

4.3 Air Quality

This section evaluates the air quality impacts resulting from implementation of the 2026 RTP/SCS. Both temporary impacts relating to construction activities and long-term impacts associated with population and employment growth and associated growth in vehicle traffic and energy consumption are discussed. Greenhouse gas emissions are analyzed in Section 4.8, G*reenhouse Gas Emissions and Climate Change.*

4.3.1 Setting

a. Climate and Meteorology

Air quality is affected by the rate and location of pollutant emissions and by climatic conditions that influence the movement and dispersion of pollutants. Atmospheric conditions, such as wind speed, wind direction and air temperature gradients, along with local and regional topography, mediate the relationship between air pollutant emissions and air quality.

The StanCOG region is located within the San Joaquin Valley Air Basin (SJVAB), which includes San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and western Kern County counties. The SJVAB is approximately 250 miles long and 35 miles in width (on average) and is bordered by the Coast Range Mountains on the west, the Sierra Nevada Mountains on the east, and the Tehachapi Mountains to the south. On the valley floor, the SJVAB is open only to the north, which heavily influences prevailing winds. Northwesterly winds are common during summer months, and air masses are often channeled towards the southeastern end of the San Joaquin Valley. Winds are often weaker in the winter, which contribute to stagnation events in which transport of pollutants is very limited (San Joaquin Valley Air Pollution Control District [SJVAPCD] 2015).

The SJVAB is generally considered to have a Mediterranean climate, characterized by sparse rainfall and hot, dry summers. With an average of over 260 sunny days per year, the SJVAB provides favorable conditions for ozone formation. While precipitation and fog during the winter sometimes block sunlight and reduce ozone concentrations, wintertime fog provides favorable conditions for the formation of particulate matter (SJVAPCD 2015).

Local climate conditions for the StanCOG region are shown in Table 4.3-1. As summarized therein, the warmest month of the year is July, and the coldest month of the year is December. The annual average maximum temperature is 76 degrees Fahrenheit (°F), while the annual average minimum temperature is 51°F (Weather Spark 2026).

Table 4.3-1 Stanislaus County Climate Conditions

Temperature Parameter or Metric	Condition
Average annual rainfall	16 inches
Average annual maximum temperature	76°F
Average annual minimum temperature	51°F
Warmest month	July
Coolest month	December
Average annual mean temperature	62°F
Average wind speed	6.6 miles per hour
Predominant wind direction	northwest

°F = degrees Fahrenheit
Note: Averages are based on the period of record from January 1980 to December 2016.
Source: WeatherSpark 2026; Iowa Environmental Mesonet 2025

b. Sources of Air Pollution

Air pollutant emissions in the SJVAB are generated primarily by stationary and mobile sources. Stationary sources can be divided into two major subcategories:

- Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat.
- Area sources are widely distributed and include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products.

Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and can also be divided into two major subcategories:

- On-road sources may be legally operated on roadways and highways.
- Off-road sources include aircraft, ships, trains, and self-propelled construction equipment.

Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles.

c. Air Pollutants of Primary Concern

The federal and State Clean Air Acts mandate the control and reduction of certain air pollutants. Under these laws, the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for "criteria pollutants" and other pollutants. Some pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere, including carbon monoxide, volatile organic compounds (VOC)/reactive organic gases (ROG),[1] nitrogen oxides (NO_X), particulate matter with diameters of up

[1] CARB defines VOC and ROG similarly as, "any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate," with the exception that VOC are compounds that participate in atmospheric photochemical reactions. For the purposes of this analysis, ROG and VOC are considered comparable in terms of mass emissions, and the term ROG is used in this EIR.

to ten microns (PM_{10})[2] and up to 2.5 microns ($PM_{2.5}$), sulfur dioxide, and lead. Other pollutants are created indirectly through chemical reactions in the atmosphere, such as ozone, which is created by atmospheric chemical and photochemical reactions primarily between ROG and NO_X. Secondary pollutants include oxidants, ozone, and sulfate and nitrate particulates (smog). The characteristics, sources and effects of criteria pollutants are discussed in the following subsections. Table 4.3-2 describes the characteristics, sources, and health and atmospheric effects of air pollutants of primary concern.

Table 4.3-2 Description of Selected Air Contaminants

Air Contaminants of Concern
Photochemical Oxidant (Ox)
Characteristics. The term "photochemical oxidant" can include several different pollutants but consists primarily of ozone (more than 90 percent) and a group of chemicals called organic peroxynitrates. Photochemical oxidants are created in the atmosphere rather than emitted directly into the air. Reactive organic gases and oxides of nitrogen are the emitted contaminants which participate in the reaction. Ozone is a pungent, colorless toxic gas, which is produced by the photochemical process. Photochemical oxidant is a characteristic of southern California-type smog and reaches highest concentrations during the summer and early fall.
Sources. Ozone is caused by complex atmospheric reactions involving oxides of nitrogen and reactive organic gases with ultraviolet energy from sunlight. Motor vehicles are the major source of oxides of nitrogen and reactive organic gases in the basin.
Effects. The common manifestations of ozone and other photochemical oxidants are damage to vegetation and cracking of untreated rubber. Ozone in high concentrations (ranging from 0.15 ppm to 0.50 ppm) can also directly affect the lungs, causing respiratory and coronary irritation and possible changes in lung functions. These health problems are particularly acute in children and elderly people exposed to these pollutants.
Carbon Monoxide (CO)
Characteristics. CO is a colorless, odorless, toxic gas produced through the incomplete combustion of fossil fuels. Concentrations are higher in winter when more fuel is burned for heating purposes and weather conditions favor the build-up of directly emitted contaminants.
Sources. The use of gasoline-powered engines is the major source of this contaminant, with automobiles being the primary contributor. The CO emissions from gasoline-powered engines are higher during winter months due to poor engine efficiency in cold temperatures. Various industrial processes also produce CO emissions through incomplete combustion of fossil fuels.
Effects. CO does not irritate the respiratory tract. However, it passes through the lungs directly into the blood stream and, by interfering with the transfer of oxygen, deprives sensitive tissues of oxygen.
Nitrogen Oxides (NO_X)
Characteristics. NO_X primarily consists of nitric oxide (NO) (a colorless, odorless gas formed from atmospheric nitrogen and oxygen when petroleum combustion takes place under high temperatures and/or pressure) and nitrogen dioxide (NO_2) (a reddish-brown irritating gas formed by the combination of nitric oxide with oxygen). Due to the role they play as ozone precursors, oxides of nitrogen are one of the two criteria pollutants subject to federal ozone requirements.
Sources. High combustion temperatures cause nitrogen and oxygen to combine and form nitric oxide. Further reaction produces additional oxides of nitrogen. Combustion in motor vehicle engines, power plants, refineries, and other industrial operations are the primary sources in the region. Ships, railroads and aircraft are other significant emitters.
Effects. Oxides of nitrogen are direct participants in photochemical smog reactions. The emitted compound, nitric oxide, combines with oxygen in the atmosphere in the presence of sunlight, to form nitrogen dioxide and ozone. Nitrogen dioxide, the most significant of these pollutants, can color the atmosphere at concentrations as low as 0.5 ppm on days of 10-mile visibility. NO_2 is an important air pollutant in the region because it is a primary receptor of ultraviolet light. The latter initiates photochemical reactions, helping to form ozone and/or particulate nitrate. It will also react in the air to form nitrate particulates.

[2] A micron is unit of length equal to one millionth of a meter.

Air Contaminants of Concern

Sulfur Dioxide (SO_2)

Characteristics. SO_2 is a colorless, pungent, irritating gas formed primarily by the combustion of sulfur-containing fossil fuels. In humid atmospheres, SO_2 can form sulfur trioxide and sulfuric acid mist, with some of the latter eventually reacting to produce sulfate particulates.

Sources. This contaminant is the natural combustion product of sulfur or sulfur-containing fuels. Fuel combustion is the major source, while chemical plants, sulfur recovery plants and metal processing are minor contributors.

Effects. At sufficiently high concentrations, sulfur dioxide irritates the upper respiratory tract. At lower concentrations, when in conjunction with particulates, SO_2 appears able to do still greater harm by injuring lung tissues. Sulfur oxides, in combination with moisture and oxygen, can yellow the leaves of plants, dissolve marble and eat away iron and steel. Sulfur oxides can also react to form sulfates, which reduce visibility.

Particulates (Total Suspended Particles and PM_{10})

Characteristics. Atmospheric particulates are made up of finely divided solids or liquids, such as soot, dust, aerosols, fumes and mists. About 90 percent by weight of the emitted particles are larger than 10 microns in diameter, but about 10 percent by weight, or 90 percent of the total *number* of particulates, are less than 5 microns in diameter. The aerosols formed in the atmosphere, primarily sulfate and nitrate, are usually smaller than 1 micron. In areas close to major sources, particulate concentrations are generally higher in the winter, when more fuel is burned for heating and meteorological conditions favor the build-up of directly-emitted contaminants. However, in areas remote from major sources and subject to photochemical smog (ozone), particulate concentrations can be higher during summer months because the presence of ozone increases the potential for SO_2 and NO_2 to convert to sulfate and nitrate particulates.

Sources. Particulate matter consists of particles in the atmosphere resulting from many kinds of dust and fume-producing industrial and agricultural operations, from combustion and from atmospheric photochemical reactions. Re-entrained road dust from vehicles is a significant source of particulates. Natural activities also put particulates into the atmosphere; wind-raised dust and ocean spray are two such sources of particulates.

Effects. In the respiratory tract, very small particles of certain substances may produce injury by themselves, or may contain absorbed gases that are injurious. Suspended in the air, particulates less than 5 microns in diameter can both scatter and absorb sunlight, producing haze and reducing visibility. They can also cause a wide range of damage to materials.

Diesel Particulate Matter

Characteristics. Diesel particulate matter (DPM) is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is commonly found throughout the environment. Diesel exhaust is composed of two phases, either gas or particle, and both phases contribute to the risk. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde and polycyclic aromatic hydrocarbons. Diesel exhaust has a distinct odor, which is primarily a result of hydrocarbons and aldehydes contained in diesel fuel. The particle phase also has many different types of particles that can be classified by size or composition. The size of diesel particulates that are of greatest health concern are those that are in the categories of fine and ultra-fine particles. The composition of these fine and ultra-fine particles may be composed of elemental carbon with adsorbed compounds such as organic compounds, sulfate, nitrate, metals and other trace elements.

Sources. Diesel exhaust is emitted from a broad range of diesel engines: the on-road diesel engines of trucks, buses and cars and the off-road diesel engines that include locomotives, marine vessels and heavy-duty equipment.

Effects. Acute exposure to diesel exhaust may cause irritation to the eyes, nose, throat and lungs and some neurological effects such as lightheadedness. Acute exposure may also elicit a cough or nausea as well as exacerbate asthma. Chronic exposure in experimental animal inhalation studies has shown a range of dose-dependent lung inflammation and cellular changes in the lung and there are also diesel exhaust immunological effects. Based upon human and laboratory studies, there is considerable evidence that diesel exhaust is a likely carcinogen. Human epidemiological studies demonstrate an association between diesel exhaust exposure and increased lung cancer rates in occupational settings.

Air Contaminants of Concern
Hydrocarbons and Other Organic Gases
Characteristics. Any of the vast family of compounds consisting of hydrogen and carbon in various combinations are known as hydrocarbons. Fossil fuels are included in this group. Many hydrocarbon compounds are major air pollutants, and those which can be classified as olefins or aromatics are highly photochemically reactive. Atmospheric hydrocarbon concentrations are generally higher in winter because the reactive hydrocarbons react more slowly in the winter and meteorological conditions are more favorable to their accumulating in the atmosphere to higher concentration before producing photochemical oxidants. Due to the role they play as ozone precursors, reactive hydrocarbons are one of the two criteria pollutants subject to federal ozone requirements. **Sources.** Motor vehicles are a major source of anthropogenic hydrocarbons (AHC) in the basin. Other sources include evaporation of organic solvents, and petroleum refining and marketing operations. Trees are the principal emitters of biogenic or natural hydrocarbons (NHC). **Effects.** Certain hydrocarbons can damage plants by inhibiting growth and causing flowers and leaves to fall. Levels of hydrocarbons currently measured in urban areas are not known to cause adverse effects in humans. However, certain members of this contaminant group are important components in the reactions which produce photochemical oxidants.
Lead (Pb)
Characteristics. Lead is an elemental heavy metal found naturally in the environment as well as in manufactured products. Lead can be released directly into the air, as suspended particles. It is soft, malleable and melts at a relatively low temperature. When freshly cut, it has a bluish-white tint; it tarnishes to a dull gray upon exposure to air. Lead has several properties that make it useful: high density, low melting point, ductility, and relative inertness to oxidation. Combined with relative abundance and low cost, these factors resulted in the extensive worldwide use of lead. Lead is persistent in the environment and accumulates in soils and sediments through deposition from air sources, direct discharge of waste streams to water bodies, mining, and erosion. **Sources.** The major sources of lead emissions historically have been mobile and industrial sources. As a result of phasing out leaded gasoline, metal processing currently is the primary source of Pb emissions. The highest level of lead in the air is generally found near lead smelters. Other stationary sources include waste incinerators, utilities, and lead-acid battery manufacturers. **Effects.** Humans may be exposed to lead from air pollution directly, through inhalation, or through the incidental ingestion of lead that has settled out from the air onto soil or dust. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems and the cardiovascular system. Lead exposure also affects the oxygen carrying capacity of the blood. The lead effects most commonly encountered in current populations are neurological effects in children and cardiovascular effects (e.g., high blood pressure and heart disease) in adults. Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits and lowered IQ. Elevated lead in the environment can result in decreased growth and reproductive rates in plants and animals and neurological effects in vertebrates.

Source: USEPA 2026a

Toxic Air Contaminants

A toxic air contaminant (TAC) is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health. TACs may result in long-term health effects such as cancer, birth defects, neurological damage, asthma, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation, runny nose, throat pain, and headaches. TACs are considered either carcinogenic or non-carcinogenic based on the nature of the health effects associated with exposure. For carcinogenic TACs, potential health impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Non-carcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

TACs include both organic and inorganic chemical substances. One of the main sources of TACs in California is diesel engines that emit exhaust containing solid material known as diesel particulate matter (DPM; CARB 2025a); however, TACs may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities.

CARB reports that diesel particulate matter represents about 70 percent of the potential cancer risk from vehicle travel on a typical urban freeway (CARB 2005). Residences and communities in proximity to TAC sources are disproportionately impacted. To protect people from TACs and reduce exposure, CARB recommends avoiding locating new sensitive land uses, such as residences, schools, daycare centers, playgrounds, or medical facilities, within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. Additional non-cancer health risk attributable to proximity to freeways was seen within 1,000 feet and was strongest within 300 feet. California freeway studies show about a 70 percent drop-off in particulate pollution levels at 500 feet (CARB 2005).

Diesel Particulate Matter

One of the main sources of TACs in California is diesel engine exhaust that contains solid material known as DPM. Diesel exhaust is composed of two phases, either gas or particle, and both phases contribute to health risk associated with sensitive receptor exposure. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons. Diesel exhaust has a distinct odor, which is primarily a result of hydrocarbons and aldehydes contained in diesel fuel. The particle phase also has many different types of particles that can be classified by size or composition. The size of diesel particulates that are of greatest health concern are those that are in the categories of fine and ultra-fine particles. The composition of these fine and ultra-fine particles may be composed of elemental carbon with adsorbed compounds such as organic compounds, sulfate, nitrate, metals, and other trace elements.

More than 90 percent of DPM is less than one micron in diameter (about $1/70^{th}$ the diameter of a human hair) and thus is a subset of $PM_{2.5}$. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs (CARB 2025a). The particles have hundreds of chemicals adsorbed onto their surfaces, including many known or suspected mutagens and carcinogens. The California Office of Environmental Health Hazard Assessment (OEHHA) completed a comprehensive health assessment of diesel exhaust in 1998, which formed the basis for CARB to formally identify the particles in diesel exhaust as a TAC. In California, DPM has a significant impact since it is estimated that 70 percent of total known cancer risk related to air toxics is attributable to DPM. According to CARB, DPM is estimated to increase statewide cancer risk by 520 cancers per million residents exposed over a lifetime (CARB 2025a).

DPM can also be responsible for elevated localized exposures (“hotspots”). Risk characterization scenarios conducted by CARB have determined the potential cancer risk resulting from proximity to DPM sources, such as school buses and high-volume freeways.

Acute exposure to diesel exhaust may cause irritation to the eyes, nose, throat and lungs and some neurological effects such as lightheadedness. Acute exposure may also elicit a cough or nausea as well as exacerbate asthma. Chronic exposure in experimental animal inhalation studies has shown a range of dose-dependent lung inflammation and cellular changes in the lung and there are also diesel exhaust immunological effects. Based upon human and laboratory studies, there is considerable evidence that diesel exhaust is a likely carcinogen. Human epidemiological studies

demonstrate an association between diesel exhaust exposure and increased lung cancer rates in occupational settings.

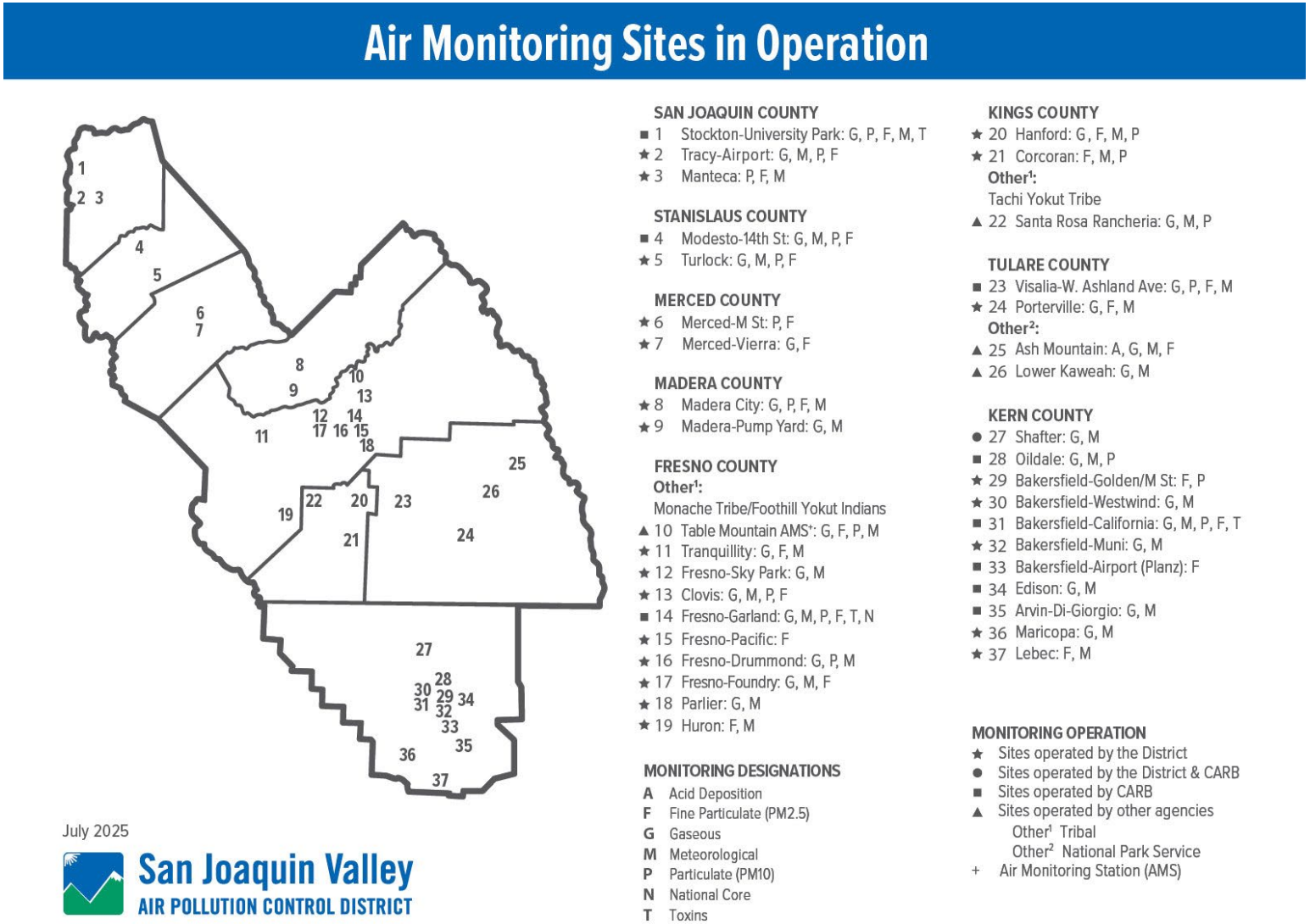
Besides DPM, several other pollutants are emitted by vehicle exhaust are a public health concern. USEPA has identified five pollutants of highest priority in addition to DPM: acrolein, acetaldehyde, formaldehyde, benzene, and 1,3-butadiene. The latter five pollutants are found in organic gases emitted by vehicles.

d. Current Air Quality

California is divided geographically into 15 air basins for managing the air resources of the state on a regional basis. Areas within each air basin are considered to share the same air masses and, therefore, are expected to have similar ambient air quality. Depending on whether the federal and State standards are met or exceeded, the local air basin is classified as in "attainment" or "non-attainment." Once a nonattainment area has achieved the air quality standards for a particular pollutant, it may be redesignated to an attainment area for that pollutant. The SJVAPCD is required to monitor air pollutant levels to assure the standards are met and, if they are not, to develop strategies to meet these standards.

Monitoring of ambient air pollutant concentrations is conducted by CARB, SJVAPCD, and the United States National Park Service. Some monitors are operated specifically for use in determining attainment status, while others are operated for other purposes, such as generating daily air quality forecasts. In total, SJVAPCD utilizes data from monitors operating at 29 sites in the SJVAB, two of which are in the StanCOG region. Figure 4.3-1 shows the locations of all monitoring stations in the SJVAB, including those in Stanislaus County that were in operation in 2025. The SJVAB is classified as a nonattainment area for the federal 8-hour ozone and $PM_{2.5}$ standards and State ozone, PM_{10} and $PM_{2.5}$ standards. The SJVAB is classified as in attainment (or unclassifiable/attainment) for all other State and federal standards (SJVAPCD 2025). Table 4.3-3 presents a ten-year summary of the days that the SJVAB exceeded NAAQS and CAAQS for ozone, $PM_{2.5}$, and PM_{10}. Table 4.3-4 presents the observed number of days Stanislaus County exceeded NAAQS and CAAQS for ozone, NO_2, $PM_{2.5}$, and PM_{10}.

Figure 4.3-1 SJVAB Air Quality Monitoring Stations (2025)



Source: SJVAPCD 2025

Table 4.3-3 Ten-Year SJVAB Air Quality Summary (2015-2024) for Days Over the Ozone, $PM_{2.5}$, and PM_{10} NAAQS and CAAQS

Year	Ozone 1-Hour CAAQS	Ozone 8-Hour NAAQS	Ozone 8-Hour CAAQS	$PM_{2.5}$ 24 Hour NAAQS	PM_{10} 24 Hour NAAQS	PM_{10} 24 Hour CAAQS
2015	47	97	99	53	0	121
2016	51	112	113	34	0	158
2017	48	122	126	47	8	146
2018	42	111	112	61	10	164
2019	24	96	100	28	16	130
2020	50	119	121	80	39	157
2021	41	101	104	87	16	152
2022	31	102	105	59	4	178
2023	26	73	77	33	3	146
2024	55	105	108	23	10	158

CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; PM_{10} = particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or less

Note: No aggregated summary data available for SJVAB through CARB Top-4 Summary tool post-2024

Source: CARB 2025b

Table 4.3-4 Ambient Air Quality in Stanislaus County[1]

Pollutant	2022	2023	2024
Ozone (ppm), Eight-Hour Average	0.086	0.083	0.079
Number of days of state exceedances (>0.070 ppm)	4	12	12
Number of days of federal exceedances (>0.070 ppm)	4	12	12
Ozone (ppm), Worst Hour	0.113	0.099	0.108
Number of days of state exceedances (>0.09 ppm)	1	1	1
Nitrogen Dioxide (ppm), Worst Hour[2]	0.0452	0.0470	0.0374
Number of days of state exceedances (>0.18 ppm)	0	0	0
Particulate Matter <10 microns ($\mu g/m^3$), Worst 24 Hours	88.5	97.4	88.7
Number of days of state exceedances (>50 $\mu g/m^3$)	38	26	25
Number of days of federal exceedances (>150 $\mu g/m^3$)	0	0	0
Particulate Matter <2.5 microns ($\mu g/m^3$), Worst 24 Hours	53.9	43.2	51.6
Number of days of federal exceedances (>35 $\mu g/m^3$)	10	3	5

ppm = parts per million

[1] Countywide Data not available. Data obtained from the Modesto – 14th Street Station.

[2] Data obtained from Turlock-S Minaret Street Station.

Source: CARB 2025b

4.3.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

Clean Air Act

The federal Clean Air Act (CAA) governs air quality in the United States and is administered by USEPA at the federal level. Air quality in California is also governed by regulations under the California Clean Air Act, which is administered by CARB at the state level. At the regional and local levels, local air districts such as SJVAPCD typically administer the federal and California Clean Air Acts.

USEPA is responsible for enforcing the federal CAA, which defines non-attainment areas as geographic regions designated as not meeting one or more of the national ambient air quality standards (NAAQS) that are required under the 1977 CAA and subsequent amendments. The federal CAA requires that a State Implementation Plan (SIP) be prepared for each non-attainment area and a maintenance plan be prepared for each former non-attainment area that subsequently demonstrated compliance with the standards. A SIP is a compilation of a state's air quality control plans and rules, approved by USEPA. Section 176(c) of the CAA provides that federal agencies cannot engage, support, or provide financial assistance for licensing, permitting, or approving any project unless the project conforms to the applicable SIP. The State and USEPA's goals are to eliminate or reduce the severity and number of violations of the NAAQS and to achieve expeditious attainment of these standards.

Table 4.3-5 summarizes the NAAQS and California Ambient Air Quality Standards (CAAQS). The CAAQS are more restrictive than the NAAQS for several pollutants, including the one-hour standard for carbon monoxide, the 24-hour standard for sulfur dioxide, and the 24-hour standard for PM_{10}.

Table 4.3-5 Current Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standards	California Standards
Ozone	1-Hour	–	0.09 ppm
	8-Hour	0.070 ppm	0.070 ppm
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide	Annual	0.053 ppm	0.030 ppm
	1-Hour	0.10 ppm	0.18 ppm
Sulfur Dioxide	Annual	–	–
	24-Hour	–	0.04 ppm
	1-Hour	0.075 ppm	0.25 ppm
PM_{10}	Annual	–	20 µg/m^3
	24-Hour	150 µg/m^3	50 µg/m^3
PM_{25}	Annual	9 µg/m^3	12 µg/m^3
	24-Hour	35 µg/m^3	–
Lead	30-Day Average	–	1.5 µg/m^3
	3-Month Average	0.15 µg/m^3	–
Visibility Reducing Particles	8-Hour	–	Extinction of 0.23 per kilometer[1]
Sulfates	24-Hour	–	25 µg/m^3
Hydrogen Sulfide	1-Hour	–	0.03 ppm (42 µg/m^3)
Vinyl Chloride	24-Hour	–	0.01 ppm 0.02 (26 µg/m^3)

ppm = parts per million; µg/m^3 = micrograms per cubic meter

[1] In 1989, CARB 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.

Source: CARB 2024a; USEPA 2026b

1990 Amendments to the Federal Clean Air Act

The 1990 amendments to the federal Clean Air Act included a provision to address air toxics. Under Title III of the federal Clean Air Act, USEPA establishes and enforces National Emission Standards for Hazardous Air Pollutants, which are national uniform standards oriented toward controlling particular hazardous air pollutants. Section 112(b) of the federal Clean Air Act identifies 189 "Air Toxics" (hazardous air pollutants), directs USEPA to identify sources of the 189 pollutants, and establishes a 10-year time period for USEPA to issue technology-based emissions standards for each source category. Title III of the federal Clean Air Act provides for a second phase under which USEPA is to assess residual risk after the implementation of the first phase of standards and impose new standards, when appropriate, to protect public health.

Federal Fuel Economy and Emissions Standards

Corporate Average Fuel Economy Standards

The Energy Policy and Conservation Act in 1975 established the Corporate Average Fuel Economy Standards (CAFE) standards are Federal rules established by the National Highway Traffic Safety Administration that set fuel economy standards for all new passenger cars and light trucks sold in the United States. In 2024, CAFE standards were finalized for model years (MYs) 2027 through 2031. The final rule establishes standards that require an industry-wide fleet average of approximately 49 miles per gallon (mpg) for passenger cars and light trucks.

On July 29, 2025, USEPA announced a proposal to rescind the Clean Air Act Endangerment Finding for GHGs and repeal all GHG emission standards for light-duty, medium-duty, and heavy-duty vehicles and engines pursuant to CAA Section 202(a). On February 12, 2026, USEPA finalized this action, rescinding the 2009 Endangerment Finding for GHG emissions from motor vehicles and repealing all associated federal GHG emission standards; the final rule was published February 18, 2026, and became effective April 20, 2026 (USEPA 2026c). This action removes GHG-related regulatory provisions from 40 CFR part 600 but does not affect provisions related to CAFE standards and fuel economy labeling. The rule is currently subject to ongoing litigation.

Federal Motor Vehicle GHG Emissions Standards

The federal motor vehicle GHG emissions standards were adopted by USEPA under Section 202(a) of the CAA following the 2009 Endangerment Finding, which determined that GHG emissions from motor vehicles contribute to air pollution that may endanger public health and welfare.

As mentioned above, USEPA rescinded the Endangerment Finding February 12, 2026, and published the final rule in the *Federal Register* on February 18, 2026. The EPA states that without the Endangerment Finding, it lacks statutory authority to regulate GHG emissions from motor vehicles under Clean Air Act §202(a). USEPA also finalized the repeal of all subsequent GHG emission standards from its regulations for light-, medium-, and heavy-duty on-highway vehicles and engines (USEPA 2026c). The rule is currently subject to ongoing litigation.

b. State Laws, Regulations, and Policies

California Clean Air Act

The California Clean Air Act was enacted in 1988 (California Health & Safety Code Section 39000 et seq.) and amended in 1992. The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles (see Table 4.3-5). Air basins or areas that exceed the CAAQS are designated non-attainment until compliance is disclosed in an attainment plan. In California, CARB is responsible for meeting the State requirements of the federal CAA, administering the California CAA, and establishing the California ambient air quality standards (CAAQS). The California CAA, as amended in 1992, requires all air districts in the State to endeavor to achieve and maintain the CAAQS. CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level.

Assembly Bill 32

The "California Global Warming Solutions Act of 2006," (AB 32), outlines California's major legislative initiative for reducing GHG emissions. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main state strategies for reducing GHG emissions to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 target of 431 MMT CO_2e, which was achieved in 2016. CARB approved the Scoping Plan on December 11, 2008, which included GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among others. Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since the Scoping Plan's approval.

CARB approved the 2013 Scoping Plan update in May 2014. The update defined CARB's climate change priorities for the next five years, set the groundwork to reach post-2020 statewide goals, and highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the state's longer term GHG reduction strategies with other state policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use (CARB 2014).

Senate Bill 32

On September 8, 2016, the governor signed Senate Bill (SB) 32 into law, extending the California Global Warming Solutions Act of 2006, by requiring the state to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target (CARB 2017). The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation, such as SB 1383 and SB 100 (discussed later). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with statewide per capita goals of six MT CO_2e by 2030 and two MT CO_2e by 2049. As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, sub-regional, or regional level), but not for specific individual projects because they include all emissions sectors in the state.

Assembly 1279

AB 1279, the California Climate Crisis Act, was passed on September 16, 2022, and declares the State would achieve net zero GHG emissions as soon as possible, but no later than 2045, and to achieve and maintain net negative GHG emissions thereafter. In addition, the bill states that the State would reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045.

In response to the passage of AB 1279 and the identification of the 2045 GHG reduction target, CARB published the Final 2022 Climate Change Scoping Plan in November 2022 (CARB 2022). The 2022 Scoping Plan builds upon the framework established by the 2008 Scoping Plan and previous

updates while identifying new, technologically feasible, cost-effective, and equity-focused path to achieve California's climate target. The 2022 Scoping Plan includes policies to achieve a significant reduction in fossil fuel combustion, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

The 2022 Scoping Plan assesses the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan, addresses recent legislation and direction from Governor Gavin Newsom, extends and expands upon these earlier plans, and implements a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045, as well as taking an additional step of adding carbon neutrality as a science-based guide for California's climate work. As stated in the 2022 Scoping Plan, "The plan outlines how carbon neutrality can be achieved by taking bold steps to reduce GHGs to meet the anthropogenic emissions target and by expanding actions to capture and store carbon through the state's natural and working lands and using a variety of mechanical approaches" (CARB 2022). Specifically, the 2022 Scoping Plan:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045, and a reduction in anthropogenic emissions by 85 percent below 1990 levels.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as driving principles throughout the document.
- Incorporates the contribution of natural and working lands to the State's GHG emissions, as well as their role in achieving carbon neutrality.
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits of taking action.
- Identifies key implementation actions to ensure success.

Under the Scoping Plan Scenario, California's 2030 emissions are anticipated to be 48 percent below 1990 levels, representing an acceleration of the current SB 32 target. Cap-and-Trade regulation continues to play a large factor in the reduction of near-term emissions for meeting the accelerated 2030 reduction target. Every sector of the economy will need to begin to transition in this decade to meet the GHG emissions reduction goals and achieve carbon neutrality no later than 2045. The 2022 Scoping Plan approaches decarbonization from two perspectives, managing a phasedown of existing energy sources and technologies, as well as increasing, developing, and deploying alternative clean energy sources and technology.

Senate Bill 656

In 2003, the California Legislature enacted Senate Bill (SB) 656 (Chapter 738, Statutes of 2003), codified as Health and Safety Code Section 39614, to reduce public exposure to PM_{10} and $PM_{2.5.}$ SB 656 required that, by January 1, 2005, CARB, in consultation with local air pollution control and air

quality management districts, must develop and adopt a list of the most readily available, feasible, and cost-effective control measures that could be employed by CARB and the air districts to reduce PM_{10} and $PM_{2.5}$ (collectively referred to as PM). The legislation established a process for achieving near-term reductions in PM throughout California ahead of federally required deadlines for $PM_{2.5}$ and provided new direction on PM reductions in those areas not subject to federal requirements for PM. Measures adopted as part of SB 656 complement and support those required for federal $PM_{2.5}$ attainment plans, as well as for State ozone plans. This ensures continuing focus on PM reduction and progress toward attaining California's more health protective standards. This list of air district control measures was adopted by CARB on November 18, 2004. SJVAPCD also complied with this legislation; staff developed a Particulate Matter Implementation Schedule that was adopted in December 2005 (SJVAPCD 2005).

Toxic Air Contaminant Identification and Control Act

The Toxic Air Contaminant Identification and Control Act (Assembly Bill 1807 of 1983) created California's program to reduce exposure to air toxics. The program involves a two-step process: risk identification and risk management. In the risk identification step, and upon CARB's request, the Office of Environmental Health Hazard Assessment evaluates the health effects of substances other than pesticides and their pesticidal uses. Substances with the potential to be emitted or that are currently being emitted into the ambient air may be identified as a TAC. In the risk management step, once a substance is identified as a TAC, and with the participation of local air districts, industry, and interested public, CARB prepares a report that outlines the need and degree to regulate the TAC through a control measure.

Air Toxics "Hot Spots" Information and Assessment Act

The Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill 2588) was enacted in 1987 to require stationary sources to report the types and quantities of substances identified as having a localized health risk. This act aims to ascertain health risks, notify nearby residents of significant risks, and reduce significant risks to acceptable levels. OEHHA is the lead agency for the assessment of health risks posed by environmental contaminants. OEHHA, which is an office within the California Environmental Protection Agency, aims to protect human health and the environment through scientific evaluation of risks posed by hazardous substances. In addition, OEHHA develops health-protective exposure levels for contaminants in air, water, and soil as guidance for regulatory agencies and the public. These include public health goals for contaminants in drinking water and both cancer potency factors and non-cancer reference exposure levels for the Air Toxics Hot Spots Program.

Executive Order N-79-20

Executive Order N-79-20, issued 2020, established a Statewide goal that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035 and a further goal of the State that 100 percent of medium- and heavy-duty vehicles in the State be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks.

California Building Energy Efficiency Standards

The California Code of Regulations Title 24 is referred to as the Building Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings to reduce California's energy demand. New

construction and major renovations must demonstrate their compliance with the current Energy Code through submittal and approval of a Title 24 Compliance Report to the local building permit review authority and the CEC.

Future land use projects would be subject to the 2025 California Building Energy Efficiency Standards, codified in Title 24, Part 6 of the California Code of Regulations, which took effect on January 1, 2026. These standards are designed to reduce energy consumption in residential and non-residential buildings, support California's climate goals, and improve indoor environmental quality.

Key updates to the 2025 standards include expanded requirements for heat pump technologies, electric readiness for future electrification, enhanced ventilation and indoor air quality measures, and battery storage system readiness for homes with larger electrical service capacities. These measures are expected to reduce building energy demand, lower greenhouse gas emissions, and support integration of distributed energy resources.

AB 130 of 2025 imposes a moratorium on changes to California building codes affecting residential units, including both state and local amendments, through 2031, with limited exemptions. Essentially, AB 306 would prohibit CEC or any other adopting agency from considering, approving, or adopting any proposed building standards affecting residential units, unless certain conditions are met, including that the CEC deems those changes necessary as emergency standards to protect health and safety. The 2025 Energy Code will proceed as planned with an effective date of January 1, 2026, and the 2031 Energy Code cycle is anticipated to be unaffected.

California Green Building Standards Code

The 2026 California Green Building Standards Code (CALGreen), codified in Title 24, Part 11 of the California Code of Regulations, and effective in 2025, establishes mandatory minimum environmental performance standards for newly constructed residential and non-residential buildings statewide. These standards are enforced by local jurisdictions and address key sustainability areas including energy efficiency, water conservation, material resource efficiency, and indoor environmental quality.

CALGreen also includes voluntary tiers (Appendices A4 and A5) that provide enhanced environmental performance options. These voluntary measures are intended as model provisions for jurisdictions considering above-code ordinances (also known as "reach codes") or for builders seeking additional compliance flexibility under the California Energy Code.

CARB Air Quality and Land Use Handbook and 2017 Technical Advisory

CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* recommends that local agencies avoid siting new, sensitive land uses within specific distances of potential sources of TACs, such as freeways and high-traffic roads, distribution centers, railroads, and ports (CARB 2005). Specifically, CARB recommends that local agencies avoid siting new, sensitive land uses within 500 feet of a freeway. The primary concern is the effect of diesel exhaust particulate on sensitive uses.

CARB *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways* technical advisory (2017) identifies effective strategies that planners and other land use decision-makers can implement locally and in the near-term to reduce exposure to near-roadway pollution from increased infill development while also protecting public health. These strategies complement the state's many efforts to reduce air pollution from all sources, including cars and trucks.

Diesel Risk Reduction Program

In August 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as TACs, based on data linking diesel PM emissions to increased risks of lung cancer and respiratory disease. Following the identification process, CARB was required to determine if there was a need for further control, which led to creation of the Diesel Advisory Committee to assist in the development of a risk management guidance document and risk reduction plan. In September 2000, CARB adopted the Diesel Risk Reduction Plan, which recommends control measures to reduce the risks associated with diesel PM and achieve a goal of 75 percent diesel PM reduction by 2010 and 85 percent by 2020.

CARB met its original Diesel Risk Reduction Plan goal of reducing Diesel PM emissions by 85 percent by 2020. Building on this success, CARB has adopted more ambitious targets focused on transitioning to zero-emission technologies across all sectors, including mandates for 100 percent zero-emission sales of new passenger vehicles by 2035 and full transition of on- and off-road fleets to zero emissions by 2045, with the broader aim of achieving health-protective air quality standards statewide by the mid-2030s.

Airborne Toxic Control Measures

Under the California Health and Safety Code, Division 26 (Air Resources), CARB is authorized to adopt regulations to protect public health and the environment through the reduction of TACs and other air pollutants with adverse health effects. CARB has promulgated several mobile and stationary source airborne toxic control measures (ATCMs) pursuant to this authority. For instance, effective as of July 2003, CARB approved an ATCM that limits school bus idling and idling at or near schools to only when necessary for safety or operational concerns (13 CCR Chapter 10, Section 2480). This ATCM is intended to reduce diesel PM and other TACs and air pollutants from heavy-duty motor vehicle exhaust. It applies to school buses, transit buses, school activity buses, youth buses, general public paratransit vehicles, and other commercial motor vehicles. This ATCM focuses on reducing public exposure to diesel PM and other TACs, particularly for children riding in and playing near school buses and other commercial motor vehicles, who are disproportionately exposed to pollutants from these sources. In addition, effective February 2005, CARB approved an ATCM to limit the idling of diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds, regardless of the state or country in which the vehicle is registered (13 CCR Chapter 10, Section 2485).

Drayage Truck Regulation

CARB established the Drayage Truck Regulation as part of its ongoing efforts to reduce PM and NOx emissions from diesel-fueled engines and improve air quality associated with goods movement. The purpose of this regulation is to reduce emissions and public exposure to diesel PM, NOx, and other air contaminants by setting emission standards for in-use, heavy-duty diesel-fueled vehicles.

CARB adopted the Advanced Clean Fleets Regulation (CCR Title 13, Section 2015-2015.6) in 2023, which included updated requirements for drayage trucks operating at seaports and intermodal railyards. Beginning January 1, 2024, only zero-emission drayage trucks can be newly registered in CARB's Truck Regulation Upload, Compliance, and Reporting System. Existing legacy trucks must meet annual operational and useful life requirements to remain in service, with non-compliant vehicles removed from the registry starting in 2025. By 2035, all drayage trucks operating in California must be zero-emission, supporting statewide goals to reduce diesel particulate matter,

NOx, and greenhouse gas emissions, particularly in communities disproportionately impacted by freight-related pollution.

In a January 13, 2025 letter to USEPA, CARB withdrew its request for a Clean Air Act waiver for the ACF Regulation. CARB is not enforcing the federal and private fleets portions of the ACF that require a Clean Air Act waiver, but is enforcing portions of the ACF Regulation that do not require a Clean Air Act waiver, such as the state and local government fleets portion, which will still be required to be fully electric by 2045.

Advanced Clean Trucks and Low-NOx Regulation

The Advanced Clean Trucks rule (CCR Title 13, Division 3, Chapter 1, Article 3.1) is a CARB regulation that requires medium and heavy-duty truck manufacturers to gradually increase the percentage of zero-emission vehicles they sell in the state. Effective in March 2021, the rule mandates that by 2035, 55 percent of Class 2b-3 truck sales, 75 percent of Class 4-8 straight truck sales, and 40 percent of truck tractor sales must be zero emission vehicles. The goal is to accelerate the transition to zero-emission trucks. USEPA granted the waiver request under the CAA to enact the more stringent fuel economy components of the ACT regulation on April 6, 2023. However, Public Law 119-15 enacted on June 12, 2025, disapproves of this regulation under the Congressional Review Act, retroactively revoking the state's waiver issued by USEPA under the Clean Air Act to implement the Advanced Clean Trucks regulation.

The Heavy-Duty Low-NOX Omnibus Regulation was adopted by CARB in 2021 (effective December 22, 2021; amended in May 2024), and mandates steep reductions in NO_X and PM emissions from new medium- and heavy-duty diesel and Otto-cycle engines starting with model year 2024. By full rollout, the regulation is projected to eliminate approximately 17–23 tons/day of NO_X by 2031. However, Public Law 119-17, enacted on June 12, 2025, disapproves of this regulation under the Congressional Review Act, retroactively revoking the state's waiver issued by USEPA under the Clean Air Act to implement the Advanced Clean Trucks regulation.

The implications of these laws on the State's capability to enforce its ACT and Low NOx rules are uncertain at this time, as the California Attorney filed a lawsuit challenging P.L. Nos. 119-15 and 17 on June 12, 2025. Whether this action will be successful is unknown, as is the possibility that a federal judge will issue a stay to halt the implementation of the ACT and Low NOx rules during the legal process.

Proposition 1B: Goods Movement Emission Reduction Program

The $1 billion Proposition 1B Goods Movement Emission Reduction Program is a partnership between CARB and local agencies, air districts, and seaports to quickly reduce air pollution emissions and health risk from freight movement along California's trade corridors. Local agencies apply to CARB for funding. Then those agencies offer financial incentives to owners of equipment used in freight movement to upgrade to cleaner technologies. Projects funded under this program must achieve early or extra emission reductions not otherwise required by law or regulation. As of April 2025, Executive Order G-25-093 was adopted under this program, providing modifications to the Program Guidelines for Year 5 and Year 6 locomotive, cargo handling equipment, and TRU projects.

Assembly Bill 1493

Assembly Bill (AB) 1493 (Chapter 200, Statutes of 2002), known as the "Pavley bill," amended Health and Safety Code Sections 42823 and 43018.5 requiring CARB to develop and adopt regulations that achieve maximum feasible and cost-effective reduction of GHG emissions from passenger vehicles, light-duty trucks and other vehicles used for noncommercial personal transportation in California.

Implementation of new regulations prescribed by AB 1493 required that the State of California apply for a waiver under the federal Clean Air Act. Although USEPA initially denied the waiver in 2008, USEPA approved a waiver in June 2009, and in September 2009, CARB approved amendments to its initially adopted regulations to apply the Pavley standards that reduce GHG emissions to new passenger vehicles in model years 2009 through 2016. In 2012, CARB approved the Low-Emission Vehicle III GHG regulation, which requires further reductions in passenger GHG for 2017 and subsequent vehicle model years. According to CARB, implementation of the Pavley regulations is expected to reduce fuel consumption while also reducing GHG emissions (CARB 2025).

In 2022, CARB approved the Advanced Clean Cars II rule regulating model years from 2026 to 2035. The rule establishes a year-by-year roadmap so that by 2035, 100 percent of new cars and light trucks sold in California would be zero-emission vehicles, including plug-in hybrid electric vehicles. The regulation realizes and codifies the light-duty vehicle goals set out in Governor Newsom's Executive Order N-79-20. By 2040, CARB anticipates that the rule would reduce GHG emissions from light-duty vehicles by 50 percent for a cumulative total of 395 MMT CO2e from 2026 through 2040. USEPA granted CARB its California's Clean Air Act waiver request for the Advanced Clean Cars II rule on December 18, 2024. However, Public Law 119-16 enacted on June 12, 2025, disapproves of this regulation under the Congressional Review Act, retroactively revoking the state's waiver issued by USEPA under the Clean Air Act to implement the Advanced Clean Cars II rule. The implications of this law on the State's capability to enforce its ACC II rule are uncertain at this time, as the California Attorney filed a lawsuit challenging P.L. No. 119-16 on June 12, 2025. Whether this action will be successful is unknown, as is the possibility that a federal judge will issue a stay to halt the implementation of the ACC II rule during the legal process.

c. Regional Laws, Regulations, and Policies

San Joaquin Valley Air Pollution Control District

Air Quality Management Plans

The 2022 Ozone Plan for 8-hour ozone standard is the most recent ozone attainment plan, adopted on December 15, 2022, by SJVAPCD (SJVAPCD 2022). Implementation of each of the plans has contributed to the adoption of over 600 rules and amendments aimed at reducing air pollution concentrations. These measures have substantially reduced ozone precursor pollutants, which include NO_X and ROG. It should be noted that, while not formally adopted, the SJVAPCD is currently in the process of drafting the 2026 State Implementation Plan Revisions for the California Extreme Ozone Non-attainment Areas (2026 Extreme Ozone SIP Revision), which would revise the 2022 State SIP Strategy measure commitments, aggregate emissions reduction commitments, and other elements as needed for the South Coast Air Basin, Coachella Valley, and San Joaquin Valley non-attainment areas (CARB 2026a).

The District adopted the *2024 Plan for the 2012 Annual $PM_{2.5}$ Standard* on June 20, 2024, to fulfill the remaining CAA requirements, including the final modeling analysis, attainment strategy and emission reduction commitments, reasonable further progress/quantitative milestones, and contingency measures. This Plan demonstrates expeditious attainment of the 2012 $PM_{2.5}$ standard by 2030 (SJVAPCD 2024).

The 2024 Plan for the 2012 $PM_{2.5}$ Standards is the most recent attainment plan for particulate matter adopted by SJVAPCD, for the annual $PM_{2.5}$ standard. (SJVAPCD 2024). USEPA initially designated SJVAPCD as Moderate non-attainment for the 2012 $PM_{2.5}$ standard in 2015. The District submitted the *2016 $PM_{2.5}$ Plan* to address Moderate area requirements for the 2012 $PM_{2.5}$ standard and to request to be reclassified to Serious non-attainment. USEPA approved the Moderate Plan and reclassified the District to Serious non-attainment, effective December 2021. SJVAPCD also prepared a 2018 Plan for achieving both the 24-hour and annual $PM_{2.5}$ standards (SJVAPCD 2018).

The District adopted the *Initial State Implementation Plan (SIP) Requirements for the 2012 Annual $PM_{2.5}$ Standard* on October 19, 2023, to fulfill the first portion of SIP elements required by the CAA for Serious $PM_{2.5}$ non-attainment areas, including an updated emissions inventory, precursor demonstration, and the demonstration that Best Available Control Measure (BACM) requirements continue to be satisfied in the Valley. Additionally, the District fulfilled Non-attainment New Source Review (NNSR) requirements through amendments to District Rule 2201 (New and Modified Stationary Source Review Rule) in April 2023.

Voluntary Emissions Reduction Agreements

Within the SJVAPCD, Voluntary Emissions Reduction Agreements (VERAs) are implemented through District-administered programs that allow project applicants to fund off-site emission reduction projects to offset project-related criteria pollutant emissions. These agreements are typically formalized as Emission Reduction Agreements or participation in District mitigation programs, such as the VERA program, and are designed to achieve real, surplus, quantifiable, and enforceable emission reductions within the San Joaquin Valley Air Basin (CARB 2024b).

Under CEQA, participation in SJVAPCD VERAs is not required but may be used, at the discretion of the lead agency, to reduce a project's contribution to significant or cumulatively considerable air quality impacts. Such agreements must be supported by substantial evidence demonstrating that the reductions are appropriately tied to the project's emissions and consistent with District guidance. Because VERAs are voluntary and project-specific, they are generally considered supplemental to established regulatory requirements and do not substitute for compliance with applicable District rules or CEQA significance thresholds.

Rules and Regulations

SJVAPCD has adopted numerous rules and regulations directed at improving regional air quality. The following District rules would be applicable to individual projects:

- **Rule 2201 New and Modified Stationary Source Review Rule:** Rule 2201 applies to all proposals for new or modified sources of pollution that must obtain a permit from the District. The rule requires that the proposed emissions from any such new or modified equipment be controlled with the Best Available Control Technology (BACT), and that large projects offset their increased emissions by surrendering emission reduction credits that have been generated by companies that have voluntarily reduced their emissions. Compliance with this rule must be demonstrated prior to the District issuing a permit and prior to constructing the new or modified source of pollution.

- **Rule 4102 Nuisance:** A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such person or the public or which cause or have a natural tendency to cause injury or damage to business or property.
- **Rule 8021 Earthmoving Activities:** Requires construction, demolition, excavation, extraction, and other earthmoving activities to include implementation of measures designed to limit fugitive dust emissions.
- **Rule 8041 Carryout and Trackout:** Requires owners and operators to sufficiently prevent or cleanup carryout and trackout as described in SJVAPCD Regulation VIII. The use of blower devices, or dry rotary brushes or brooms, for removal of carryout and trackout on public roads is expressly prohibited. The removal of carryout and trackout from paved public roads does not exempt an owner/operator from obtaining state or local agency permits which may be required for the cleanup of mud and dirt on paved public roads.
- **Rule 8061 Paved and Unpaved Roads:** Requires implementation of control measures and design criteria to limit fugitive dust emissions from any new or existing public or private paved or unpaved road, road construction project, or road modification project.
- **Rule 9510 Indirect Source Review (ISR):** Requires new developments expected to create a substantial amount of air pollution to incorporate on-site mitigation or emission reducing designs and practices into the project.
- **Regulation VIII Fugitive PM10 Prohibitions:** The Regulation VIII rules were adopted in November 2001, and subsequently amended in 2004 to incorporate more stringent requirements. These rules reduce fugitive dust from construction sites, earthmoving activities, parking and staging areas, open areas, agricultural operations, carryout and trackout, paved and unpaved roads, and material storage sites.
- **Rule 2010 (Permits Required):** Rule 2010 requires any person constructing, modifying, replacing, or operating equipment or processes that may emit air contaminants to obtain an Authority to Construct and a Permit to Operate from the SJVAPCD. It establishes the District's permitting framework to ensure that new or modified stationary sources comply with applicable emission standards prior to operation.
- **Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt Paving and Maintenance Operations):** Rule 4641 regulates asphalt paving and maintenance activities by limiting the use of high-VOC asphalt materials and requiring the use of lower-emission alternatives where feasible. The rule is designed to reduce reactive organic gas (ROG) emissions from paving operations, which contribute to ozone formation in the San Joaquin Valley.
- **Rule 9410 (Employer Based Trip Reduction [eTRIP]):** Rule 9410 requires certain large employers to implement trip reduction programs to reduce employee commute-related vehicle miles traveled and associated emissions. Applicable employers must prepare and implement an eTRIP plan and demonstrate ongoing compliance through surveys and reporting to the District.

d. Local Laws, Regulations, and Policies

City and county general plans within the StanCOG region contain policies to protect air quality. Listed below are the policies from the County of Stanislaus and cities in the StanCOG region applicable to air quality. Cities in the region have generally similar policies, and examples are provided in more detail below.

Stanislaus County General Plan

The County of Stanislaus has established several goals related to air quality in the 2015 Stanislaus County General Plan Circulation and Conservation/Open Space Elements (Stanislaus County 2015). Applicable goals related to air quality are as follows:

- **Circulation Element Goal 1:** Provide and maintain a transportation system throughout the County for the movement of people and goods that also meets land use and safety needs for all modes of transportation.
- **Circulation Element Goal 2:** Maintain a safe, balanced, and efficient transportation system that facilitates inter-city and interregional travel and goods movement.
- **Conservation/Open Space Element Goal 6:** Improve air quality.
- **Conservation/Open Space Element Goal 11:** Conserve resources through promotion of waste reduction, reuse, recycling, composting, ride-share programs and alternative energy sources such as mini-hydroelectric plants and transformational facilities such as waste-to-energy plants.

City of Ceres General Plan

The City of Ceres General Plan Agriculture and Natural Resources Element (City of Ceres 2018) also contains policies that pertain to air quality, including the following:

- **Policy 4.G.1 Air Quality Goals:** Cooperate with the SJVAPCD and other agencies in the SJVAB to meet regional air quality goals and achieve a consistent and effective approach to regional air quality planning and management. Coordinate with other jurisdictions and other regional agencies in the San Joaquin Valley to establish parallel air quality programs and implementation measures.
- **Policy 4.G.2 San Joaquin Valley Air Pollution District:** Support the SJVAPCD in its development of improved ambient air quality monitoring capabilities and the establishment of standards, thresholds, and rules to adequately address the air quality impacts of new development.
- **Policy 4.G.3 Air Quality Analysis:** Require major new development projects to submit an air quality analysis for review and approval, with mitigation measures to be required as determined by the City.
- **Policy 4.G.5 Reduce VMT:** Emphasize transit-oriented, walkable, compact development patterns to reduce total vehicle miles traveled.
- **Policy 4.G.6 Roadway Dust:** Avoid the siting of sensitive receptors within 500 feet of SR 99 to protect sensitive receptors from toxic air emissions from highway traffic. For those projects permitted within 500 feet from the highway, require site-specific project design improvements to reduce public health risks associated with poor air quality in these locations.
- **Policy 4.G.14 Construction Mitigation:** Require mitigation measures as a condition of obtaining permits to minimize dust and air emissions impacts from construction. Require contractors to implement dust suppression measures during excavation, grading, and site preparation activities.

City of Modesto General Plan

The City of Modesto includes policies related to air quality in the Transportation Element of the Modesto General Plan (City of Modesto 2019). Some of the policies include:

- **Policy V.A.1:** Identify gaps in the pedestrian and bicycle transportation systems and plan facilities to close those gaps.
- **Policy V.A.3:** Prepare and maintain a citywide transportation improvement program for all modes of travel, considering the development context when selecting capital improvements.
- **Policy V.B.1:** Design roadways and roadway connections to: provide a grid street system featuring short blocks and frequent connections to collectors and arterials to improve connectivity and accessibility for all modes; increase route choice; better accommodate public transit services; and reduce trip lengths, traffic congestion, and pollution.

City of Turlock General Plan

Similarly, the City of Turlock includes policies relating to air quality in the Air Quality and Greenhouse Gases Element of its General Plan (City of Turlock 2012). Some of the policies include:

- **Policy 8.1-d Transportation and Residential Density:** Designate residential land uses to be higher density than in the past in order to meet population demand and reduce total vehicle miles travelled
- **Policy 8.1-e Establish Land Use Pattern That Supports Trip Reduction:** Establish land use pattern that enables alternatives to automobile use and reduces trip lengths, including transit oriented, mixed use development and neighborhood commercial areas.

Other City General Plans

Other cities within the StanCOG region include Hughson, Newman, Oakdale, Patterson, Riverbank, and Waterford. Similar to the larger jurisdictions within the StanCOG region, the cities of Hughson, Newman, Oakdale, Patterson, Riverbank, and Waterford have adopted General Plan goals and policies that address air quality considerations through land use, circulation, transportation, conservation, and public health planning. These policies generally support reduction of mobile-source emissions, enhancement of alternative transportation modes, efficient development patterns, and compliance with SJVAPCD rules and regional air quality planning efforts. As such, local General Plans throughout the StanCOG region incorporate regulatory and policy mechanisms intended to support the attainment and maintenance of federal and State ambient air quality standards.

4.3.3 Impact Analysis

a. Methodology and Significance Thresholds

This analysis uses the guidance and methodologies recommended in the SJVAPCD's 2015 *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) (SJVAPCD 2015) to determine whether the proposed 2026 RTP/SCS impacts exceed the thresholds identified in CEQA Guidelines Appendix G.

Short-Term Emissions Methodology

Emissions from construction activities represent temporary impacts that are typically short in duration, depending on the size, phasing, and type of project. Air quality impacts can nevertheless be acute during construction periods, resulting in significant localized impacts to air quality. Quantifying construction-related emissions would be speculative at the RTP/SCS level because such emissions are dependent on the characteristics of individual development projects. However, because construction of projects under the proposed 2026 RTP/SCS would generate temporary

criteria pollutant emissions, primarily due to the operation of construction equipment and truck trips, a qualitative analysis is provided.

Long-Term Emissions Methodology

The methodology for determining the significance of air quality impacts compares baseline conditions in 2023 to the future 2049 conditions, as required in CEQA Guidelines Section 15126.2(a). The analysis of air quality also includes a comparison between the expected future conditions under the proposed 2026 RTP/SCS and the expected future conditions if the proposed 2026 RTP/SCS was not adopted ("No Project" scenario) for informational purposes only. State and federal clean air laws require that emissions of pollutants for which NAAQS or CAAQS are violated be reduced from current levels. Therefore, for Impact AQ-3, the project's long-term mobile source impacts to air quality would be considered significant if the proposed 2026 RTP/SCS would result in mobile source emissions that exceed existing levels. In this case, the pollutants of concern are ozone precursors (NO_x and ROG) and fine particulate matter, as these are the primary pollutants associated with vehicle transportation.

Projected air emissions from mobile sources were calculated using the EMFAC2021 model with data for vehicle miles traveled (VMT) from the RTP/SCS transportation analysis completed by StanCOG. Data from EMFAC outputs and StanCOG's transportation analysis were used to calculate projected vehicle emissions. The 2023 baseline scenario and 2049 scenarios also use CARB's *EMFAC2021 Off-Model Adjustment Factors to Remove the Impact of Advanced Clean Trucks, Zero-Emission Airport Shuttle, Heavy-Duty Omnibus and Warranty Phase I Regulations* guidance to incorporate off-model adjustments to remove emission factors of recently revoked federal waivers, as discussed in Section 4.2.3, *Regulatory* Setting. These adjustment factors for the 2023 baseline emissions scenario were applied per CARB recommended guidance (CARB 2026b)[3]. Calculations are available in Appendix B. Projected vehicle emissions for the year 2049 under the proposed 2026 RTP/SCS were compared to 2023 existing conditions and, for informational purposes, with future conditions under the 2049 No Project scenario.

Health Impacts

Short-term and long-term exposure to criteria pollutants and TACs may result in adverse health effects, based on the information presented in Section 4.2.1(c), *Air Pollutants of Primary Concern*. As discussed in that section, these effects may include: aggravated asthma, increases in respiratory symptoms like coughing and difficult or painful breathing, chronic bronchitis, decreased lung function, increased cancer risk, heart attack, and premature death.

The NAAQS and CAAQS are health-based standards. Therefore, in this impact analysis, if the proposed 2026 RTP/SCS would result in cumulatively considerable net increase of any criteria pollutant for which the StanCOG region is non-attainment under an applicable federal or State ambient air quality standard, it would also contribute to these adverse health effects.

SJVAPCD has determined thresholds of significance for TAC emissions from the operation of both permitted and non-permitted sources (SJVAPCD 2015). The significance threshold for long-term public health risk is set at 20 excess cancer cases in a million for cancer risk. For non-cancer risk (i.e., chronic or acute risk), the significance threshold is set at a hazard index of greater than 1.0. The health impacts of TACs are discussed separately under Impact AQ-4.

[3] Heavy-duty (HD) and inspection/maintenance (I/M) adjustments approved by USEPA for EMFAC2021 on May 6, 2026 are not incorporated in this analysis; exclusion of these adjustments represents a conservative modeling approach.

Significance Thresholds

Appendix G of the CEQA Guidelines identifies general criteria for determining whether a project's impacts would have a significant impact on air quality. StanCOG has modified the language of the second criterion to provide specific quantities of criteria pollutants that would contribute to a significant impact based on SJVAPCD thresholds (SJVAPCD 2015).

The significance thresholds used for this EIR, based on CEQA Guidelines Appendix G, are:

1. Conflict with or obstruct implementation of the applicable air quality plan;
2. 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:
    a. During construction:
        i. Emit greater than 15 tons per year of PM_{10};
        ii. Emit greater than 15 tons per year of $PM_{2.5}$;
        iii. Emit greater than 100 tons per year of CO;
        iv. Emit greater than 10 tons per year of NO_x;
        v. Emit greater than 10 tons per year of ROG; or
        vi. Emit greater than 27 tons per year of SO_x.
    b. During operations:
        i. Generate emissions of ROG that exceed 10 tons per year;
        ii. Generate emissions of NO_x that exceed 10 tons per year
        iii. Generate emissions of PM_{10} exceeding 15 tons per year;
        iv. Generate emissions of $PM_{2.5}$ exceeding 15 tons per year;
        v. Generate emissions of CO exceeding 100 tons per year; or
        vi. Generate emissions of SO_X exceeding 27 tons per year.
3. Expose sensitive receptors to substantial pollutant concentrations; and/or
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

b. Project Impacts and Mitigation Measures

This section discusses impacts and mitigation measures associated with transportation projects and the land use scenario contained within the 2026 RTP/SCS. Due to the programmatic nature of the 2026 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement projects and future projects under the land use scenario envisioned by the 2026 RTP/SCS could result in impacts as described in the following sections.

Threshold 1:	Would the project conflict with or obstruct implementation of the applicable air quality plan?

Impact AQ-1 THE PROPOSED 2026 RTP/SCS WOULD NOT CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE APPLICABLE AIR QUALITY PLAN. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Air quality plan conflicts would be significant if the 2026 RTP/SCS conflicted with the goals of the SJVAPCD's 2022 Ozone Plan or $PM_{2.5}$ plans for non-attainment pollutants, or obstructed implementation of these plans. The policies and land use patterns facilitated by the proposed 2026 RTP/SCS are projected to reduce emissions of ozone precursors and particulate matter below 2023 baseline levels (as well as the 2049 "No Project" alternative), as discussed in Impact AQ-3 (see

Table 4.3-8), which is consistent with the goals and policies of SJVAPCD's 2022 Ozone Plan. Although VMT would increase as compared to baseline levels, emissions would decrease due to increasingly fuel-efficient vehicles, improving emissions control technology, and an increased share of electric vehicle adoption. In addition, implementation of proposed transportation improvements and land use projects envisioned by the proposed 2026 RTP/SCS, which among other strategies, would improve alternative transportation options and circulation. To accommodate future growth in the region while reducing emissions, the strategy of the proposed 2026 RTP/SCS is to develop an efficient circulation network with multi-modal transportation in addition to promoting congestion management; coordinating land use, housing, and transportation systems; and providing incentives that reduce vehicle use in comparison to a future scenario in the absence of the proposed 2026 RTP/SCS. Implementation of these strategies would result in reduced overall VMT, which would reduce regional criteria air pollutant emissions and TAC emissions from mobile sources.

The goals of the SJVAPCD 2022 Ozone Plan and the 2024 $PM_{2.5}$ Plan are to reduce precursor pollutants, which include NO_X and ROG, and particulate matter pollutants within the StanCOG region. The above RTP/SCS strategies and other actions in the proposed 2026 RTP/SCS would align with the emissions reduction goals of both SJVAPCD attainment plans. Therefore, implementation of the proposed 2026 RTP/SCS would not conflict with or obstruct implementation of the applicable air quality plans, and this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 2:	Would the project 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 (construction)?

Impact AQ-2 CONSTRUCTION ACTIVITIES ASSOCIATED WITH TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2026 RTP/SCS WOULD RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE IN CRITERIA POLLUTANTS FOR WHICH THE PROJECT REGION IS IN NON-ATTAINMENT UNDER AN APPLICABLE FEDERAL OR STATE AMBIENT AIR QUALITY STANDARD. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

There are three primary sources of short-term emissions that would be generated by construction of future transportation projects under 2026 RTP/SCS. These sources include:

- Operation of construction vehicles (i.e., scrapers, loaders, dump trucks);
- The creation of fugitive dust during clearing and grading; and

- The use of asphalt or other oil-based substances during the final construction phases, which also generate nuisance odors.

The significance of daily emissions, particularly ROG and NO_X emissions, generated by construction equipment utilized to build RTP/SCS transportation improvements would depend on the quantity of equipment used and the hours of operation. The significance of fugitive dust ($PM_{2.5}$ and PM_{10}) emissions would depend upon the following factors:

- The areal extent of disturbed soils;
- The length of disturbance time;
- Whether existing structures are demolished;
- Whether excavation is involved (including the potential removal of underground storage tanks); and
- Whether transport of excavated materials offsite is necessary.

Intersection improvements, such as signalization or signal coordination, are small-scale projects and are not expected to generate significant short-term emissions. However, other RTP/SCS projects as well as future development facilitated by the SCS land use scenario may involve grading and paving, or the construction of permanent facilities. For example, substantial grading and paving would be required for roadway widening, interchange construction, and other large improvements on State Routes and regional roadways. The precise quantity of emissions would need to be determined at the time of proposed construction of a given transportation improvement or development project. When project-specific CEQA documents are prepared, these emissions would be compared to SJVAPCD's construction thresholds, as listed in Section 4.3.3(a), *Methodology and Significance Thresholds*. Although any individual transportation improvement or development project may not generate significant short-term emissions, it is probable that several projects would be under construction simultaneously, generating cumulative construction emissions that could impact air quality.

SJVAPCD construction emissions thresholds listed in Section 4.3.3(a), *Methodology and Significance Thresholds* under Threshold 2(a) would be used to determine whether construction impacts of individual projects are significant. In addition, construction equipment would be subject to the rules and regulations adopted by USEPA and CARB to reduce criteria pollutant and hazardous emissions limits from on-road vehicles and off-road equipment. For example, USEPA and CARB both have ignition diesel engine standards for non-road portable equipment, such as diesel generators and air compressors, which require the non-road equipment engines to be rated a cleaner tier by specific years, which will result in reduced emissions (CARB 2026c, USEPA 2025).

Even though these regulations exist, it cannot be assumed that projects under the proposed 2026 RTP/SCS would be constructed using the latest and lowest emitting construction equipment for a majority of their construction fleet. Therefore, short-term impacts would be significant because construction emissions could exceed SJVAPCD significance thresholds and result in cumulatively considerable net increases in $PM_{2.5}$ and PM_{10} and/or ozone precursor emissions. The following mitigation measures would reduce this impact.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2026 RTP/SCS program, where applicable, for transportation projects that result in fugitive dust and ozone precursor emissions. The County of Stanislaus and cities in the StanCOG region can and should implement these measures, where relevant to land use projects implementing the 2026 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

AQ-2(a) Application of SJVAPCD Feasible Mitigation Measures

For all projects, the implementing agency shall incorporate the most recent SJVAPCD feasible construction mitigation measures and/or technologies for reducing inhalable particles based on analysis of individual sites and project circumstances. Additional and/or modified measures may be adopted by SJVAPCD prior to implementation of individual projects under the proposed 2026 RTP/SCS; therefore, the most current list of feasible mitigation measures at the time of project implementation shall be used. The current SJVAPCD feasible mitigation measures include the following (SJVAPCD 2015):

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, tarp cover, or other suitable cover or vegetative ground cover.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
- When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
- An owner/operator of any site with 150 or more vehicle trips per day, or 20 or more vehicle trips per day by vehicles with three or more axles shall implement measures to prevent carryout and trackout.
- Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

AQ-2(b) Diesel Equipment Emissions Standards

The implementing agency shall ensure, to the maximum extent technologically, logistically, and economically feasible, that diesel construction equipment meeting the most stringent CARB emissions standards for off-road heavy-duty diesel engines is used (e.g., as of 2026, this would be Tier 4 emission standards). Where the use of the most stringent CARB emissions standards for off-

road heavy-duty diesel engines is not feasible, the next lower tier shall be used; where the use of the next lower tier is not feasible, the next lowest tier shall be used.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

AQ-2(c) Electric Construction Equipment

The implementing agency shall ensure that to the extent technologically, logistically, and economically feasible, construction equipment utilizes electricity from power poles rather than temporary diesel power generators and/or gasoline power generators.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. These mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

Significance After Mitigation

Implementation of Mitigation Measures AQ-2(a) through AQ-2(c) would reduce short-term construction emissions from individual projects and thus reduce the severity of impacts by requiring best practices for dust and exhaust emissions via readily available, lower-emitting diesel equipment, and/or equipment powered by alternative cleaner fuels (e.g., propane) or electricity, as well as on-road trucks using particulate exhaust filters. To the extent that an implementing agency requires an individual project to implement all feasible mitigation measures described above, individual project impacts may be reduced to a less than significant level. Implementation of Mitigation Measure GHG-1 would also reduce construction emissions from the proposed 2026 RTP/SCS projects. However, these mitigation measures may not be feasible or effective for all projects. Therefore, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible at the programmatic level.

Threshold 2:	Would the project 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 (Operation)?

Impact AQ-3 OPERATION OF THE PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2026 RTP/SCS WOULD RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF CRITERIA POLLUTANTS FOR WHICH THE PROJECT REGION IS NON-ATTAINMENT. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Transportation Emissions

Projected on-road vehicle emissions on the StanCOG transportation network for year 2049 under 2026 RTP/SCS conditions were compared to baseline (2023) conditions. Table 4.3-6 shows the

results of the long-term emissions analysis based on baseline and projected annual VMT for the StanCOG region.

Table 4.3-6 Regional Air Pollutant Emissions – StanCOG Region

Scenario	VMT	ROG (tons/day)	NO_X (tons/day)	$PM_{2.5}$ (tons/day)[1]	PM_{10} (tons/day)[1]
2023 Baseline	11,736,343	2.70	4.54	0.16	3.12
2049 with 2026 RTP/SCS	13,012,130	1.20	2.26	0.15	2.14
Net Change from 2023 Baseline	**1,275,787**	**(1.50)**	**(2.27)**	**(0.01)**	**(0.98)**

( ) denotes a negative number

[1] $PM_{2.5}$ and PM_{10} includes tire wear and brake wear emissions

Notes: The on-road mobile source criteria pollutant emissions estimates for 2026 RTP/SCS were calculated using CARB's EMFAC2021 emission inventory model. VMT data was provided by StanCOG.

Emission totals may not add up due to rounding. Heavy-duty (HD) and inspection/maintenance (I/M) adjustments approved by the U.S. Environmental Protection Agency (EPA) for EMFAC2021 on May 6, 2026 are not incorporated in this analysis; exclusion of these adjustments represents a conservative modeling approach.

Source: See Appendix B for EMFAC2021 modeling results

As previously noted, Stanislaus County is currently in nonattainment for federal and State $PM_{2.5}$ and ozone standards and State PM_{10} standards. As shown in Table 4.3-6, while VMT increases, emissions of ROG, NO_X, PM_{10} and $PM_{2.5}$ under the 2026 RTP/SCS would decrease as compared to the 2023 baseline.

The decrease in PM_{10}, $PM_{2.5}$, ROG and NO_X emissions is consistent with the statewide downward trend for these pollutants as a result of CARB rules designed to reduce emissions from cars and trucks. NO_X emissions are primarily generated by trucks and are expected to decrease over time due in part to the impact of CARB rules designed to reduce NO_X emissions from diesel trucks and buses. ROG emissions are primarily due to gasoline vehicles and are lower due to improvements in vehicle emission rates. Additionally, the transportation improvements and future land use scenario envisioned by the 2026 RTP/SCS, which encourages improved circulation and efficiency, are intended to increase residential and commercial land use capacity within existing transit corridors, shifting a greater share of future growth to these corridors and ultimately increasing density, improving circulation and multi-modal connections, and leading to lower per capita VMT, which would have a beneficial effect on air quality. Given this decrease in PM_{10} and $PM_{2.5}$ emissions, long-term operational impacts would be less than significant because they would not result in a cumulatively considerable net increase in a criteria pollutant for which the project region is non-attainment.

The projected reductions in PM_{10} and $PM_{2.5}$ emissions demonstrate that implementation of the 2026 RTP/SCS would contribute to regional air quality improvements rather than exacerbate existing nonattainment conditions. In addition, the 2026 RTP/SCS incorporates a range of policies and strategies designed to reduce vehicle emissions, encourage cleaner transportation options, and support sustainable land use patterns. Together, these measures would further reduce emissions of criteria air pollutants and reinforce the conclusion that cumulative operational air quality impacts would be less than significant. The 2026 RTP/SCS includes several policies that would contribute to a reduction of air pollutants. Below is a summary of the 2026 RTP/SCS goals and policies that promote improvements to air quality:

- **Goal 1:** Improve the ability of people and goods to move between desired locations, and provide a variety of modal and mobility options.

- **Goal 2:** Promote equitable access to opportunities by ensuring all populations share in the benefits of transportation improvements and are provided a range of transportation and housing choices.
- **Goal 3:** Foster job creation, business attraction, retention, and expansion by improving quality of life. Facilitate economic development and opportunities through infrastructure investments that support goods movement within and through the region, including but not limited to the county's strategic freight corridors.
- **Goal 4:** Provide a mix of land uses and compact development patterns and encourage infill development to preserve agricultural land and natural resources.
- **Goal 5:** Consider environmental impacts when making transportation investments and minimize impacts on clean air and natural resources. Support infrastructure investments that facilitate vehicle electrification and the provision of electrification infrastructure in public and private parking facilities and structures.
- **Goal 6:** Operate and maintain the transportation system to ensure public safety and security; and improve the health of residents by improving air quality and providing more transportation options.
- **Goal 7:** Maintain transportation system in a state of good repair; and protect investment by maximizing use of existing transportation facilities.

The criteria air pollutant emissions shown in Table 4.3-6 are modeled emissions based on VMT. The results do not account for some of the proposed VMT reduction strategies, such as a transportation demand management plan, telecommuting, and transit service enhancements, because these strategies are off-model reductions that cannot be included in EMFAC. However, mobile NO_x, PM_{10} and $PM_{2.5}$ emissions from the proposed 2026 RTP/SCS are expected to decrease without the inclusion of these VMT reduction strategies. As such, long-term operational impacts would be less than significant.

Other Land Use Emissions

In addition to the transportation-related air pollutant emissions shown in Table 4.3-6, land use projects envisioned by the land use scenario in the proposed 2026 RTP/SCS would also result in criteria air pollutant emissions due to sources such as architectural coatings, consumer products, fireplaces, landscaping equipment, and natural gas usage. Over the planning period, per capita emissions associated with consumer products, architectural coatings, fireplaces, landscaping equipment, and natural gas consumption are anticipated to decline, primarily as a result of increasingly stringent CARB and SJVAPCD rules and regulations. In addition, the proposed 2026 RTP/SCS would reduce per capita transportation related air pollutant emissions associated with future land use development, which would contribute to an overall reduction in per capita air pollutant emissions associated with future (2049) land use development as compared to 2023 baseline conditions. Nevertheless, the proposed land use scenario would most likely increase countywide ROG, PM_{10}, and $PM_{2.5}$ emissions based on growth forecasts, which would increase the likelihood that Stanislaus County continues to exceed the federal and State $PM_{2.5}$ and ozone standards and State PM_{10} standards for which Stanislaus County is currently in non-attainment. Also, individual land use projects could exceed the SJVAPCD operational significance thresholds as listed in Section 4.3.3(a), *Methodology and Significance Thresholds* under Threshold 2(b). Therefore, because the operational emissions generated by the proposed 2026 RTP/SCS land use scenario

would contribute to existing non-attainment conditions in the SJVAB, impacts would be potentially significant.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the proposed 2026 RTP/SCS program where applicable for transportation projects that would result in fugitive dust and ozone precursor emissions. Cities and the County can and should implement these measures, where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

AQ-3(a) PM_{10} Emissions Reduction

To help reduce regional PM_{10} emissions, StanCOG, in partnership with SJVAPCD and implementing agencies, shall:

a. Support the use of existing air quality and transportation funds and seek additional funds to continue the implementation of the CARB Carl Moyer Program, which is intended to retrofit and replace trucks and locomotives to reduce particulate matter.
b. Incentivize the reduction of mobile PM emissions from mobile exhaust and entrained PM sources such as tire wear, brake wear, and roadway dust through funding.
c. Hold forums and workshops to encourage land use projects to incorporate transportation demand management (TDM) strategies as part of the project design to reduce the number of vehicular trips across the transportation network. Potential strategies could include ridesharing, carpooling, subsidized public transit, flexible work hours, and parking management measures.

IMPLEMENTING AGENCIES AND TIMING

StanCOG and transportation project sponsors are responsible for implementing this measure. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during operation where appropriate.

AQ-3(b) Long-term Regional Operational Emissions

Implementing agencies can and should implement long-term operational emissions reduction measures. Such reduction measures include the following:

- Require that all interior and exterior architectural coatings for all developments utilize coatings following SJVAPCD Rule 4601, *Architectural Coatings*.
- Increase building envelope energy efficiency standards in excess of applicable building standards and encourage new development to achieve zero net energy use.
- Install energy-efficient appliances, interior lighting, and building mechanical systems. Encourage installation of solar panels for new residential and commercial development.
- Locate sensitive receptors more than 500 feet of a freeway, 500 feet of urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
- Locate sensitive receptors more than 1,000 feet of a major diesel rail service or railyards. Where adequate buffer cannot be implemented, implement the following:

  - Install air filtration (as part of mechanical ventilation systems or stand-alone air cleaners) to reduce indoor pollution exposure for residents and other sensitive populations in buildings that are close to transportation network improvement projects.
  - Use air filtration devices rated MERV-13 or higher.
- Plant trees and/or vegetation suited to trapping roadway air pollution and/or install sound walls between sensitive receptors and the pollution source. The vegetation buffer should be thick, with full coverage from the ground to the top of the canopy.
- Install higher efficacy public street and exterior lighting.
- Use daylight as an integral part of lighting systems in buildings.
- Use passive solar designs to take advantage of solar heating and natural cooling.
- Install light-colored "cool" roofs, cool pavements.
- Install solar and tankless hot water heaters.
- Exclude wood-burning fireplaces and stoves.
- Incorporate design measures and infrastructure that promotes safe and efficient use of alternative modes of transportation (e.g., neighborhood electric vehicles and bicycles) pedestrian access, and public transportation use. Such measures may include incorporation of electric vehicle charging stations, bicycle lanes, bicycle-friendly intersections, and bicycle parking and storage facilities.
- Incorporate design measures that promote ride sharing programs (e.g., by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading and waiting areas for ride sharing vehicles, and providing a web site or message board for coordinating rides).
- Incorporate other mitigation measures recommended by SJVAPCD.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during operation where appropriate.

Significance After Mitigation

If implementing agencies adopt and require the mitigation described above, emission impacts would be reduced because said measures reduce NO_x, $PM_{2.5}$ and PM_{10} emissions, and encourage the use of cleaner vehicles and reduce vehicle trips. Implementation of Mitigation Measures GHG-4(a) and GHG-4(b), described in Section 4.8, *Greenhouse Gas Emissions and Climate Change*, would also reduce operational emissions from the proposed 2026 RTP/SCS. However, since the implementation is not project or site specific, reductions cannot be estimated and cannot be guaranteed on a project-by-project basis. Therefore, this impact would remain significant and unavoidable. No additional feasible mitigation measures are available that would reduce daily emissions such that emissions would not contribute to existing non-attainment conditions in the SJVAB.

Threshold 3:	Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact AQ-4 THE PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2026 RTP/SCS WOULD NOT EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL PARTICULATE MATTER POLLUTANT CONCENTRATIONS. BECAUSE THE PROPOSED 2026 RTP/SCS WOULD DECREASE EXPOSURE TO ENTRAINED DUST, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Re-entrained dust refers to roadway dust that is "kicked up" by moving vehicles on paved and unpaved roadways. This type of dust would be generated by roadway activity under the proposed 2026 RTP/SCS. In addition, dust from construction activity, albeit temporary, would add to regional dust levels. The synergistic effects of road dust (typically measured as PM_{10}) with ozone and the hazardous constituents of re-entrained road dust itself (carcinogens, irritants, pathogens) may affect human health by contributing to respiratory illnesses such as asthma and allergies. Although motor vehicle emission control advances have allowed vehicle tailpipe emissions of some pollutants to decrease over the last 20 years, the number of vehicles in use and the amount of vehicle activity has continued to increase. This would suggest that re-entrained road dust has increased as well, as the amount of re-entrained dust is related to the number of vehicles on the road.

Table 4.3-7 compares total particulate emissions for baseline (2023) conditions and future 2049 conditions with implementation of the 2026 RTP/SCS.

Table 4.3-7 On-Road Mobile Source Particulate Matter Comparison

Scenario	PM_{10} Emissions (tons/day)	$PM_{2.5}$ Emissions (tons/day)
2023 Baseline	3.116	0.160
2049 with Proposed 2026 RTP/SCS	2.136	0.150
Net Change from 2023 Baseline	**(0.980)**	**(0.010)**

( ) denotes a negative number.
Source: Appendix B.

As shown in Table 4.3-7, total particulate emissions would decrease with implementation of the 2026 RTP/SCS as compared to baseline conditions. This is due to emission control advances in vehicles, which reduce particulate matter emissions. Implementation of Mitigation Measures T-2(a) and T-2(b) (outlined in Section 4.14, *Transportation*) would also reduce mobile source PM emissions by requiring implementation of VMT reducing initiatives. Such mitigation would reduce PM emissions from brake and tire wear because VMT would be reduced. For these reasons, the 2026 RTP/SCS would not expose sensitive receptors to substantial pollutant concentrations associated with re-entrained road dust, and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 3:	Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact AQ-5 THE TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL TAC CONCENTRATIONS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

As described in Section 4.3.1, *Setting*, TACs are air pollutants that pose a potential hazard to human health by causing or contributing to an increase in mortality or serious illness. Common sources of TAC include high traffic freeways and roads, gas dispensing facilities, industrial facilities, and diesel engines. DPM is classified as the primary airborne carcinogen in California. CARB reports that DPM represents about 70 percent of the potential cancer risk from vehicle travel on a typical urban freeway. To protect people from TACs and reduce exposure, CARB recommends avoiding siting new sensitive land uses, such as residences, schools, daycare centers, playgrounds, or medical facilities, within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day (CARB 2005).

According to the SJVAPCD GAMAQI, sensitive receptors are defined as people that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s). The location of sensitive receptors is needed to assess toxic impacts on public health.

Within the StanCOG region, the sensitive receptors residing close to freeways or busy roadways may experience adverse health effects beyond those typically found in urban areas. Because exposure to TACs is primarily based on local parameters (e.g., average daily traffic on local roadway segments and wind direction in relation to source and receptor), health risks adjacent to high volume roadways and transportation facilities would remain higher than regional averages.

As discussed above, the SJVAPCD significance threshold for long-term public health risk is set at 20 excess cancer cases in a million for cancer risk. For non-cancer risk (i.e., chronic or acute risk), the significance level is set at a hazard index of greater than 1.0. If a formal health risk assessment shows that a significant impact results, mitigation measures to reduce the predicted levels of toxic air pollutants from the facility to a less-than-significant level may be imposed by the lead agency.

To assess the impact of diesel emissions resulting from implementation of the proposed 2026 RTP/SCS, an analysis of on-road mobile source diesel $PM_{2.5}$ and PM_{10} emissions (primary) and diesel NO_X, SO_X, and CO (as surrogates for secondary PM_{10}) is shown in

Table 4.3-8. This table compares baseline (2023) conditions with 2049 conditions with implementation of the 2026 RTP/SCS. Projected emissions for 2049 with implementation of the 2026 RTP/SCS would result in reductions of diesel NO_X, $PM_{2.5}$, PM_{10}, SO_x, and CO emissions compared to the 2023 baseline. Because on-road diesel emissions with implementation of the 2026 RTP/SCS would decrease compared to baseline (2023) conditions, impacts related to diesel particulate matter exposure and associated health risks and nuisance odors at the regional level would be less than significant.

Table 4.3-8 On-Road Mobile Source Diesel Toxics Comparison

Scenario	Diesel $PM_{2.5}$ (tons/day)	Diesel PM_{10} (tons/day)	Diesel NO_X (tons/day)	Diesel SO_x (tons/day)	Diesel CO (tons/day)
2023 Baseline	0.040	0.042	2.920	0.015	0.797
2049 with 2026 RTP/SCS	0.030	0.032	1.739	0.014	0.744
Net Change from 2023 Baseline	**(0.010)**	**(0.010)**	**(1.182)**	**(0.001)**	**(0.053)**

Exposure to TACs is primarily based on local parameters such as average daily traffic (ADT) on local roadway segments, or wind direction in relation to source and receptor. As such, the health risks and nuisance odors adjacent to heavily trafficked roadways and transportation facilities (e.g., Interstate 5 and State Routes 99 and 132) would remain higher than regional averages.

The population residing close to freeways or busy roadways may experience adverse health effects beyond those typically found in urban areas. In the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005), CARB recommends avoiding siting new sensitive land uses, such as residences, schools, daycare centers, playgrounds, or medical facilities, within 500 feet of a freeway, urban roads with more than 100,000 vehicles per day, or rural roads with more than 50,000 vehicles per day. Examples of high capacity urban or rural roadways in the StanCOG region include Interstate 5 and State Routes 33, 99, 108, 132, and 165. California freeway studies show about a 70 percent drop-off in particulate pollution levels at 500 feet (CARB 2005). As discussed above, proximity to freeways increases cancer risk and exposure to particulate matter. Similarly, proximity to heavily travelled transit corridors and intersections would expose residents to higher levels of DPM, NO_X, SO_X, and CO.

As discussed in Chapter 2, *Project Description*, as a result of 2026 RTP/SCS policies and the proposed land use scenario, the anticipated growth pattern would facilitate improved circulation and expanded roadway networks, which could result in more people being exposed to elevated health risks and nuisance odors as compared to areas of the region more distant from such activities. The location and pattern of the proposed 2026 RTP/SCS growth would influence travel behavior. An efficient and well-maintained circulation network facilitates a reduction in individual vehicle trips and associated congestion (refer to Section 4.14, *Transportation).* Reduced congestion and vehicle trips are directly linked to reduced regional criteria air pollutant emissions and toxic air emissions from mobile sources.

Other factors contribute to the decline in contaminant emissions compared to baseline conditions, including vehicle technology, cleaner fuels and fleet turnover. However, to achieve the greatest VMT reductions from an efficient circulation network, development also must necessarily be in proximity to public transit and major roadway corridors. Although the precise location and density of such development is not known at this time, the 2026 RTP/SCS could result in new sensitive receptors sited close to existing and new TAC sources, potentially resulting in the exposure of sensitive receptors to substantial TAC concentrations and objectionable odors. Therefore, impacts related to TAC emissions would be potentially significant.

Mitigation Measures

Transportation project sponsor agencies can and should implement the following mitigation measures developed for the 2026 RTP/SCS where applicable for transportation projects. In addition, the County of Stanislaus and cities in the StanCOG region can and should implement these measures, where relevant to land use projects implementing the 2026 RTP/SCS. Project-specific

environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

AQ-5 Health Risk Reduction Measures

Transportation project sponsor agencies shall implement the following measures:

- During project-specific design and CEQA review, the potential localized particulate (PM_{10} and $PM_{2.5}$) impacts and their health risks shall be evaluated for individual projects. Localized particulate matter concentrations shall be estimated using procedures and guidelines consistent with USEPA 2015's *Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*. If required based on the project-level hotspot analysis, project-specific mitigation shall be added to the project design concept or scope to ensure that local particulate (PM_{10} and $PM_{2.5}$) emissions would not reach a concentration at any location that would cause estimated cancer risk to exceed the SJVAPCD threshold of 20 in one million. Per USEPA guidance (2015), potential mitigation measures to be considered may include but shall not be limited to: providing a retrofit program for older higher emitting vehicles, anti-idling requirements or policies, controlling fugitive dust, routing traffic away from populated zones and replacing older buses with cleaner buses. These measures can and should be implemented to reduce localized particulate impacts as needed.
- Retain a qualified air quality consultant to prepare a health risk assessment (HRA) in accordance with CARB and OEHHA requirements to determine the exposure of nearby residents to TAC concentrations.
- If impacts result in increased risks to sensitive receptors above significance thresholds, plant trees and/or vegetation suited to trapping TACs and/or sound walls between sensitive receptors and the pollution source.

In addition, consistent with the general guidance contained in CARB's *Air Quality and Land Use Handbook* (2005) and Technical Advisory *on Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways* (2017), appropriate and feasible measures shall be incorporated into project building design for land use projects including residential, school and other sensitive uses located within 500 feet (or other appropriate distance as determined by the lead agency) of freeways, heavily travelled arterials, railways and other sources of diesel particulate matter, including roadways experiencing significant vehicle delays. The appropriate measures shall include one or more of the following methods, as appliable and as determined by a qualified professional. The implementing agency shall incorporate health risk reduction measures based on an analysis of individual sites and project circumstances. These measures may include:

- Avoid siting new sensitive land uses within 500 feet of a freeway or railway.
- Require development projects for new sensitive land uses to be designed to minimize exposure to roadway-related pollutants to the maximum extent feasible through inclusion of design components including air filtration and physical barriers.
- Do not locate sensitive receptors near the entry and exit points of a distribution center.
- Locate structures and outdoor living areas for sensitive uses as far as possible from the source of emissions. As feasible, locate doors, outdoor living areas and air intake vents primarily on the side of the building away from nearby high volume roadways or other pollution source. As feasible, incorporate dense, tiered vegetation that regains foliage year-round and has a long life span between the pollution source and the project.

- Maintain a 50-foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year).
- Install, operate and maintain in good working order a central heating and ventilation (HV) system or other air take system in the building, or in each individual residential unit, that meets the efficiency standard of the MERV 13. The HV system should include the following features:
  - Installation of a high efficiency filter and/or carbon filter-to-filter particulates and other chemical matter from entering the building.
  - Use of either HEPA filters or ASHRAE 85 percent supply filters.
  - Completion of ongoing maintenance.
- Retain a qualified HV consultant or Home Energy Rating Systems rater during the design phase of the project to locate the HV system based on exposure modeling from the mobile and/or stationary pollutant sources.
- Maintain positive pressure within the building.
- Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air.
- Achieve a performance standard of at least four air exchanges per hour of recirculation. Achieve a performance standard of 0.25 air exchanges per hour of unfiltered infiltration if the building is not positively pressurized.
- Require project owners to provide a disclosure statement to occupants and buyers summarizing technical studies that reflect health concerns about exposure to highway/freeway exhaust emissions.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

Significance After Mitigation

Although implementation of the above mitigation would reduce health risks associated with TAC emissions, individual receptors may still be exposed to substantial TAC concentrations that would have significant health risk effects. Therefore, this impact remains significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.

Threshold 4:	Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Impact AQ-6 CONSTRUCTION OF THE PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2026 RTP/SCS WOULD NOT RESULT IN OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS) ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

While offensive odors rarely cause physical harm, they can be unpleasant, leading to considerable distress among the public (SJVAPCD 2015). The degree to which an odor is offensive is based on an individual's sensitivity and tolerance for said odor. Some people may find an odor acceptable (e.g.,

odors from a coffee roaster), while others may find it off-putting. Since odors are subjective, the sensory and physical response experienced by an individual varies based on their perception of the quality and intensity of the odor. Quality refers to the nature of the smell (e.g., flowery or sour) and intensity refers to the strength of the odor. Furthermore, the distance between the odor source and receptor, the wind direction, and sensitivity of the receptor can influence how the impact is perceived. Common sources of odors include landfills, agricultural uses, wastewater treatment plants, refineries, and vehicle exhaust.

Construction

Buildout under the 2026 RTP/SCS would generate oil and diesel fuel odors during construction from equipment use. The odors would be limited to the construction period and would be intermittent and temporary. Furthermore, these odors would dissipate rapidly with distance from in-use construction equipment. Accordingly, construction activities would not generate other emissions (such as those leading to odors) adversely affecting a substantial number of people. Impacts would be less than significant.

Operation

Development associated with the 2026 RTP/SCS is related to transportation improvements such as roadway widening, interchange improvements, and installation of bicycle lanes. These types of projects are not typical operational sources of odors. However, all 2026 RTP/SCS projects would be subject to SJVAPCD Rule 4102, *Nuisance*, which prohibits the discharge of air contaminants or other material that would cause injury, detriment, nuisance, or annoyance to any considerable number of persons. Furthermore, the projects would be required to adhere to local policies, zoning designations, and municipal codes that would limit odors. As discussed in Section 4.3-21, counties and cities within the StanCOG region have air quality-related policies in their General Plans that promote multi-modal transportation, electric-vehicles, and transit oriented development. These types of policies aim to reduce travel with fossil-fueled vehicles and indirectly reduce odors from vehicle exhaust. However, if offensive odors are present and become a nuisance, complaints can be filed by email or phone call with the SJVAPCD, who will then investigate the source. Because odorous emissions associated with the operation of the projects under the 2026 RTP/SCS would be regulated by local governing bodies (i.e., SJVAPCD, County of Stanislaus, and local cities), implementation of the 2026 RTP/SCS would not result in other emissions (such as odors) adversely affecting a substantial number of people. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.3.4 Cumulative Impacts

For the purposes of evaluating cumulative impacts to air quality, the geographic scope of the cumulative impacts analysis is the SJVAB, which includes the StanCOG planning region as well as Kern, Kings, Fresno, Madera, Merced, San Joaquin, and Tulare counties. Information regarding these adjoining counties can be found in Chapter 3, *Environmental Setting, 3.3.4 Approach for Cumulative Analysi*s. As detailed in Section 4.3.1(d), *Current Air Quality*, the StanCOG region is in nonattainment for federal ozone and $PM_{2.5}$ standards and State ozone, PM_{10}, and $PM_{2.5}$ standards. SJVAPCD has prepared air quality plans for both ozone and $PM_{2.5}$ to improve conditions and meet federal and State air quality standards. Because Stanislaus County is in nonattainment for these air quality

standards, a cumulative air quality impact currently exists. Any growth within Stanislaus County would contribute to existing exceedances of ambient air quality standards. SJVAPCD has prepared air quality plans for both ozone and particulate matter to address this cumulative impact, improve conditions, and meet federal and state air quality standards. As stated in the SJVAPCD GAMAQI (2015), any proposed development project that would individually have a significant air quality impact related to criteria air pollutant emissions would also be considered have a cumulatively considerable contribution to existing significant cumulative impacts related to criteria air pollutant emissions. For TACs, the SJVAPCD GAMAQI (2015) states that because impacts from TACs are localized and the thresholds of significance for TACs have been established at such a conservative level, risks over the individual thresholds of significance are also considered cumulatively significant.

Construction activities associated with transportation and land use projects under the 2026 RTP/SCS would create fugitive dust and ozone precursor emissions and have the potential to result in temporary adverse impacts on air quality. As discussed under Impact AQ-2, although any individual improvement or development project may not generate significant short-term emissions, it is probable that several projects would be under construction simultaneously, generating cumulative construction emissions that could impact air quality. Short-term impacts would be significant because construction emissions could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment. Implementation of Mitigation Measures AQ-1 for implementing agencies and AQ-2(a) through AQ-2(c) for individual projects would reduce PM and ozone precursor emissions. However, the contribution of construction emissions facilitated by the 2026 RTP/SCS to the existing significant cumulative impact would remain cumulatively considerable and unavoidable because it cannot be guaranteed that all future project-level impacts can be mitigated to a less-than-significant level.

As discussed under Impact AQ-3, regional ozone precursor emissions from on-road mobile sources would decrease by 2049 with the proposed 2026 RTP/SCS compared to baseline 2023 conditions. As a result, the long-term operational mobile source emissions under the proposed 2026 RTP/SCS would not result in a cumulatively considerable contribution to existing significant cumulative air quality impacts. However, land use operational emissions would be cumulatively considerable before and after mitigation because land use projects under the proposed 2026 RTP/SCS may contribute to an increase in ozone precursor and PM emissions. As discussed under Impact AQ-6, impacts from other emissions (such as odors) adversely affecting a substantial number of people would not be significant, and cumulative odor impacts would not be significant due to the short-term nature of construction odors and compliance with local odor prevention regulations. As discussed under Impact AQ-5, impacts from TAC emissions would be cumulatively considerable despite a decrease in TAC emissions from baseline 2025 conditions because the proposed 2026 RTP/SCS may result in the siting of sensitive receptors in close proximity to existing or new sources of TACs. Mitigation Measure AQ-5 would reduce impacts from TACs; however, it cannot be guaranteed that impacts resulting from the proposed 2026 RTP/SCS can be mitigated to a less-than-significant level. Therefore, the impact would remain cumulatively considerable.

4.4 Biological Resources

This section describes the existing biological resources within the StanCOG region and evaluates the significance of potential impacts to sensitive biological resources that would result from implementation of the proposed 2026 RTP/SCS, and feasible mitigation measures to reduce these potential impacts. Sources utilized in this discussion include data provided by the U.S. Fish and Wildlife Service (USFWS), the California Native Plant Society (CNPS), and the California Department of Fish and Wildlife (CDFW).

4.4.1 Setting

a. Vegetation Communities and Land Cover Types

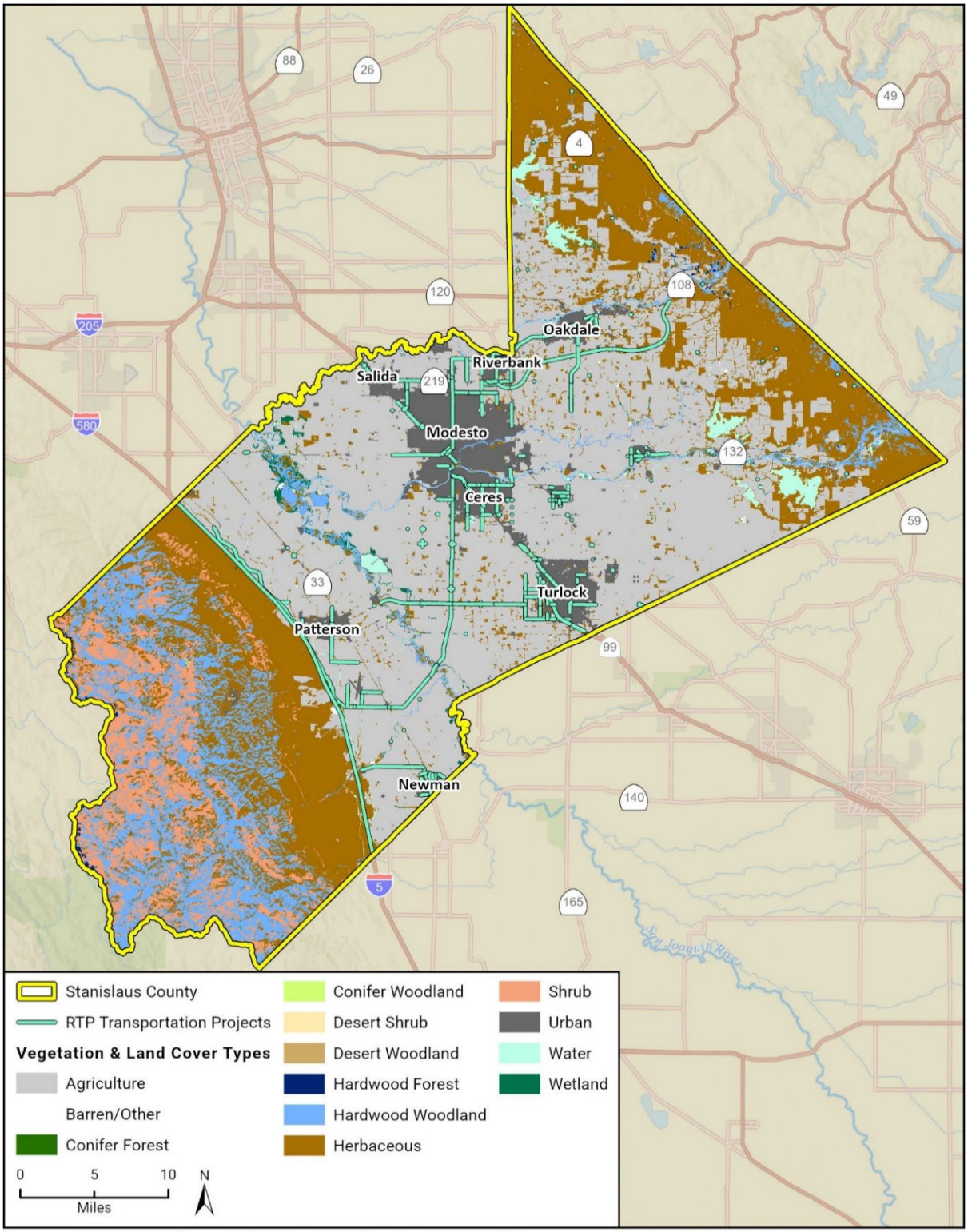
The StanCOG region contains a wide diversity of tree, shrub, and herbaceous (grasslands, pastures, certain wetlands) vegetation communities and land cover types. Twenty-eight vegetation communities and land cover types are mapped by the CDFW California Wildlife Habitat Relationships (CWHR) classification system within the StanCOG region (CDFW 2014). Of the 15 vegetation communities and land cover types, six are tree dominated, three are shrub dominated, two are herbaceous, and four are either developed, sparsely/non-vegetated or cropland (see Figure 4.4-1). Because of the scale of vegetation data at the County level, the vegetation communities and land covers presented in Figure 4.4-1 depict a broad illustration of the distribution of CWHR categories (i.e., tree, shrub, herbaceous, etc.) found within the StanCOG Region. A description of each of the vegetation communities and land covers adapted from *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988) is presented below. The vegetation classifications from *A Manual of California Vegetation, Second Edition* (Sawyer et al. 2009) that most closely resemble those classified by the CWHR are also presented in each description where possible.

It should be noted that these vegetation communities and land covers are generalized, and that site-specific variation is likely to be present. Also note that the CWHR classification system maps vegetation communities and land covers from a broad perspective and that in many areas it is expected that two or more vegetation communities and land cover types may blend with one another. As such, due to the large scale at which vegetation communities and land covers are mapped using the CWHR classification system, vernal pools, wetlands, and drainages are discussed separately in Section 4.4.1.b, utilizing additional sources of information that better capture aquatic and wetland types that are of smaller scale in the landscape. Vegetation communities and land covers which occur within populated areas can also show variation because of a greater exposure to anthropogenic influences such as the introduction of exotic plant species.

Tree-Dominated Vegetation Communities

The StanCOG region is home to a variety of hardwood, coniferous, and mixed woodlands, and forests (Figure 4.4-1). These tree-dominated vegetation communities can support diverse wildlife populations. Riparian vegetation communities are generally the terrestrial areas adjacent to freshwater bodies forming a vegetated corridor from stream edge to floodplain edge. Riparian vegetation communities occur in and along the major rivers (Stanislaus, Tuolumne, and San Joaquin Rivers), as well as along the many creeks, streams, and sloughs found in the County. Riparian areas are rich in wildlife species, providing foraging, migration, roosting, and nesting/breeding habitat.

Figure 4.4-1 Vegetation Communities and Land Cover Types in the StanCOG Region



Imagery provided by Esri and its licensors © 2026. Map created by Rincon Consultants, Inc., 2026.
Additional data provided by FRAP, 2022.

24-16018 EPS
EIRFig 4.4-1 Vegetation Communities and Land Cover Types

The following are descriptions of types of tree-dominated vegetation communities that occur within three miles of transportation projects included in the proposed 2026 RTP/SCS.

Blue Oak-Foothill Pine

This vegetation community is typically diverse in structure, both vertically and horizontally, and is composed primarily of a mix of hardwoods, conifers, and shrubs. Shrub distributions tend to be clumped, with interspersed patches of annual grassland. Woodlands of this type tend to have only small accumulations of dead and downed woody material, compared with other tree habitats in California. Blue oak (*Quercus douglasii*) and foothill pine (*Pinus sabiniana*) typically comprise the overstory of this vegetation communities, with blue oak usually most abundant. In the foothills of the Sierra Nevada, other tree species typically associated with this vegetation community are interior live oak (*Quercus wislizeni*) and California buckeye (*Aesculus californica*). In the Coast Range, associated tree species include coast live oak (*Quercus agrifolia*), valley oak (Q*uercus lobata*), and California buckeye. In rocky areas, interior live oak sometimes dominates the overstory especially on north-facing slopes at higher elevations. At lower elevations, where blue oaks make up most of the canopy, the understory tends to be primarily annual grasses and forbs. At higher elevations, where foothill pine and in some stands interior live oak comprise the canopy, the understory usually includes patches of shrubs in addition to the annual grasses and forbs. Shrub species that can be associated with this vegetation community include various species of buckbrush (*Ceanothus* spp.) and manzanita (*Arctostaphylos* spp.). Other species found in this vegetation community can include California coffeeberry (*Frangula californicus*), poison-oak (*Toxicodendron diversilobum*) and silver lupine (*Lupinus albifrons*). This vegetation community is generally located in the foothills of the Central Valley, between 500 and 3,000 feet in elevation. In the StanCOG region, blue oak-foothill pine communities occur in the foothills of the Southern Coastal Range to the west and Sierra Nevada to the east. Blue oak-foothill pine vegetation communities typically correspond to the *Quercus douglasii* Woodland Alliance or *Pinus sabiniana* Woodland Alliance as described by Sawyer et al. (2009).

Blue Oak Woodland

Generally, these woodlands have an overstory of scattered trees, although the canopy can be nearly closed. The canopy is dominated by blue oak, a broad-leaved tree species 16 to 50 feet tall, commonly forming open savanna-like stands on dry ridges and gentle slopes. Shrubs such as poison oak, California coffeeberry, buckbrush (*Ceanothus cuneatus*), and redberry (*Rhamnus crocea*) are often present but rarely extensive and often occur on rock outcrops. Typical understory is composed of an extension of annual grassland vegetation described below. In the StanCOG region, blue oak woodland communities occur in the foothills of the Southern Coastal Range to the west and Sierra Nevada to the east. Blue oak woodland typically corresponds to the *Quercus douglasii* Woodland Alliance as described by Sawyer et al. (2009).

Montane Hardwood

A typical montane hardwood is composed of a pronounced hardwood tree layer, with an infrequent and poorly developed shrub stratum, and a sparse herbaceous layer. In the Coast Range, canyon live oak (*Quercus chrysolepis*) often forms pure stands on steep canyon slopes and rocky ridge tops. It is replaced at higher elevations by scattered huckleberry oak (*Quercus vacciniifolia*) amongst an overstory of various conifers including ponderosa pine (*Pinus ponderosa*), Coulter pine (*Pinus coulteri*), California white fir (*Abies concolor*), and Jeffrey pine (*Pinus jeffreyi*). At mid-elevations, typical associates include Douglas-fir (*Pseudotsuga menziesii*), tanoak (*Notholithocarpus*

densiflorus), Pacific madrone (*Arbutus menziesii*), California black oak (*Quercus kelloggii*), and bristlecone fir (*Abies bracteata*). At lower elevations, knobcone pine (*Pinus attenuata*), foothill pine, Oregon white oak (*Quercus garryana*), and coast live oak are abundant. Understory vegetation is mostly scattered woody shrubs and a few forbs. Elevations range from 300 feet near the Pacific Ocean up to 9,000 feet. In the StanCOG region, montane hardwood communities occur primarily in the foothills of the Southern Coastal Range to the west, with a small area to the southeast in the foothills of the Sierra Nevada. Montane hardwood typically corresponds to the *Quercus chrysolepis* Forest Alliance, as described by Sawyer et al. (2009).

Montane Riparian Forest

The vegetation of montane riparian forest vegetation communities is variable and often structurally diverse. Usually, these riparian areas occur as a narrow, often dense grove of broad-leaved, winter deciduous trees with a sparse understory. This vegetation community is typically associated with montane rivers and creeks below approximately 8,000 feet. The transition between this vegetation community and adjacent non-riparian vegetation is often abrupt, due to this vegetation community typically occurring in hilly or mountainous terrain compared to other riparian community types. At high mountain elevations, more shrubs tend to occur in the understory. In the StanCOG region, montane riparian forest communities occur in the foothills of the Southern Coastal Range to the west and Sierra Nevada to the east. Montane riparian forest can correspond to a variety of alliances depending upon the dominant tree species, for instance *Populus fremontii* Woodland Alliance, and the various *Salix* sp. alliances that can regionally occur as described by Sawyer et al. (2009).

Valley Oak Woodland

This vegetation community can range in structure from savanna-like to forest-like stands. The canopies tend to be partially closed and comprised mostly of winter-deciduous, broad-leaved species such as valley oak. Dense stands typically grow in valley soils along natural drainages and decrease with the transition from lowlands to uplands. Shrubs are also associated with this valley oak woodland in lowland areas, especially along drainages. Valley oak stands with little or no grazing tend to develop a partial shrub layer of bird disseminated species, such as poison oak, toyon (*Heteromeles arbutifolia*), and California coffeeberry. Ground cover consists of a well-developed carpet of annual grasses and forbs such as wild oat (*Avena* spp.), bromes (*Bromus* spp.), and ryegrass (*Festuca perennis*). In the StanCOG region, valley oak woodland communities occur primarily in the foothills of the Southern Coastal Range to the west, with a small area to the southeast in the foothills of the Sierra Nevada. Valley oak woodland typically corresponds to the *Quercus lobata* Woodland Alliance as described by Sawyer et al. (2009).

Valley-Foothill Riparian

This vegetation community is associated with drainages, particularly those with low velocity flows, flood plains, and gentle topography. Valley-foothill riparian is generally comprised of a canopy and sub-canopy tree layers dominated by valley oak, cottonwoods (*Populus* sp.), Oregon ash (*Fraxinus latifolia*), white alder (*Alnus rhombifolia*), and boxelder (*Acer negundo*). The understory shrub layer comprises species such as willows (*Salix* spp.) wild grape (*Vitus californica*), wild rose (*Rosa californica*), blackberry (*Rubus* spp.), blue elderberry (*Sambucus cerulean*) and poison-oak. In the StanCOG region, valley-foothill riparian communities may occur anywhere rivers, streams, or other aquatic habitats are found. Valley-foothill riparian can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances may include, but

are not limited to, *Platanus racemosa* Woodland Alliance, *Populus fremontii* Woodland Alliance, and various *Salix* alliances, depending upon dominant species present (Sawyer et al. 2009).

Shrub-Dominated Vegetation Communities

Shrub-dominated vegetation communities, such as chaparral and coastal scrub, are comprised primarily of woody, evergreen shrubs and occur primarily along the foothills of the Coast Range in western Stanislaus County. The following are descriptions of shrub-dominated vegetation communities that occur within three miles of construction projects outlined in the proposed 2026 RTP/SCS.

Chamise-Redshank Chaparral

This habitat type can range from nearly pure stands of chamise (*Adenostoma fasciculatum*) or redshank (*A. sparsifolium*) to a mixture of both, however in the StanCOG Region mature chamise-redshank chaparral is single layered, generally lacking well-developed herbaceous ground cover and over story trees. Shrub canopies frequently overlap, producing a nearly impenetrable canopy of interwoven branches. In the StanCOG region, chamise-redshank chaparral communities occur primarily in the foothills of the Southern Coastal Range to the west, with a small area to the southeast in the foothills of the Sierra Nevada. Fire occurs regularly in Chamise-Redshank Chaparral and influences community structure. Chamise-redshank chaparral typically corresponds to the *Adenostoma fasciculatum* Shrubland Alliance as described by Sawyer et al. (2009).

Coastal Scrub

This vegetation community is typically dominated by shrub species with mesophytic leaves and shallow root systems. This vegetation community can differ in composition depending upon proximity to the coastline. California sagebrush (*Artemisia californica*) tends to be common in all coastal scrub habitats. In the StanCOG region, coastal scrub communities occur in the foothills of the Southern Coastal Range to the west. Coastal scrub can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances may include, but are not limited to, *Artemisia californica* Shrubland Alliance, *Baccharis pilularis* Shrubland Alliance and the *Salvia mellifera* Shrubland Alliance (Sawyer et al. 2009).

Mixed Chaparral

Mixed chaparral is a structurally homogeneous brushland type dominated by shrubs with thick, stiff, heavily cutinized evergreen leaves. Shrub height and crown cover vary with age based on the last burn, precipitation, aspect, and soil type. At maturity, cismontane mixed chaparral typically forms a dense, nearly impenetrable thicket. On nutrient-poor sites, serpentine soils or transmontane slopes, shrub cover may be considerably reduced, and shrubs may be shorter. Leaf litter and standing dead material may accumulate in stands that have not burned for several decades. In the StanCOG region, mixed chaparral communities occur primarily in the foothills of the Southern Coastal Range to the west, with a small area to the southeast in the foothills of the Sierra Nevada. Mixed chaparral can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances may include, but are not limited to, *Ceanothus cuneatus* Shrubland Alliance and the *Arctostaphylos glauca* Shrubland Alliance (Sawyer et al. 2009).

Herbaceous Dominated Vegetation Communities

These vegetation communities are generally comprised of areas dominated by grasses and other non-woody species. Most of this habitat in the StanCOG region is comprised of non-native grasslands. Native perennial grasslands, which are dominated by perennial bunch grasses, such as nodding needlegrass (*Stipa cernua*), were historically abundant within the StanCOG region but are now currently patchy in distribution. The following are descriptions of the herbaceous dominated vegetation communities that occur within three miles of construction projects outlined in the proposed 2026 RTP/SCS.

Annual Grasslands

This vegetation community is composed primarily of non-native annual herbs and forbs and typically lacks shrub or tree cover. The physiognomy and species composition of annual grasslands is highly variable and varies considerably on a temporal scale. Grazing is a common land use within this vegetation community. Common grass species include wild oats (*Avena* sp.), soft chess brome (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), and red brome (*Bromus madritensis*). Common forb species can include species of filaree (*Erodium* sp.) and bur clover (*Medicago* sp.). California poppy can also be quite common in this vegetation community. Annual grassland communities may occur anywhere throughout the StanCOG region. Annual grassland can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances may include, but are not limited to, *Avena (barbata, fatua)* Semi-Natural Stands and *Bromus (diandrus, hordeaceus)* – *Brachypodium distachyon* Semi-Natural Stands.

Pasture

Pasture vegetation is a mix of perennial and annual grasses and legumes with typically complete canopy closure. Height of vegetation varies, according to season and livestock stocking levels. Old or poorly drained pastures may have patches of weeds greater than two feet in height. The mix of grasses and legumes varies according to management practices such as seed mixture, fertilization, soil type, irrigation, weed control, and the type of livestock on the pasture. Irrigated pastures are often a permanent agricultural habitat, established on soils not suitable for other crops and where water supply is a limiting factor. Because pastures generally require flat topography, in the StanCOG region this community occurs primarily on the valley floor.

Cropland, Orchard/Vineyard Urban, and Barren Land Covers

Developed, sparsely to non-vegetated, and cropland land covers are abundant in the StanCOG region (Figure 4.4-1). Developed land covers are usually sparsely or non-vegetated and are associated with urban and agricultural areas and are highly disturbed. Species that occur in these areas are typically adapted to anthropogenic disturbance and/or comprised of ornamental species. Sparsely vegetated land covers also tend to be associated with rock outcrops and cliffs. Managed croplands are included with this group of land covers due to frequent disturbance and high levels of active management. The following are descriptions of developed, sparsely/non-vegetated, and cropland land covers that occur within three miles of construction projects outlined in the proposed 2026 RTP/SCS.

Cropland

This land cover is characterized by areas in active agriculture used to grow annual or perennial herbaceous crops and is entirely man-made. The structure of vegetation can vary in size, shape, and growing pattern. The dominant cropland use is row crops and can also include hay and grain. Subcategories of cropland classifications include, but are not limited to, dryland grain crop, irrigated hayfield crop and irrigated row and field crop, irrigated hayfield, rice, and pasture. Because croplands generally require flat topography, in the StanCOG region this community occurs primarily on the valley floor. Orchards and vineyards are classified separately. Currently, one subcategory of the cropland classification occurs within three miles of projects outlined in the proposed 2026 RTP/SCS, described below.

Irrigated Row and Field Crop. Vegetation in this land cover includes a variety of sizes, shapes and growing patterns. Cotton and asparagus can be three or four feet tall while others may be a foot or less high. Most irrigated row and field crops are grown in rows. Some may form 100 percent canopy while others may have significant bare areas between rows. Most are annuals, while others, such as asparagus and strawberries, are perennial. Annual crops are usually planted in spring and harvested in summer or fall. However, they may be planted in rotation with other irrigated crops and sometimes winter wheat or barley may be planted after harvest of a previous crop in the fall, dry farmed during the wet winter and early spring months, and then harvested in the late spring.

Orchard/Vineyard

This land cover is typically characterized by open, single-species tree- or woody vine-dominated agricultural areas. Depending on the tree or vine type and pruning methods, they are usually low, bushy plants with an open understory to facilitate harvest. Trees such as citrus, avocados, and olives are evergreen, and other common tree crops such as walnuts and stone fruits are deciduous. The understory is usually composed of low growing grasses and other herbaceous plants but may be managed to prevent understory growth totally or partially, such as along tree rows. Vineyards, comprised of grape vines, also share similar characteristics. Subcategories of orchard/vineyard classifications include, but are not limited to, deciduous orchard and evergreen orchard. Orchards generally require flat topography however vineyards may occur on foothills, therefore this community may occur anywhere in the StanCOG region. Currently one subcategory of orchard/vineyard classification occurs within three miles of projects outlined in the proposed 2026 RTP/SCS, described below:

Deciduous Orchard. Deciduous orchards are formed of deciduous trees such as almonds, apples, apricots, cherries, figs, nectarines, peaches, pears, pecans, pistachios, plums, pomegranates, prunes, and walnuts. Trees range in height at maturity; many species range from 15 to 30 feet, but may be 10 feet or less for pomegranates, figs, and some dwarf varieties of other species, while pecans and walnuts reach 60 feet or more. Crowns usually touch and are usually in a linear pattern. Spacing between trees is uniform and dependent on desired spread of mature trees. In some orchards, cover crops of resident species are present year-round or are cultivated in the spring and summer. The cover crop can be composed of either natural or planted domesticated herbaceous plants. Many orchards are treated in strips down the tree rows with herbicides.

Urban

This land cover type is also a completely man-made habitat comprising residential, commercial, and industrial developed areas. Plant species within urban areas are typically comprised of ornamental and other non-native plant species, including invasive species, with large, developed areas lacking vegetation. This community may occur anywhere in the StanCOG region, but primarily occurs on the valley floor.

Barren

This land cover is defined by the absence of vegetation. Any area with less than two percent total herbaceous vegetation cover and less than 10 percent relative cover by tree or shrub species is defined as barren (Mayer and Laudenslayer 1988). Structure and composition of the substrate is largely determined by the region of the state as well as surrounding environment. Examples of barren land cover include areas of exposed parent rock or talus. This community may occur anywhere in the StanCOG region but primarily occurs on the valley floor.

b. Drainages, Canals, and Wetlands

Drainages

Four primary watersheds occur within the StanCOG region: the North Valley Floor, San Joaquin Valley Floor, Delta-Mendota Canal, and Middle Westside watersheds. Three major rivers are also located in the StanCOG region: the Stanislaus, Tuolumne, and San Joaquin Rivers. The San Joaquin River is approximately 300 miles long. It begins in the Sierra Nevada Mountain range in Fresno County and runs northwest through the Central Valley where it meets the Sacramento River at the Sacramento-San Joaquin Delta. The Stanislaus River is a tributary of the San Joaquin River and originates in the central Sierra Nevada. The river divides San Joaquin and Stanislaus Counties. The Tuolumne River originates in Yosemite National Park and runs southwest through the central portion of the StanCOG region.

Several creeks and tributaries are associated with each one of these watersheds (Figure 4.4-2). The drainages within these watersheds are of biological importance as they provide valuable foraging habitat, breeding habitat, and movement habitat for a wide variety of animal species, including sensitive species such as steelhead – Central Valley distinct population segment (DPS) (*Oncorhynchus mykiss irideus*) and California red-legged frog (*Rana draytonii*).

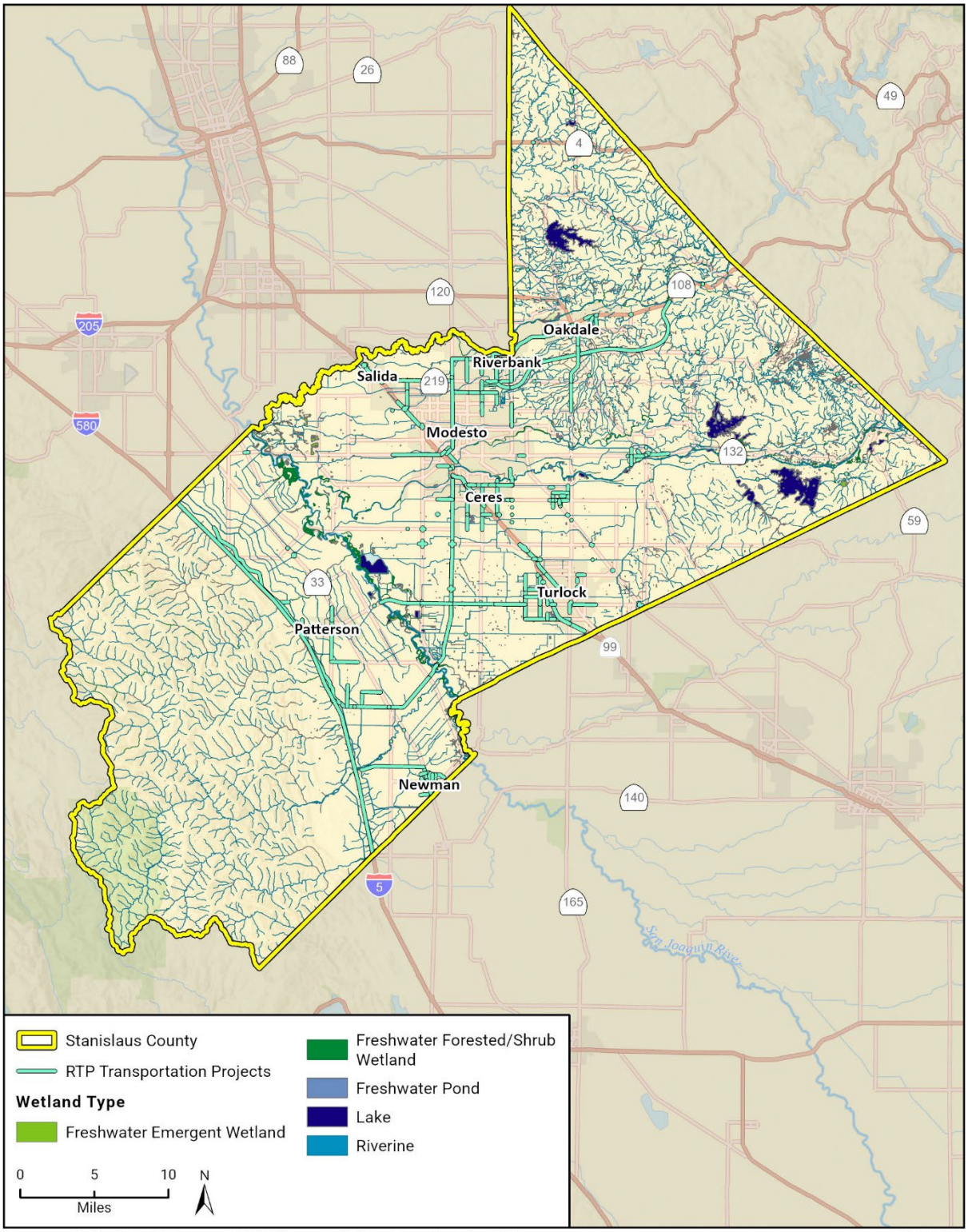
Canals

The County also contains a network of waterways that transport water through the County for use in irrigation and flood control. Major waterways include the California Aqueduct, the Hetch Hetchy Aqueduct, and the Delta-Mendota Canal.

Wetlands

Wetlands are regarded as important biological resources both because of their rarity and because they serve a variety of functional values. Several types of wetlands exist in the County, including freshwater marshes and vernal pools. In addition to vernal pools, several areas within three miles of proposed 2026 RTP/SCS projects contain wetlands mapped by the USFWS National Wetlands Inventory (NWI; USFWS 2026a). A general description of each of the classifications used in the NWI is provided below. Of those wetland types mapped by the NWI, freshwater emergent wetland, riverine and lacustrine habitats are also mapped by the CWHR.

Figure 4.4-2 Wetlands, Canals,and Drainages in the StanCOG Region



Imagery provided by Esri and its licensors © 2026. Map created by Rincon Consultants, Inc., 2026.
Additional data provided by NWI, 2026.

24-16018 EPS
EIRFig 4.4-2 Wetland and Drainages

Vernal Pools

These seasonal wetlands are small depressions that fill with water during the winter, gradually drying during the spring and becoming completely dry in the summer. These pools are found in only a few places in the world outside of California. Vernal pool vegetation is characterized by herbaceous plants that begin their growth as aquatic or semi-aquatic plants and transition to a dry land environment as the pool dries. Another suite of specially adapted plant species affiliated with vernal pools colonizes the pool margins, germinating as the pool dries. Most vernal pool plants are annual herbs. Wildlife species supported by vernal pools include the federal and state threatened California tiger salamander (*Ambystoma californiense*) and federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*).

Freshwater Emergent Wetlands

Freshwater emergent wetlands are dominated by emergent herbaceous plant species, mosses, and/or lichens. Wetlands of this type are low in salinity. Wetlands which lack vegetation can be included in this class if they are less than 20 acres, do not have an active wave-formed or bedrock shoreline feature, have a low water depth less than 6.6 feet. This wetland type is also mapped by the CWHR. Freshwater emergent wetlands are characterized by erect, rooted herbaceous hydrophytes. Dominant vegetation is generally perennial monocots such as cattails (*Typha* spp.) and rushes (*Juncus* spp.). All emergent wetlands are flooded frequently enough that the roots of the vegetation prosper in an anaerobic environment. The vegetation may vary in size from small clumps to vast areas covering several kilometers. The acreage of freshwater emergent wetlands in California has decreased dramatically since the turn of the century due to drainage and conversion to other uses, primarily agriculture.

Freshwater Forested/Shrub Wetlands

These wetlands are dominated by trees and shrubs, such as cottonwoods and willows, with emergent herbaceous plants, mosses and/or lichens in the understory. The NWI also includes within this category wetlands that lack vegetation if they also exhibit the same criteria as described for freshwater emergent wetlands. Freshwater forested/shrub wetlands are generally dominated by woody vegetation such as shrubs and trees. This wetland category also can include riparian habitats.

Freshwater Ponds

Freshwater ponds often have vegetative cover along the edges, such as trees, shrubs, emergent herbaceous plants, mosses, and/or lichens. Freshwater ponds can be man-made or natural and typically consist of an area of standing water with variable amounts of shoreline. These wetlands and deep water habitats are dominated by plants that grow on or below the surface of the water. Open water in the center of the pond is also included. This wetland type is also mapped by the CWHR and categorized as lacustrine habitat, which in the CWHR classification includes vernal pools and lakes; however, vernal pools and lakes are recognized as unique features for purposes of this EIR and thus provided a separate description.

Lakes

Lakes are a lacustrine system which includes wetlands and deep water habitats located in a topographic depression or dammed river channel. These areas tend to be greater than 20 acres. Vegetation cover within this habitat is generally less than 30 percent, surrounding deeper open water, and often occurs in the form of emergent or surface vegetation. Substrates are composed of

at least 25 percent cover of particles smaller than stones. This wetland type is also mapped by the CWHR.

Riverine

Riverine habitats are a riverine system which includes all wetlands and deep water habitats contained in natural or artificial channels that contain periodically or continuously flowing water. This system may also form a connecting link between two bodies of standing water. Substrates generally consist of rock, cobble, gravel, or sand. Features mapped as riverine wetlands in the NWI include major rivers and smaller streams and drainages as previously described. This wetland type is also mapped by the CWHR.

c. Special-Status Biological Resources

Special-Status Species

Appendix C provides a list of special-status species that are known to occur or have the potential to occur within Stanislaus County. For the purpose of this EIR, special-status species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the USFWS under the federal Endangered Species Act; those listed or proposed for listing as rare, threatened, or endangered by the CDFW under the California Endangered Species Act (CESA); animals designated as "Species of Special Concern," "Fully Protected," or "Watch List" by the CDFW. The CNDDB also provides records of other special animals that CDFW is tracking but are not currently designated as a special-status species. Because of the programmatic nature of the analysis and the duration in which the StanCOG will be implemented, these species were also included as "special-status" considering the CDFW is currently collecting data and tracking these species and therefore there is potential for their status to be elevated in the future. Additionally, special-status plants with California Rare Plant Rank (CRPR) of 1 through 4 were included. CDFW standards state that plants with a CRPR 1A, 1B, 2A and 2B may meet definitions of rare or endangered under CEQA Sections 15380 (b) and (d). By CNPS standards, the plants of CRPR Ranks 1A, 1B, 2A and 2B meet the definitions of Sections 2062 and 2067 of the California Fish and Game Code (CFGC), and are eligible for state listing, thus should be considered under CEQA §15380. According to CDFW, "In general, CNPS Rank 3 plants (plants about which more information is needed) and Rank 4 plants (plants of limited distribution) may not warrant consideration under CEQA Guidelines §15380. These plants may be included on special-status plant lists such as those developed by counties where they would be addressed under CEQA Guidelines §15380. Factors such as regional rarity vs. statewide rarity should be considered in determining whether cumulative impacts to a Rank 4 plant are significant even if individual project impacts are not." Plants with a California Rare Plant Rank (CRPR) of 1, 2, 3, and 4, which are defined as:

- **CRPR 1A** = Plants presumed extinct in California;
- **CRPR 1B.1** = Rare or endangered in California and elsewhere; seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat);
- **CRPR 1B.2** = Rare or endangered in California and elsewhere; fairly endangered in California (20-80 percent occurrences threatened);
- **CRPR 1B.3** = Rare or endangered in California and elsewhere, not very endangered in California (<20 percent of occurrences threatened or no current threats known);
- **CRPR 2** = Rare, threatened or endangered in California, but more common elsewhere;

- **CRPR 3** = Plants needing more information (most are species that are taxonomically unresolved; some species on this list meet the definitions of rarity under CNPS and CESA);
- **CRPR 4.1** = Plants of limited distribution (watch list), seriously endangered in California;
- **CRPR 4.2** = Plants of limited distribution (watch list), fairly endangered in California (20-80 percent occurrences threatened); and
- **CRPR 4.3** = Plants of limited distribution (watch list), not very endangered in California.

Species of Special Concern (SSC) is a category used by the CDFW for those species which are considered indicators of regional habitat changes or are considered to be potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the Fish and Game Code. The SSC category is intended by the CDFW for use as a management tool to include these species into special consideration when decisions are made concerning the development of natural lands, and these species are considered sensitive as described under the CEQA Appendix G questions.

Queries of the USFWS Information, Planning and Conservation System (IPaC; USFWS 2026b), the CDFW California Natural Diversity Database (CNDDB) (CDFW 2026a), and CNPS *Online Inventory of Rare, Threatened and Endangered Plants of California* (CNPS 2026) were conducted. These queries were conducted to obtain comprehensive information regarding state and federally listed species considered to have potential to occur within the StanCOG region.

The StanCOG region is home to several species protected by federal and state agencies. Important animal species can be found in a variety of habitats the StanCOG region hosts. The CNDDB (CDFW 2026a), CNPS (2026), and USFWS IPaC (2026b) together list 98 special-status plant and animal species (47 plant species and 51 animal species) that occur or have potential to occur within the StanCOG region. The status and habitat requirements of those species are presented in Appendix C as Tables C-1 and C-2 respectively.

In addition, although not listed in the CNDDB, mountain lions (*Puma concolor*) are legally classified as "specially protected species." In July 2019, the Center for Biological Diversity petitioned CDFW to list mountain lions as threatened under the CESA within a proposed evolutionarily significant unit (ESU) located in Southern California and along the central coast of California. The California Fish and Game Commission voted to list the Southern California and Central Coast mountain lion ESU as threatened on February 12, 2026. Mountain lions inhabit diverse habitats across most of California and can be found wherever deer are present, which includes the foothills and mountainous areas within the StanCOG region.

Sensitive Natural Communities and Critical Habitat

Several natural communities considered sensitive by the CDFW occur within the StanCOG region (CDFW 2026a). The CNDDB lists seven natural communities that occur with the StanCOG region, all of which are mapped in the vicinity of proposed 2026 RTP/SCS projects. The Sensitive Natural Communities List in the CNDDB is not currently maintained and no new information has been added in several years. As such, the CDFW maintains a List of Vegetation Alliances and Associations[1]

[1] CDFW classifies vegetation at the two finest levels of alliance and association. The alliance is defined by plant species composition, habitat conditions, physiognomy, and diagnostic species; at least one of the diagnostic species is typically found in the uppermost or dominant stratum (Jennings et al. 2009). The association is the most detailed classification level and reflects more specific characteristics of vegetation such as finer-level differences in species composition, topography, soils, substrate, climate, hydrology, and disturbance regime (FGDC 2008). Unlike alliances, associations often recognize two or more diagnostic species found in different vegetation layers (Sawyer et al. 2009).

(CDFW 2025. According to the CDFW's Vegetation Program, Alliances with State ranks of S1-S3 are considered to be imperiled, and thus, potentially of special concern.

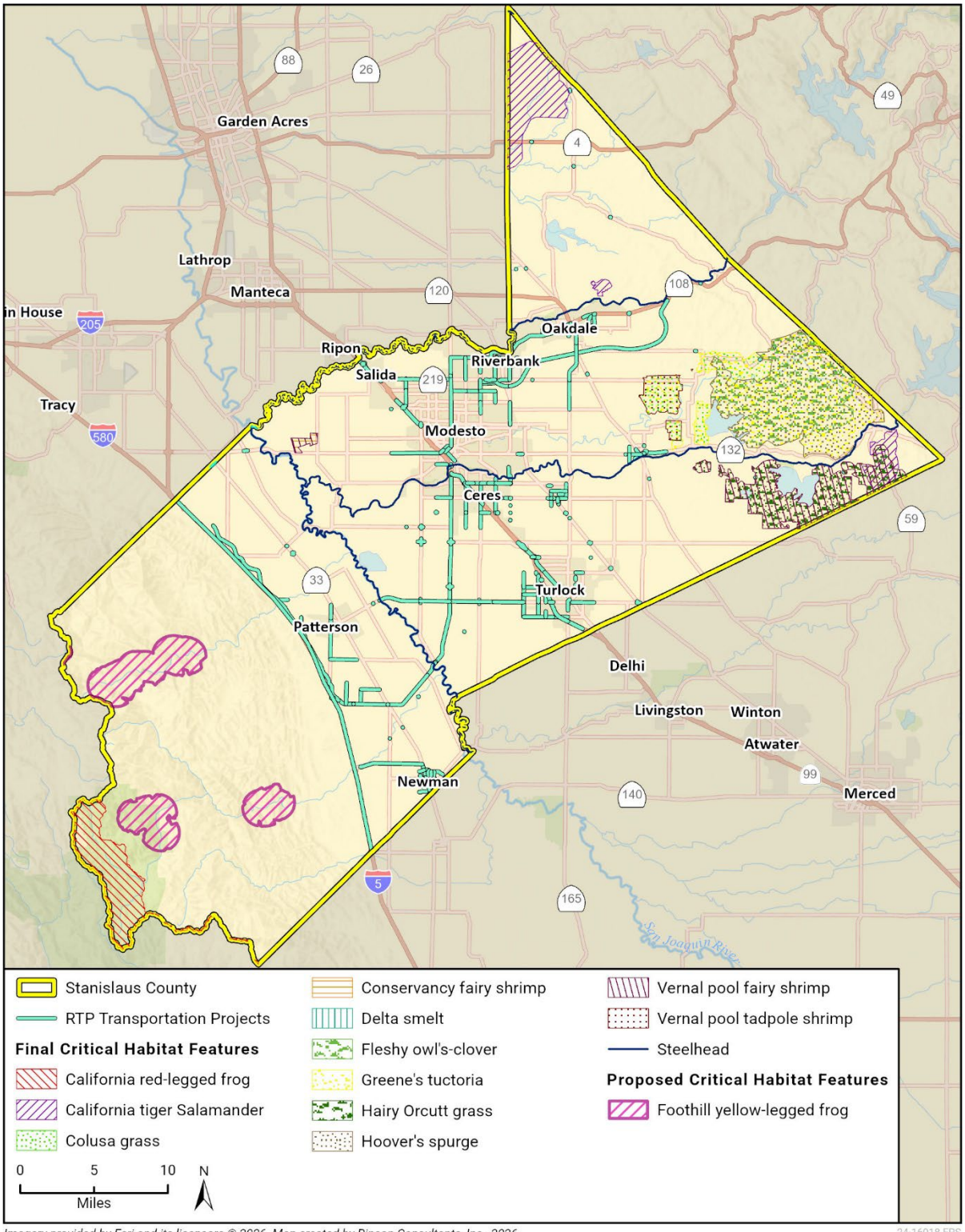
Within the StanCOG region naturally occurring vegetation communities dominated by native species are likely to be considered sensitive if they have a restricted range or have been largely degraded by non-native invasive species or development. Several blue oak alliances are considered sensitive natural communities and may occur in blue oak-foothill pine and blue oak woodland communities. Many alliances associated with montane hardwood communities are also considered sensitive, including canyon live oak, ponderosa pine, Coulter pine, Jeffry pine, California white fir, Douglas fir, tanoak, and Pacific madrone. Chamise-redshank chaparral and mixed chaparral may also contain alliances considered sensitive by CDFW, including, chamise, toyon, and Melica (*Melica torreyana*). Additionally, many coastal scrub communities are considered sensitive, including black sage and California buckwheat alliances (CDFW 2025).

Riparian habitats are generally considered sensitive by CDFW, including many willow (*Salix* sp.), California sycamore, and Fremont cottonwood alliances (CDFW 2025).

Because annual grassland communities in the StanCOG region, and throughout the Central Valley, are typically comprised of non-native species, this vegetation community is not likely to be considered sensitive by CDFW. Similarly, croplands and landscaped vegetation are also not considered sensitive.

Federally designated critical habitat for 13 species also occurs in the StanCOG region (Figure 4.4-3). These sensitive communities and critical habitats are also listed in Table 4.4-1. Certain proposed 2026 RTP/SCS projects occur in federally designated critical habitats for five species, as indicated in Table 4.4-1.

Figure 4.4-3 Critical Habitats in the StanCOG Region



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Additional data provided by USFWS, 2026; NMFS, 2026.

24-16018 EPS
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Table 4.4-1 Sensitive Communities and Critical Habitats Documented within the StanCOG Region

Sensitive Communities
Coastal and Valley Freshwater Marsh
Elderberry Savanna
Great Valley Cottonwood Riparian Forest
Great Valley Mixed Riparian Forest
Great Valley Oak riparian Forest
Northern Hardpan Vernal Pool
Sycamore Alluvial Woodland
Critical Habitats
California red-legged frog (*Rana draytonii*)
California tiger salamander (*Ambystoma californiense*)
Colusa grass (*Neostapfia colusana*)*
Conservancy fairy shrimp (*Branchinecta conservatio*)
Delta smelt (*Hypomesus transpacificus*)
Fleshy owl's-clover (*Castilleja campestris ssp. succulenta*)*
Foothill yellow-legged frog (*Rana boylii*) Proposed Critical Habitat
Greene's tuctoria (*Tuctoria greenei*)*
Hairy orcutt grass (*Orcuttia pilosa*)
Hoover's spurge (*Chamaesyce hooveri*)*
Vernal pool fairy shrimp (*Branchinecta lynchi*)
Vernal pool tadpole shrimp (*Lepidurus packardi*)
Steelhead - Central Valley DPS*

*Indicates that some proposed 2026 RTP/SCS projects are located within this species designated critical habitat.

Sources: CNDDB (CDFW 2026a); USFWS IPaC (2026b; 2026c), NMFS (2026)

Wildlife Movement Corridors

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Others may be important as dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network.

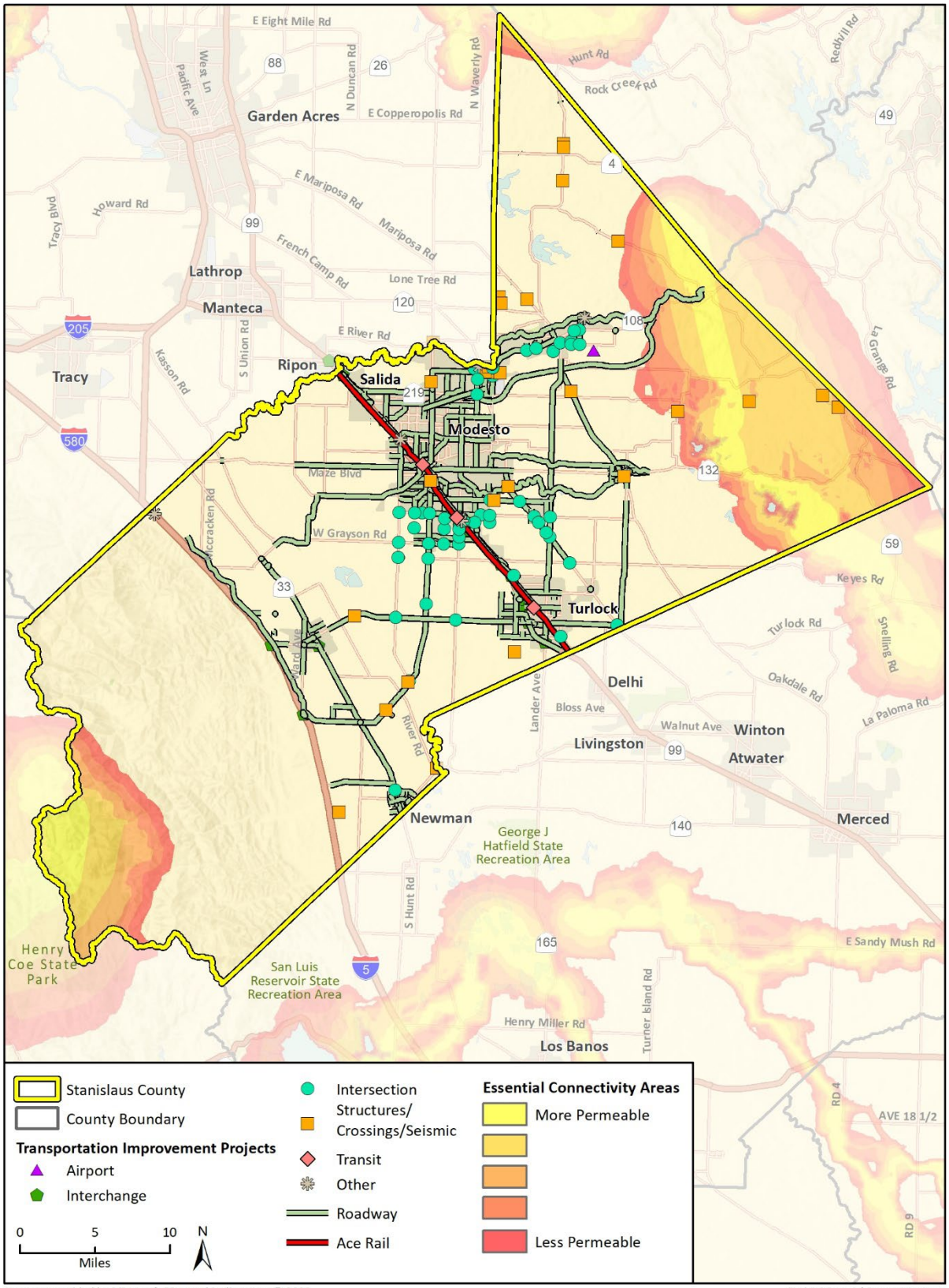
The habitats within the link do not necessarily need to be the same as the habitats that are being linked. Rather, the link merely needs to contain sufficient cover and forage to allow temporary inhabitation by ground-dwelling species. Typically, habitat linkages are contiguous strips of natural areas, though dense plantings of landscape vegetation can be used by certain disturbance-tolerant species. Depending upon the species using a corridor, specific physical resources (such as rock outcroppings, vernal pools, or oak trees) may need to be located within the habitat link at certain intervals to allow slower-moving species to traverse the link. For highly mobile or aerial species,

habitat linkages may be discontinuous patches of suitable resources spaced sufficiently close together to permit travel along a route in a short period of time.

Wildlife movement corridors can be both large and small scale. Essential Connectivity Areas (ECA) as mapped in the report *California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California* (Spencer et al. 2010) represents connectivity at the state level. ECAs are regions in which land conservation and management actions should be prioritized to maintain and enhance connectivity between areas of high ecological importance. ECAs are mapped based on coarse ecological condition indicators, rather than the needs of particular species and thus serve the majority of species in each region. It is important to recognize that even areas outside of Natural Landscape Blocks and ECAs support important ecological values and should not be immediately discounted as lacking conservation value without further review.

The mountainous regions of the StanCOG region likely support wildlife movement on a regional scale while riparian corridors, waterways, flood control channels, contiguous habitat and upland habitat on levees may provide more local scale opportunities for wildlife movement throughout the County. The CDFW BIOS (2026b) mapped two ECAs within the StanCOG region (see Figure 4.4-4). One is in the western portion of the County in the Diablo Range. The other is located near the foothills of the Sierra Nevada in the eastern edge of the StanCOG region. Five important movement corridors are also identified from the report, *Missing Linkages: Restoring Connectivity to the California Landscape* (Penrod et al. 2000). Three are associated with rivers and watercourses, including the San Joaquin River, Tuolumne River, and Stanislaus River. The remaining two movement corridors are associated with the foothill regions of the Diablo and Sierra Nevada Ranges. These areas are identified as important movement corridors for species such as San Joaquin kit fox, riparian brush rabbit, steelhead, Chinook salmon, riparian birds, and other small carnivores. Additionally, the western portion of the StanCOG region extends into the northern Diablo Mountain range which may serve as a movement corridor for the state provisionally protected Southern California/Central Coast ESU of mountain lion.

Figure 4.4-4 Essential Connectivity Areas in the StanCOG Region



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Additional data provided by Stanislaus County and CDFW, 2022.

Fig 4.4-4 Essential Connectivity Areas

4.4.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

Endangered Species Act

Under the federal ESA, authorization is required to "take" a listed species. Take is defined under ESA Section 3 as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Under federal regulation (50 CFR Sections 17.3, 222.102); "harm" is further defined to include habitat modification or degradation where it would be expected to result in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Critical habitat is a specific geographic area(s) that is essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. ESA Section 7 outlines procedures for federal interagency cooperation to conserve federally listed species and designated critical habitat.

Section 7(a)(2) of ESA and its implementing regulations require federal agencies to consult with USFWS or National Marine Fisheries Service (NMFS) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of critical habitat. For projects where federal action is not involved and take of a listed species may occur, the project proponent may seek to obtain an incidental take permit under ESA Section 10(a). Section 10(a) allows USFWS to permit the incidental take of listed species if such take is accompanied by a habitat conservation plan (HCP) that includes components to minimize and mitigate impacts associated with the take.

USFWS and NMFS share responsibility and regulatory authority for implementing ESA (7 USC Section 136, 16 USC Section 1531 et seq.).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act provides that it is unlawful, except as permitted by regulations, "to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, […] any migratory bird, or any part, nest, or egg of any such bird" (16 USC Section 703(a)). The Bald and Golden Eagle Protection Act is the primary law protecting eagles, including individuals and their nests and eggs. The USFWS implements the Migratory Bird Treaty Act (16 United States Code [USC] Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668). Under the Act's Eagle Permit Rule (50 CFR 22.26), USFWS may issue permits to authorize limited, non-purposeful take of bald eagles and golden eagles.

Section 10 of the River and Harbors Act

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the Secretary of the Army, acting through the U. S. Army Corps of Engineers (USACE), for the construction of any structure in or over any navigable water of the United States. Regulated activities include dredging or disposal of dredged materials, excavation, filling, rechannelization and construction of any structure or any other modification of a navigable water of the United States.

Clean Water Act

Under Section 404 of the Clean Water Act, the USACE, with EPA oversight, has authority to regulate activities that result in discharge of dredged or fill material into wetlands or other "waters of the United States." Perennial and intermittent creeks are considered waters of the United States if they are hydrologically connected to other jurisdictional waters. In achieving the goals of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) seeks to avoid adverse impacts and offset unavoidable adverse impacts on existing aquatic resources. Any discharge of dredged or fill material into jurisdictional wetlands or other jurisdictional "waters of the United States" would require a Section 404 permit from the USACE prior to the start of work. Typically, when a project involves impacts to waters of the United States, the goal of no net loss of wetlands is met by compensatory mitigation; in general, the type and location options for compensatory mitigation should comply with the hierarchy established by the Corp/EPA 2008 Mitigation Rule (U.S. Environmental Protection Agency 2026) (in descending order): (1) mitigation banks; (2) in-lieu fee programs; and (3) permittee-responsible compensatory mitigation. Also, in accordance with Section 401 of the Clean Water Act, applicants for a Section 404 permit must obtain water quality certification from the appropriate Regional Water Quality Control Board (RWQCB).

b. State Laws, Regulations, and Policies

Endangered Species Act and Fully Protected Species

CESA (California Fish and Game Code (CFGC) Section 2050 et. seq.) prohibits take of State-listed threatened and endangered species without a CDFW incidental take permit. Take under CESA is restricted to direct harm of a listed species and does not prohibit indirect harm by way of habitat modification.

Protection of fully protected species is described in CFGC Sections 3511, 4700, 5050 and 5515. These statutes prohibit take or possession of fully protected species. Incidental take of fully protected species may be authorized under an approved Natural Community Conservation Plan (NCCP).

California Fish and Game Code Sections 3503, 3503.5 and 3511

CFGC sections 3503, 3503.5 and 3511 describe unlawful take, possession, or destruction of birds, nests, and eggs. Fully protected birds (CFGC Section 3511) may not be taken or possessed except under specific permit. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs.

Oak Woodlands Conservation Act

CFGC Sections 1360 through 1372 comprise The Oak Woodlands Conservation Act (CFGC Sections 1360 through 1372) was enacted to protect oak woodland habitats that were being diminished by development, firewood harvesting, and agricultural conversions. The Oak Woodlands Conservation Program was established because of the act and is intended to provide project funding opportunities for private landowners, conservation organizations, and cities and counties to conserve and restore oak woodlands. The program authorizes the Wildlife Conservation Board to purchase oak woodland conservation easements and provide grants for land improvements and oak restoration efforts. Section 21083.4 of CEQA requires counties to determine if a project within their jurisdiction may result in conversion of oak woodlands that would have a significant adverse effect

on the environment. If the lead agency determines that a project would result in a significant adverse effect on oak woodlands, mitigation measures to reduce the significant adverse effect of converting oak woodlands to other land uses are required.

Native Plant Protection Act

CDFW also has authority to administer the Native Plant Protection Act (NPPA) (CFGC Section 1900 et seq.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Under Section 1913(c) of the NPPA, the owner of land where a rare or endangered native plant is growing is required to notify the department at least 10 days in advance of changing the land use to allow for salvage of the plant(s).

Section 1600 et seq. of the California Fish and Game Code

Section 1600 et seq. of the CFGC prohibits, without prior notification to CDFW, the substantial diversion or obstruction of the natural flow of, or substantial change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. For these activities to occur, the CDFW must receive written notification regarding the activity in the manner prescribed by the department and may require a lake or streambed alteration agreement. Lakes, ponds, perennial, and intermittent streams and associated riparian vegetation, when present, are subject to this regulation.

Natural Community Conservation Planning Act

The NCCP Act was established by the California Legislature, is directed by the CDFW, and is implemented by the state, as well as public and private partnerships to protect habitat in California. The NCCP Act takes a regional approach to preserving habitat. An NCCP identifies and provides for the regional protection of plants, animals, and their habitats, while allowing compatible and appropriate economic activity. Once an NCCP has been approved, CDFW may provide take authorization for all covered species, including fully protected species, Section 2835 of the CFGC.

Porter-Cologne Water Quality Control Act

The State Water Resources Control Board and each of nine local RWQCBs has jurisdiction over "waters of the State" pursuant to the Porter-Cologne Water Quality Control Act which are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. The State Water Resources Control Board adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The Procedures consist of four major elements: 1) a wetland definition; 2) a framework for determining if a feature that meets the wetland definition is a water of the state; 3) wetland delineation procedures; and 4) procedures for the submittal, review, and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities (State Water Resources Control Board 2026).

California Streets and Highways Code Section 156.3

Assessments and remediation of potential barriers to fish passage for transportation projects using State or federal transportation funds are required. Such assessments must be conducted for any

projects that involve stream crossings or other alterations and must be submitted to the CDFW. New projects must be constructed so that they do not present a barrier to fish passage.

Senate Bill 790

Senate Bill 790 of 2021 added Fish and Game Code Sections 1955–1958, authorizing CDFW to create and approve compensatory mitigation credits for wildlife connectivity actions, including structures such as wildlife overpasses and underpasses designed to improve habitat connectivity where movement is impeded by infrastructure. These credits may be used to satisfy state or federal mitigation requirements and are supported by CDFW-adopted Wildlife Connectivity Advance Mitigation Guidelines, which establish criteria and processes for evaluating and crediting connectivity improvements (CDFW 2026d).

c. Local Laws, Regulations, and Policies

Stanislaus County General Plan

The Stanislaus County 2015 General Plan Conservation and Open Space Element establishes goals, policies, and implementation measures to ensure the conservation and management of natural resources and the preservation of open space. These provisions are intended to encourage the protection and preservation of natural and scenic areas throughout the County while also protecting fish and wildlife species and their habitats, thereby maintaining the County's ecological integrity and scenic qualities.

City of Ceres General Plan

City of Ceres General Plan 2035 provides several goals and policies intended to promote the preservation of biological resources. These provisions support growth that improves quality of life while protecting, restoring, and enhancing habitats and wildlife corridors to sustain viable populations of fish and wildlife species. The General Plan also emphasizes the protection of environmentally sensitive lands and special-status plant and animal communities, as well as the management and enhancement of the City's urban tree canopy as a valuable community resource. In addition, the City of Ceres Tree Protection Ordinance (Municipal Code Chapter 12.17) includes protections for street trees and trees in City parks.

City of Modesto General Plan

The Environmental Resources, Open Space and Conservation and Community Development Policies of the Modesto General Plan identifies policies intended to identify and preserve biological resources. Two sets of policies apply to, on the one hand, the city's Downtown Area and Baseline Developed Area, and on the other, to the Planned Urbanizing Area. The General Plan's Open Space framework identifies key categories of open space, including areas for the preservation of natural resources such as rivers, streams, and habitat corridors. In Modesto, this includes the Stanislaus River, Tuolumne River, and Dry Creek, which are planned for protection and enhancement as regional park and greenway resources that support habitat conservation and recreational opportunities. Additionally, the City's River Greenway Program recognizes State jurisdiction and public trust protections along these waterways. The City of Modesto Tree Protection Ordinance (Municipal Code Chapter 7) further supports biological resource preservation by protecting street trees and requiring City authorization for their removal or alteration.

City of Turlock General Plan

The Turlock General Plan's Conservation Element includes policies intended to protect and enhance biological resources within the city. These policies aim to promote increased biological diversity, including the protection and expansion of urban forest resources such as street trees, and require sensitive site planning to preserve mature trees, natural vegetation, and existing habitat features during development. The General Plan also establishes environmental review procedures to address special-status species, including requirements for pre-construction biological surveys and the identification and protection of nesting habitat through appropriate buffers and mitigation measures. Additional protections are provided for sensitive species such as the Swainson's hawk through consultation, avoidance, and habitat mitigation strategies. The City of Turlock Municipal Code (Chapter 7-7) further supports these efforts by establishing permitting, planting and maintenance requirements for street trees.

Other City General Plans

The cities of Hughson, Newman, Oakdale, Patterson, Riverbank, and Waterford have developed General Plans, which guide development and growth within each City's jurisdiction or sphere of influence. These plans emphasize the protection of sensitive habitats, conservation of natural resources, maintenance of water quality, and enhancement of urban and natural landscapes. Several cities, including Hughson, Oakdale, and Riverbank, include policies specifically focused on protecting biological resources and open space areas, while others emphasize water resource protection and habitat conservation. In addition, each city has adopted tree protection ordinances, street tree plans, and significant tree preservation requirements that establish permitting, planting, maintenance, and removal standards for trees within public and private areas.

4.4.3 Impact Analysis

a. Methodology and Significance Thresholds

Data used for this analysis includes aerial photographs, topographic maps, and data on special-status species and sensitive habitat information obtained from the CDFW CNDDB (2026a), CDFW BIOS (2026b), CWHR (CDFW 2014), CNPS online *Inventory of Rare and Endangered Plants of California* (2026), and the USFWS IPaC (2026b). The USFWS NWI (2026a) and Critical Habitat Mapper (2026c) were also queried. Potential areas of disturbance associated with construction projects or land use development as discussed in the proposed 2026 RTP/SCS, were compared to the identified biological resource occurrences to determine whether an impact may occur.

Appendix G of the *CEQA Guidelines* identifies the following criteria for determining whether a project would have any significant impacts to biological resources:

1. 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 CDFG or USFWS;
2. 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 USFWS;
3. Have a substantial adverse effect on state or federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

4. 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;
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

b. Project Impacts and Mitigation Measures

The following section discusses potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2026 RTP/SCS. Due to the programmatic nature of the proposed 2026 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement projects and future projects under the land use scenario envisioned by the proposed 2026 RTP/SCS could result in the impacts as described in the following section.

Threshold 1:	Would the project 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 CDFW or USFWS?

Impact BIO-1 IMPLEMENTATION OF TRANSPORTATION PROJECTS AND THE LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD HAVE A SUBSTANTIAL ADVERSE EFFECT, EITHER DIRECTLY OR THROUGH HABITAT MODIFICATIONS, ON SPECIES IDENTIFIED AS A CANDIDATE, SENSITIVE, OR SPECIAL-STATUS SPECIES IN LOCAL OR REGIONAL PLANS, POLICIES, OR REGULATIONS, OR BY THE CDFW OR USFWS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

For the purposes of this analysis, special-status plant and wildlife species include those designations described under 4.4.1.d above, plus locally important species. Most of the capital improvements proposed under the proposed 2026 RTP/SCS consist of minor expansions of existing facilities that would not involve construction in environmentally sensitive habitat areas. However, several projects could affect areas occupied by special-status plant and animal species, namely those projects that would involve new construction or expansion of existing facilities into suitable habitat. As mentioned above, there are 98 special status species known to occur or with potential to occur within the StanCOG region. Twenty-four (24) of these species are protected by the federal government through listing under the ESA or by the State government through listing under CESA or designation as Fully Protected (animals only). The remaining species shown in Appendix C are protected through CEQA and/or through local ordinances. Most special-status species have very limited ranges within the County and have specific habitat requirements. Special-status species may also tend to be associated with sensitive habitats, such as riparian habitats and drainages.

Due to the programmatic nature of the proposed 2026 RTP/SCS, a precise, project-level analysis of the specific impacts of individual transportation projects on special-status species is not possible at this time. As future transportation system improvement projects identified in the proposed 2026 RTP/SCS are planned and designed, site-specific environmental review will be conducted by the agencies responsible for implementing such projects. However, some special-status species are expected to be encountered at the locations where projects administered under the proposed 2026

RTP/SCS would occur. Thus, it is assumed that some resources would not be avoided and that potentially significant impacts would occur.

Projects such as those that occur over or in the vicinity of rivers and creeks, such as S27 (San Joaquin River Seismic Bridge Retrofit) and S28 (Tuolumne River Bridge Seismic Bridge Replacement), would be within suitable habitat for species such as California red-legged frog (Federally Threatened and SSC) and steelhead – Central Valley DPS (Federally Endangered and State SSC). Creeks and river systems within the StanCOG region that are part of the San Joaquin River system, including those mentioned above, are considered within the current distribution of and accessible to steelhead – Central Valley DPS (Federally Threatened).

In addition to the rivers and creeks that may be impacted, future transportation projects under the proposed 2026 RTP/SCS could impact upland habitats and the sensitive species that may occupy them. For example, coast horned lizards (*Phrynosoma blainvillii;* SSC) may be present in scrub, grassland, and some woodland habitats near roads where projects could occur. Several special-status bat species may be affected by proposed projects where they occur under bridges or similar structures, or in native habitat adjacent to construction areas. Furthermore, the wide variety of habitats within the proposed 2026 RTP/SCS area can support many species of nesting birds, including sensitive species such as the burrowing owl (*Athene cunicularia;* SSC). Disturbance of special-status plants could result in reductions in local population size, habitat fragmentation, or lower reproductive success.

Direct impacts to special-status species include injury or mortality occurring during implementation of projects under the proposed 2026 RTP/SCS. Direct impacts also include habitat modification and loss such that it results in the mortality or otherwise alters the foraging and breeding behavior substantially enough to cause injury. Indirect impacts could be caused by the spread of invasive non-native species that out-compete native species and/or alter habitat towards a state that is unsuitable for special-status species. For example, the spread of certain weed species can reduce the biodiversity of native habitats, potentially eliminating special-status plant species and reducing the availability of suitable forage and breeding sites for special-status animal species. Indirect impacts could also result from increased access by humans and domestic animals, particularly in areas where trails may be planned. Increased presence of humans and domestic animals foster the spread of non-native invasive plant species and can disrupt the normal behaviors of animal species.

In addition to direct and indirect impacts that may result from transportation improvement projects, the proposed 2026 RTP/SCS also contains a future land use scenario that envisions infill development and mixed-use development. This land use scenario focuses future development within existing urbanized areas. As a result, encroachment into undisturbed habitat would be reduced when compared to a land use scenario that did not focus future development within existing urbanized areas. This would limit impacts to sensitive plant and animal species. However, it is possible that sensitive plant and animal species could be located on future infill and mixed-use development project sites. As a result, infill and mixed-use development could impact plant and animal species that may be present on or in proximity to undeveloped infill parcels. Many aquatic and semi-aquatic special-status animal species, such as steelhead, are associated with creeks even in the most densely developed urban areas. Both native and non-native trees and shrubs throughout urban areas may also support nesting birds and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). Impacts would be potentially significant.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures for applicable transportation projects that would result in impacts to special-status animal and plant species or their habitats. The County and cities in the StanCOG region can and should implement these measures, where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions.

BIO-1(a) Biological Resources Screening and Assessment

On a project-by-project basis, a preliminary biological resource screening shall be performed to determine whether the project has any potential to impact biological resources. If it is determined that the project has no potential to impact biological resources, no further action is required. If the project would have the potential to impact biological resources, prior to construction, a qualified biologist shall conduct a biological resources assessment (BRA) or similar type of study to document the existing biological resources within the project footprint plus an appropriate buffer determined by a qualified biologist and to determine the potential impacts to those resources. The BRA shall evaluate the potential for impacts to all sensitive biological resources including, but not limited to special-status species, nesting birds, wildlife movement, sensitive plant communities/critical habitat and other resources judged to be sensitive by local, state, and/or federal agencies. Pending the results of the BRA, design alterations, further technical studies (i.e., protocol surveys) and/or consultations with the USFWS, CDFW and/or other local, state, and federal agencies may be required. These protocols may include, but are not limited to:

- Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants (USFWS 2000)
- Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018)
- Survey Considerations for CESA Candidate Bumble Bee Species (CDFW 2023)
- Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods (USFWS 1996)
- Revised Guidance on Site Assessment and Field Surveys for the California Red-legged Frog (USFWS 2005)
- Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander (USFWS and CDFW 2003)
- Considerations for Conserving the Foothill Yellow-legged Frog (CDFW 2018)
- Visual Encounter Survey Protocol for Rana Boylii in Lotic Environments (University of California, Davis 2017)
- Draft USGS Western Pond Turtle (Emys marmorata) Visual Survey Protocol for the Southcoast Ecoregion (U.S. Geological Survey 2006)
- Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations (USFWS 2010)
- Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California (California Energy Commission and CDFW 2010)

- Staff Report on Burrowing Owl Mitigation (CDFW 2012).
- Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 1999)
- Bat surveys consistent with CDFW recommendations

The following Mitigation Measures [BIO-1(b) through BIO-1(i)] shall be incorporated, only as applicable, into the BRA and/or the project CEQA document for projects where specific resources are present, or may be present, and may be impacted by the project. Note that specific surveys described in the mitigation measures below may be completed as part of the BRA where suitable habitat is present.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

BIO1(b) Special-Status Plant Species Surveys

If completion of the project-specific BRA determines that special-status plant species have potential to occur on-site, the implementing agency shall contract a qualified biologist to complete surveys for special-status plants prior to any vegetation removal, grubbing, or other construction activity of each project (including staging and mobilization). The surveys shall be floristic in nature and shall be seasonally timed to coincide with the target species identified in the project-specific BRA. Whenever practicable, surveys shall be conducted in accordance with the most current protocols established by the CDFW, USFWS, and the local jurisdictions if said protocols exist. A report of the survey results shall be submitted to the implementing agency for review by the qualified biologist. If special-status plant species are identified, mitigation measure BIO-1(c) shall apply.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during project permitting and environmental review, prior to project construction but no earlier than one year before construction commences.

BIO-1(c) Special-Status Plant Species Avoidance, Minimization, and Mitigation

If state or federally listed and/or CRPR 1 and 2 species are found during special-status plant surveys [pursuant to mitigation measure BIO-1(b)], then the implementing agency shall redesign the project to avoid impacting these plant species to the maximum extent feasible. Occurrences of these species that are not within the immediate disturbance footprint but are located within 50 feet of disturbance limits shall have bright orange protective fencing installed at least 30 feet beyond their extent, or other distance as approved by a qualified biologist, to protect them from harm. If CRPR 3 and 4 species are found, the qualified biologist contracted to conduct the plant surveys [pursuant to mitigation measure BIO-1(b)] shall evaluate to determine if they meet criteria to be considered special-status, and if so, the same process as identified for CRPR 1 and 2 species shall apply.

If special-status plants species cannot be avoided and would be impacted by a project implemented under the proposed 2026 RTP/SCS, the implementing agency shall require all impacts to be mitigated at an appropriate ratio to fully offset project impacts, as determined by a qualified

biologist for each species as a component of habitat restoration. A restoration plan shall be prepared and submitted to the implementing agency.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should be implemented prior to issuance of project construction permits and approvals.

BIO-1(d) Endangered/Threatened Animal Species Habitat Assessment and Protocol Surveys

If the results of the BRA determine that suitable habitat may be present for federally and/or state endangered or threatened animal species, the implementing agency shall require habitat assessments/surveys. Whenever practicable, the surveys shall be completed in accordance with CDFW and/or USFWS/NMFS protocols prior to issuance of any construction permits/project approvals.

Alternatively, in lieu of conducting protocol surveys, the implementing agency may choose to assume presence within the project footprint and proceed with development of appropriate avoidance measures, consultation, and permitting, as applicable.

If the target species is detected during protocol surveys, or protocol surveys are not conducted and presence assumed based on suitable habitat, mitigation measure BIO-1(e) shall apply.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be implemented prior to issuance of project construction permits and approvals.

BIO-1(e) Endangered/Threatened Animal Species Avoidance and Compensatory Mitigation

If habitat is occupied or presumed occupied by federal and/or state listed or candidate species and would be impacted by the project, the implementing agency shall redesign the project in coordination with a qualified biologist to avoid impacting occupied/presumed occupied habitat to the extent feasible. If occupied or presumed occupied habitat cannot be avoided, the implementing agency shall estimate the total acreages for habitat that would be impacted prior to the issuance of construction permits/approvals.

Compensatory mitigation shall be achieved through purchase of credits at a USFWS, NMFS and/or CDFW approved conservation bank if available for the affected species, and/or through providing compensatory mitigation to offset impacts to federal and/or state listed or candidate species habitat. Compensatory mitigation shall be provided at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist for permanent impacts. Compensatory mitigation may be combined/nested with special-status plant species and sensitive community restoration where applicable. Temporary impact areas shall be restored to pre-project conditions.

If on and/or off-site compensatory mitigation sites are identified, the implementing agency shall retain a qualified biologist to prepare a Habitat Mitigation and Monitoring Plan (HMMP) to ensure

the success of compensatory mitigation sites that are to be conserved for compensation of permanent impacts to federal and/or state listed or candidate species. The HMMP shall identify long term site management needs, routine monitoring techniques, techniques, and success criteria, and shall determine if the conservation site has restoration needs to function as a suitable mitigation site. If restoration is required on the conservation site, the HMMP shall contain the restoration components outlined under the Restoration Plan listed in measure BIO-1(c). The HMMP shall be submitted to the implementing agency for review and approval.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be implemented prior to issuance of project construction permits and approvals.

BIO-1(f) Endangered/Threatened and Candidate Species Avoidance and Minimization During Construction

Implementing agencies shall select from these measures as appropriate depending on site conditions, the species with potential for occurrence and the results of the biological resources screening and assessment (measure BIO-1[a]).

- Preconstruction surveys for federal and/or state listed or candidate species with potential to occur shall be conducted by a qualified biologist where suitable habitat is present, as determined by the qualified biologist. The surveys shall occur not more than 48 hours prior to the start of construction activities. The survey area shall include the proposed disturbance area and all proposed ingress/egress routes, plus a 100-foot buffer. If any life stage of federal and/or state listed or candidate species is found within the survey area, the qualified biologist shall recommend an appropriate course of action, which may include consultation with USFWS, NMFS and/or CDFW. The results of the pre-construction surveys shall be submitted to the implementing agency for review and approval prior to start of construction.
- Ground disturbance shall be limited to the minimum necessary to complete the project. The project limits of disturbance shall be flagged. Areas of special biological concern shall have highly visible orange construction fencing.
- All projects occurring within/adjacent to aquatic habitats (including riparian habitats and wetlands) shall be completed between April 1 and October 31, to avoid impacts to sensitive aquatic species.
- All projects occurring within or adjacent to sensitive habitats that may support federally and/or state endangered/threatened species shall have a qualified biologist present during all initial ground disturbing/vegetation clearing activities. Once initial ground disturbing/vegetation clearing activities have been completed, said biologist shall conduct daily pre-activity clearance surveys for endangered/threatened species. Alternatively, and upon approval of the CDFW and/or USFWS/NMFS or as outlined in project permits, said biologist may conduct site inspections at a minimum of once per week to ensure all prescribed avoidance and minimization measures are begin fully implemented.
- A qualified biologist shall be present during all initial ground disturbing activities, including vegetation removal, to recover special-status animal species unearthed by construction activities.

- No endangered/threatened species shall be captured and relocated without authorization from the CDFW and/or USFWS.
- If pumps are used for dewatering activities, all intakes shall be completely screened with wire mesh not larger than five millimeters to prevent animals from entering the pump system.
- If at any time during construction of the project an endangered/threatened species enters the construction site or otherwise may be impacted by the project, all project activities shall cease. At that point, a qualified biologist shall recommend an appropriate course of action, which may include consultation with USFWS, NMFS and/or CDFW.
- All vehicle maintenance/fueling/staging shall occur at a minimum 100 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills.
- No equipment shall be permitted to enter wetted portions of any affected drainage channel.
- All equipment operating within streambeds (restricted to conditions in which water is not present) shall be in good conditions and free of leaks. Spill containment shall be installed under all equipment staged within stream areas and extra spill containment and clean up materials shall be located in close proximity for easy access.
- At the end of each workday, excavations shall be secured with cover or a ramp shall be provided to prevent wildlife entrapment.
- All trenches, pipes, culverts, or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.
- If special-status bat species may be present and impacted by the project, within 30 days of the start of construction a qualified biologist shall conduct presence/absence surveys for special-status bats, in consultation with the CDFW, where suitable roosting habitat is present. Surveys shall be conducted using acoustic detectors and by searching tree cavities, crevices, and other areas where bats may roost. If active bat roosts or colonies are present, the biologist shall evaluate the type of roost to determine the next step.
    - If a maternity colony is present, all construction activities shall be postponed within a 250-foot buffer around the maternity colony until it is determined by a qualified biologist that the young have dispersed or as recommended by CDFW through consultation. Once it has been determined that the roost is clear of bats, the roost shall be removed immediately.
    - If a roost is determined by a qualified biologist to be used by a large number of bats (large hibernaculum), alternative roosts, such as bat boxes if appropriate for the species, shall be designed and installed near the project site. The number and size of alternative roosts installed will depend on the size of the hibernaculum and shall be determined through consultations with the CDFW.
    - If other active roosts are located, exclusion devices such as valves, sheeting or flap-style one-way devices that allow bats to exit but not re-enter roosts discourage bats from occupying the site.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be implemented prior to and ongoing through project construction.

BIO-1(g) Non-Listed Special-status Animal Species Avoidance and Minimization

Depending on the species identified in the BRA, the implementing agency shall select from among the following to reduce the potential for impacts to non-listed special-status animal species:

- Pre-construction clearance surveys shall be conducted within 14 days prior to the start of construction (including staging and mobilization) to identify all special-status animal species that may occur on-site. All non-listed special-status species shall be relocated from the site. A report of the pre-construction survey shall be submitted to the implementing agency for their review and approval prior to the start of construction.
- A qualified biologist shall be present during all initial ground disturbing activities, including vegetation removal, to recover special-status animal species unearthed by construction activities.
- Upon completion of the project, a qualified biologist shall prepare a final compliance report documenting all compliance activities implemented for the project, including the pre-construction survey results.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be implemented once prior to commencement of project construction, and then during construction activities if needed.

BIO-1(h) Preconstruction Surveys for Nesting Birds

For construction activities occurring during the nesting season (generally February 1 to September 15), surveys for nesting birds covered by the CFGC, the MBTA, and Bald and Golden Eagle Protection Act shall be conducted by a qualified biologist no more than 10 days prior to vegetation removal activities.

A qualified biologist shall conduct preconstruction surveys for raptors. The survey for the presence of bald and golden eagles shall cover all areas within of the disturbance footprint plus a one-mile buffer where access can be secured. The survey area for all other nesting bird and raptor species shall include the disturbance footprint plus a 300-foot and 500-foot buffer, respectively.

If active nests (nests with eggs or chicks) are located, the qualified biologist shall establish an appropriate avoidance buffer based on the species biology and the current and anticipated disturbance levels occurring in vicinity of the nest. All buffers shall be marked using high visibility flagging or fencing, and, unless approved by the qualified biologist, no construction activities shall be allowed within the buffers until the qualified biologist has verified that young have fledged from the nest, or the nest fails.

For bald or golden eagle nests identified during the preconstruction surveys, an avoidance buffer of up to one mile shall be established by a qualified biologist on a case-by-case basis in consultation with the USFWS and CDFW. The size of the buffer may be influenced by the existing conditions and disturbance regime, relevant landscape characteristics, and the nature, timing, and duration of the expected disturbance. The buffer shall be established between February 1 and September 15; however, buffers may be relaxed earlier than September 15 if a qualified ornithologist determines that a given nest has failed or that all surviving chicks have fledged, and the nest is no longer in use.

A report of these preconstruction nesting bird surveys and nest monitoring (if applicable) shall be submitted to the implementing agency by the ornithologist for review and approval prior to the start of construction.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be implemented once prior to commencement of project construction, and then during construction activities if needed.

BIO-1(i) Worker Environmental Awareness Program

Prior to initiation of construction activities (including staging and mobilization), all personnel associated with project construction shall attend Worker Environmental Awareness Program training, conducted by a qualified biologist retained by the implementing agency, to aid workers in recognizing special-status resources and review of the limits of construction and mitigation measures required. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction of the project. All employees shall sign a form documenting that they have attended the training and understand the information presented to them.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

Significance After Mitigation

Compliance with the above mitigation measures would reduce impacts to special-status species and their habitat because the mitigation measures require pre-project surveys and biological monitoring, focused biological surveys, avoidance or minimization of project related disturbance or loss of special-status species, compensation for disturbed or loss of special-status species habitat and coordination with permitting agencies, as required prior to project implementation. However, it cannot be guaranteed that all future project level impacts to special-status species can be mitigated to a less than significant level for all species. Additionally, complete avoidance is typically the only acceptable mitigation for protected species, which may not be feasible under some circumstances. There are no other feasible mitigation measures. Therefore, impacts would remain significant and unavoidable.

Threshold 2:	Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS?
Threshold 3:	Would the project have a substantial adverse effect on state and federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Impact BIO-2 IMPLEMENTATION OF TRANSPORTATION PROJECTS AND THE LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD RESULT IN SUBSTANTIAL ADVERSE IMPACTS ON SENSITIVE NATURAL COMMUNITIES AND WOULD RESULT IN SUBSTANTIAL ADVERSE IMPACTS ON STATE AND FEDERALLY PROTECTED WETLANDS. THESE IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Transportation projects and land use development that may be implemented under the proposed 2026 RTP/SCS have the potential to impact riparian areas and wetlands, as mapped on Figure 4.4-2. Due to the programmatic nature of this analysis, the project-specific extent and severity of the impacts is not known at this time. Some examples of types of projects with potential impacts include, but are not limited to: retrofit, construction and reconstruction/widening of bridges over rivers and creeks such as S27 (San Joaquin River Seismic Bridge Retrofit) and S28 (Tuolumne River Bridge Seismic Bridge Replacement), including the San Joaquin River, Stanislaus River, Tuolumne River, Orestimba Creek, and Gallup Creek. These types of projects would have potential to impact riparian areas, as well as water bodies. In addition, projects such as multi-use trails and bike paths may also involve development along riparian corridors. Riparian areas provide wildlife habitat, and movement corridors, enabling both terrestrial and aquatic organisms to move along river systems between areas of suitable habitat. Construction of the proposed facilities could have both direct impacts associated with the disturbance of riparian flora and fauna and indirect impacts caused by increased erosion and sedimentation, which can adversely affect downstream water quality. Construction could also impact aquatic features protected by CDFW and require a Lake and Streambed Alteration Agreement. These features include rivers, streams, and lakes, including the banks of these features.

In addition, other sensitive habitats, including oak woodlands, could occur at locations of transportation improvement projects and land use development sites. As noted in Section 4.4.1.c, vegetation alliances with State ranks of S1-S3 are considered to be imperiled and thus, potentially of special concern and sensitive (CDFW 2026d). Impacts to these sensitive communities, including oak woodlands, could be significant. Direct impacts to sensitive habitats include loss of habitat during construction of the project. Indirect impacts include habitat degradation caused by the introduction of invasive plant species incidentally from construction equipment and through selection of invasive landscape plants, as well as erosion of disturbed areas.

The future land use scenario envisioned by the proposed 2026 RTP/SCS would encourage infill development and mixed-use development. This land use scenario focuses future development within existing urbanized areas. As a result, future infill and mixed-use development are likely to result in only limited impacts on riparian habitat or sensitive habitat, though some parcels that have been relatively free of ground disturbance may contain remnants of sensitive native habitats such as Elderberry Savanna and Great Valley Mixed Riparian Forest or other vegetation alliances and associations that are deemed sensitive by the CDFW. Furthermore, some areas mapped by CWHR as somewhat disturbed habitats, such as annual grasslands, may at the local scale include sensitive

native vegetation with unique assemblages of native plants, such as areas dominated by native wildflowers, vernal pools, and native grasslands. Impacts would be potentially significant.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measure for applicable transportation projects that would impact sensitive habitats and/or jurisdictional wetlands and waters. Stanislaus County and cities in the StanCOG region can and should implement these measures, where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

BIO-2(a) Aquatic Resources Jurisdictional Delineation and Impact Avoidance

If the results of Mitigation Measure BIO-1(a) indicates projects implemented under the proposed 2026 RTP/SCS occur within or adjacent to wetland, drainages, riparian habitats, or other areas that may fall under the jurisdiction of the CDFW, USACE, and/or RWQCB, a qualified biologist shall complete an aquatic resources delineation in accordance with the requirement set forth by each agency. The result shall be submitted to the implementing agency, USACE, RWQCB, and/or CDFW, as appropriate, for review and approval, and the project shall be designed to avoid and minimize impacts to jurisdictional areas to the extent feasible. The delineation shall serve as the basis to identify potentially jurisdictional areas to be protected during construction, through implementation of the avoidance and minimization identified in measure BIO-2(f).

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

BIO-2(b) Wetland, Drainages, and Riparian Habitat Restoration

Impacts to jurisdictional wetlands, drainages, and riparian habitat shall be mitigated at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist retained by the implementing agency and shall occur on-site or as close to the impacted habitat as possible. A mitigation and monitoring plan shall be developed by a qualified biologist to ensure the success of compensatory mitigation sites that are to be conserved for compensation of permanent impacts to jurisdictional water and wetlands. The mitigation and monitoring plan can be prepared in combination with HMMP defined under Mitigation Measure BIO-1(e) above, if applicable. The mitigation and monitoring plan shall identify long term site management needs, routine monitoring techniques, techniques and success criteria, and shall determine if the conservation site has restoration needs to function as a suitable mitigation site. Alternatively, mitigation shall be accomplished through purchase of credits from an approved wetlands mitigation bank.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

BIO-2(c) Landscaping Plan

If landscaping is proposed for a specific project, a qualified biologist/landscape architect retained by the implementing agency shall prepare a landscape plan. Drought tolerant, locally native plant species shall be used. Noxious, invasive and/or non-native plant species that are recognized on the Federal Noxious Weed List, California Noxious Weeds List and/or California Invasive Plant Council Inventory shall not be permitted. Species selected for planting shall be regionally appropriate native species that are known to occur in the adjacent native habitat types.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

BIO-2(d) Sensitive Natural Community Avoidance and Mitigation

If the results of Mitigation Measure BIO-1(a) indicates projects implemented under the proposed 2026 RTP/SCS would impact sensitive natural communities, the implementing agency shall avoid impacts to sensitive natural communities through final project design modifications if feasible.

If the implementing agency determines that sensitive natural communities cannot be avoided, impacts shall be mitigated on-site or offsite at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist based on any applicable resource agency guidelines. Temporarily impacted areas shall be restored to pre-project conditions. A Restoration Plan shall be developed by a qualified biologist and submitted to the implementing agency for approval. Mitigation for impacts to sensitive natural communities can be developed and included in the HMMP defined under Mitigation Measure BIO-1(e) above, if applicable. The mitigation and monitoring plan shall identify long term site management needs, routine monitoring techniques, techniques and success criteria.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

BIO-2(e) Invasive Weed Prevention and Management Program

Prior to start of construction for each project that occurs within or adjacent to native habitats, an Invasive Weed Prevention and Management Program shall be developed by a qualified biologist retained by the implementing agency to prevent invasion of native habitat by non-native plant species. The plan shall be submitted to the implementing agency for review and approval. A list of target species shall be included, along with measures for early detection and eradication.

The plan, which shall be implemented by the implementing agency, shall also include, but not be limited to, the following measures to prevent the introduction of invasive weed species:

- During construction, limit the use of imported soils for fill. If the use of imported fill material is necessary, the imported material must be obtained from a source that is known to be free of invasive plant species.

- To minimize colonization of disturbed areas and the spread of invasive species, the contractor shall stockpile topsoil and redeposit the stockpiled soil after construction or transport the topsoil to a permitted landfill for disposal.
- All erosion control materials, including straw bales, straw wattles, or mulch used on-site must be free of invasive species seed.
- Exotic and invasive plant species shall be excluded from any erosion control seed mixes and/or landscaping plant palettes associated with the proposed project
- All disturbed areas shall be hydroseeded with a mix of locally native species upon completion of work in those areas.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

BIO-2(f) Wetlands, Drainages, and Riparian Habitat Best Management Practices During Construction

The following best management practices shall be required by the implementing agency for development within or adjacent to wetlands, drainages, or riparian habitat:

- Access routes, staging and construction areas shall be limited to the minimum area necessary to achieve the project goal and minimize impacts to other waters including locating access routes and ancillary construction areas outside of jurisdictional areas.
- To control sedimentation during and after project implementation, appropriate erosion control materials shall be deployed to minimize adverse effects on jurisdictional areas in the vicinity of the project.
- Project activities within the jurisdictional areas should occur during the dry season (typically between June 1 and November 1) in any given year, or as otherwise directed by the regulatory agencies.
- During construction, no litter or construction debris shall be placed within jurisdictional areas. All such debris and waste shall be picked up daily and properly disposed of at an appropriate site.
- Raw cement, concrete, or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic species resulting from project related activities, shall be prevented from contaminating the soil and/or entering wetlands, drainages, or riparian habitat.
- All refueling, maintenance and staging of equipment and vehicles shall occur at least 100 feet from bodies of water and in a location where a potential spill would not drain directly toward aquatic habitat (e.g., on a slope that drains away from the water source). Prior to the onset of work activities, a plan must be in place for prompt and effective response to any accidental spills.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. These mitigation

measures shall, or can and should, be applied during project permitting and environmental review, and implemented prior to project construction and during construction activities.

Significance After Mitigation

Compliance with the above Mitigation Measures BIO-2(a) through BIO-2(f) would reduce impacts to sensitive communities and wetlands because the mitigation measures require focused biological surveys, best management practices for avoidance or minimization impacts, compensation for disturbed or loss of sensitive communities and wetlands and coordination with permitting agencies, as required prior to project implementation. However, it cannot be guaranteed that all future project level impacts can be mitigated to a less than significant level for all sensitive habitats. There are no other feasible mitigation measures. As such, impacts would remain significant and unavoidable.

Threshold 4:	Would the project 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?

Impact BIO-3 IMPLEMENTATION OF TRANSPORTATION PROJECTS AND THE LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD 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. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

As discussed above in Section 4.4.1, *Setting*, the StanCOG region contains two mapped ECAs (CDFW 2026b). One is in the western portion of the County in the Diablo Range. The other is located near the foothills of the Sierra Nevada in the eastern edge of Stanislaus County. Five important movement corridors are also identified. Three are associated with rivers and watercourses, including the San Joaquin River, Tuolumne River, and Stanislaus River. The remaining two movement corridors are associated with the foothill regions of the Diablo and Sierra Nevada Ranges but also include some agricultural and developed areas (mostly rural residential) and some are bisected by major roadways. As such, several transportation projects in the proposed 2026 RTP/SCS may overlap with areas of mapped ECAs or other locally important wildlife movement corridors including rivers and watercourses within the region.

Large swaths of undeveloped areas within the StanCOG region provide vegetative cover suitable for the movement of many terrestrial wildlife species, including medium to large-sized, mobile mammals with relatively large home ranges, such as coyote, deer, bobcat, grey fox, and mountain lion, and provide foraging and breeding habitat for many species. Wildlife species can move through these vegetated areas routinely with some species also using concrete-lined or earthen stormwater channels in the area for movement.

As previously discussed under Impacts BIO-1 and BIO-2, transportation improvement projects and the land use scenario envisioned by the proposed 2026 RTP/SCS could occur within areas that support sensitive habitat (e.g., riparian areas, undeveloped natural areas). Direct and indirect disturbances to these areas could potentially interfere with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors within the SJCOG region.

Fragmentation of habitat by roads and development throughout the Central Valley and surrounding open space areas is already a serious issue, and retaining existing connectivity (e.g., roadless area) between large undeveloped areas is considered important for the long-term viability of wildlife populations in the area and therefore is very desirable from the standpoint of conservation planning.

Even in more urbanized areas such as Modesto and Turlock, there are pockets of natural areas that are considered native wildlife nursery sites (e.g., San Joaquin River and Tuolumne River). These areas have the potential to support nesting birds and other breeding wildlife. Development projects are required to comply with CFGC sections such as 3503, 3503.5, 3513, and 4150; thus, it is unlikely that infill development or TOD accommodated under the proposed 2026 RTP/SCS would result in the disturbance or destruction of active nest sites or the unauthorized take of birds or nongame mammals. Nevertheless, if development activities directly (e.g., cutting of trees or other vegetation, or removal of man-made structures containing an active bird nest or denning wildlife) or indirectly (e.g., if activities sufficiently harassed birds to cause nest abandonment) affect nesting birds and nongame mammals, a violation of the Fish and Game Code would result.

Larger predatory mammals known to occur in the StanCOG region do not travel in large groups requiring large swaths of land;[2] thus, the reduction in capacity of migratory corridors would be less than significant. Conversely, game species such as mule deer, would be confined to narrower movement channels, which could lead to a reduction in capacity and could present a more opportunistic situation for predators (i.e., may increase predation rates). If prey species are dispersing through a more confined corridor, this may provide a bottleneck by which a predator can take advantage, although there is no clear evidence that predation rates universally increase due to corridors as the relationship between predation and corridors is complex (Conservation Corridor 2026).

Development of wider roadways and associated infill development and TOD may also result in wildlife attempting to cross roadways at inopportune areas, (i.e., areas that are significantly narrower and confined by steeper hillsides or other barriers). This potential shift may lead to an increase in road mortality. Thus, impacts to wildlife movement based on existing and post-project opportunities would be considered significant without incorporation of mitigation.

Direct impacts to wildlife include increased noise and human presence during construction, as well as increased trash which may attract predators to the project site and discourage wildlife use of surrounding natural habitat. These edge effects of development in and adjacent to open space have the potential to adversely affect wide ranging predators, such as mountain lions. Indirect impacts include invasion of natural habitats by non-native species and increased presence of humans and domestic animals over the long-term. In addition, transportation improvement projects could include new segments of fencing or walls that could hinder wildlife movement.

The future land use scenario envisioned by the proposed 2026 RTP/SCS would encourage infill and TOD within existing urbanized areas. Most of the future infill and TOD projects would likely be in areas that provide limited or no wildlife movement, but some development would occur in more undisturbed outlying areas. Even the elimination of limited wildlife movement opportunities could further isolate areas of native habitat occupied by both sensitive and common native wildlife species.

[2] This discussion is related to the carrying capacity of a movement corridor and not the home range requirement of a given large predatory mammal.

Based on the above analysis, impacts on wildlife movement related to transportation projects as identified in Table 4.4-1 and impacts related to the future land use scenario envisioned by the proposed 2026 RTP/SCS would be significant. The following mitigation measures would reduce this impact.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measure for applicable transportation projects that would impact wildlife movement, including fish migration, and/or impede the use of native wildlife nursery. The StanCOG region and cities in the StanCOG region can and should implement these measures, where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

BIO-3(a) Project Design for Wildlife Connectivity

All projects including long segments of fencing and lighting shall be designed to minimize impacts to wildlife movement. Fencing shall not be installed at the openings of culverts, undercrossings, or other wildlife passage structures unless required for public safety; where fencing is necessary, it shall be placed far enough from the structure entrance to avoid blocking wildlife access and shall include design features that maintain clear, functional movement pathways.

Where fencing or other project components that may disrupt wildlife movement is required for public safety concerns, they shall be designed to permit wildlife movement by incorporating design features such as:

- A minimum 16 inches between the ground and the bottom of the fence to provide clearance for small animals;
- A minimum 12 inches between the top two wires, or top the fence with a wooden rail, mesh, or chain link instead of wire to prevent animals from becoming entangled;
- If privacy fencing is required near open space areas, openings at the bottom of the fence measure at least 16 inches in diameter shall be installed at reasonable intervals to allow wildlife movement, or the fence may be installed with the bottom at least 16 inches above the ground level;
- If fencing or other project components must be designed in such a manner that wildlife passage would not be permitted, wildlife crossing structures shall be incorporated into the project design as appropriate;
- Lighting installed as part of any project shall be designed to be minimally disruptive to wildlife (see mitigation measure AES-3(a) Roadway Lighting for lighting requirements), and
- Vegetative buffers, consisting of California native plant and tree species, shall be installed where feasible to provide a natural noise barrier between roadway projects and sensitive wildlife habitat, including movement corridors. The buffer shall be maintained in perpetuity to ensure noise levels from the roadway are minimized within adjacent sensitive habitat.

In addition, prior to design approval, implementing agencies shall conduct wildlife movement assessments to evaluate connectivity constraints and identify opportunities to maintain or enhance wildlife movement. Post-construction monitoring shall be conducted, where feasible, to confirm wildlife use of implemented movement features and to identify any needed adaptive management.

When on-site design measures cannot fully reduce impacts, compensation shall be considered as a mitigation option, including but not limited to participation in mechanisms authorized under SB 790, to reduce unavoidable connectivity impacts at a landscape scale.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

BIO-3(b) Maintain Connectivity in Drainages

No permanent structures shall be placed within any drainage or river that would impede wildlife movement (i.e., no hardened caps or other structures in the stream channel perpendicular to stream flow be left exposed or at depth with moderate to high risk for exposure as a result of natural bed scour during high flow events and thereby potentially create impediments to passage).

In addition, upon completion of construction within any drainage, areas of stream channel and banks that are temporarily impacted shall be returned to pre-construction contours and in a condition that allows for unimpeded passage through the area once the work has been complete.

If water is to be diverted around work sites, a diversion plan shall be submitted to StanCOG and/or local jurisdiction for review and approval prior to issuance of project construction permits/approvals. The diversion shall be designed in a way as to not impede movement while the diversion is in place.

For projects affecting drainages that serve as wildlife movement corridors, implementing agencies shall complete preconstruction evaluations of species movement patterns to guide placement, design, and timing of work. Post construction monitoring shall be conducted, where feasible, to verify that drainage related movement remains functional and to inform adaptive management if needed.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during project permitting and environmental review.

BIO-3(c) Construction Best Management Practices to Minimize Disruption to Wildlife

The following construction best management practices shall be incorporated into all grading and construction plans in order to minimize temporary disruption of wildlife, which could hinder wildlife movement:

- Designation of a 20 mile per hour speed limit in all construction areas.
- Daily construction work schedules shall be limited to daylight hours only.
- Mufflers shall be used on all construction equipment and vehicles shall be in good operating condition.
- All trash shall be placed in sealed containers and shall be removed from the project site a minimum of once per week.
- No pets are permitted on project site during construction.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. These mitigation measure shall, or can and should, be applied during project permitting and environmental review.

Significance After Mitigation

Compliance with the above mitigation measures would reduce impacts to wildlife movement by requiring projects to be designed in a way that maintains connectivity. However, it cannot be guaranteed that movement of terrestrial species will not be impeded at the regional scale due to the large scale of the proposed 2026 RTP/SCS. Further, StanCOG does not have the authority to require other implementing agencies (e.g., Caltrans, counties, cities, transit agencies, etc.) that are responsible agencies for this proposed 2026 RTP/SCS EIR, but that will be the lead agency for future transportation and land use development projects to implement these mitigation measures. No additional feasible mitigation measures are available to reduce impacts on wildlife movement. Thus, this impact would remain significant and unavoidable.

Threshold 5:	Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact BIO-4 IMPLEMENTATION OF TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD NOT CONFLICT WITH ANY LOCAL POLICIES OR ORDINANCES PROTECTING BIOLOGICAL RESOURCES, SUCH AS A TREE PROTECTION POLICY. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Most municipalities in the StanCOG region have local ordinances and policies in place that protect native habitat and/or native and nonnative trees in urban landscapes, as well as in unincorporated County lands. These ordinances and policies vary in their definitions of protected trees (e.g., certain species, percent within the public right-of-way, aesthetically suitable, deep-rooted trees, or a combination thereof) and in the requirements for ordinance or policy compliance. In addition, the County and cities may have local ordinances or policies that are intended to protect other biological resources such as wetlands and drainages, riparian habitat, and other sensitive habitat areas.

Protected trees and other biological resources which are protected by city and/or County ordinances and/or policies are expected to be encountered at the locations where projects administered under the proposed 2026 RTP/SCS would occur and therefore there is potential for conflict with local ordinances and/or policies. Most of the transportation projects in the proposed 2026 RTP/SCS are expansions or maintenance of existing roads or facilities. Because ground disturbances of previously undisturbed areas would be fairly limited as a result, the potential removal of native trees and disturbances to other biological resources protected by local policies or ordinances are expected to be minimal for most projects, although the potential for conflicts with local policies and/or ordinances to some degree remains.

In addition to potential conflicts with local policies and/or ordinances that may result from transportation projects, the proposed 2026 RTP/SCS also contains a land use scenario that emphasizes infill development and TOD. This land use scenario focuses future development concentrated in existing urbanized areas, although some development would occur in more undisturbed outlying areas. This would reduce impacts to biological resources that are protected by city or county ordinances; however, there remains the potential for conflict with local policies and ordinances from development associated with the future land use scenario.

All development projects as part of the future land use scenario as well as the transportation projects proposed for implementation under the 2026 RTP/SCS would be required to follow city and County development requirements, including compliance with local policies, ordinances and applicable permitting procedures related to protection biological resources. Project-level analysis would identify significant conflicts with local policies and ordinances as well as minimize, mitigate, or avoid those impacts through the design, siting and permitting process; and provide mitigation for any significant impacts as a condition of project approval. Therefore, the potential for development projects under the land use scenario as well as proposed transportation projects to conflict with local policies or ordinances protecting biological resources is considered a less than significant impact.

Mitigation Measures

Mitigation measures are not required because this impact would be less than significant, as jurisdictions are required to follow the protection policies and ordinances as described above.

Threshold 6:	Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Impact BIO-5 IMPLEMENTATION OF TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2026 RTP/SCS 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. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

No adopted regional Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan occurs within Stanislaus County at the time of Draft EIR preparation and therefore no conflict with the proposed 2026 RTP/SCS would occur. Therefore, no conflicts would occur related to existing local, regional, or state conservation plans. This impact would be less than significant.

4.4.4 Cumulative Impacts

The cumulative impact analysis area for biological resources consists of the StanCOG region and the adjoining counties. Information regarding these adjoining counties can be found in Chapter 3, *Environmental Setting, 3.3.4 Approach for Cumulative Analysi*s. This geographic scope is appropriate for biological resources because it encompasses the mosaic of representative land cover and habitat types (and associated biological resources) affected by the proposed 2026 RTP/SCS, including creeks and drainages, natural communities, and agricultural land uses. Future transportation projects and growth in the region, including growth in adjoining counties, could impact resources in the surrounding counties, and the interaction between the affected environment and the proposed 2026 RTP/SCS projects would occur throughout this larger cumulative impact analysis area.

The cumulative analysis presented below relies on a projections-based approach, using regional growth forecasts for the StanCOG region and adjoining counties to evaluate cumulative conditions. Impacts of the 2026 RTP/SCS are added to the impacts of growth and development in the adjoining counties, and a determination is made as to whether cumulative impacts would be significant, and whether the 2026 RTP/SCS incremental contribution would be cumulatively considerable. Refer to Chapter 4, *Environmental Impact Analysis, Cumulative Impact Methodology*.

Biological resources impacts resulting from cumulative development within the cumulative impact analysis area would include direct and indirect impacts to sensitive/special status species or their habitat; impacts to riparian, wetland, or other sensitive natural communities; and interference with wildlife movement. Given the extent of future development anticipated in the cumulative impact analysis area, these cumulative impacts would be significant. Implementation of the transportation projects and land use development patterns under the proposed 2026 RTP/SCS would contribute to these impacts, as described above in Section 4.4.3. Due to the potential direct and indirect impacts that may occur as a result of the proposed 2026 RTP/SCS, the proposed 2026 RTP/SCS's contribution to this impact would be cumulatively considerable.

Implementation of Mitigation Measures BIO-1(a) through BIO-3(c), which set requirements for surveys and actions to be taken if biological resources have potential to be impacted by the 2026 RTP/SCS transportation and land use projects, would reduce potential impacts to biological resources. However, even with implementation of mitigation measures, cumulative impacts to biological resources would be significant, and the proposed Plan's contribution to the impact would be cumulatively considerable.

4.5 Cultural Resources

This section analyzes impacts to cultural resources within the StanCOG region that would result from implementation of the proposed 2026 RTP/SCS and recommends feasible mitigation measures to reduce the severity of these potential impacts. Tribal cultural resources are addressed in Section 4.15, *Tribal Cultural Resources*.

4.5.1 Setting

The following cultural background discussion is broken down into pre- and post-European contact histories of the implementation area of the proposed 2026 RTP/SCS.

a. Indigenous History

The pre-contact history of California is generally divided into three broad time periods: Paleoindian period (ca. 11,550-8,550 B.C), Archaic Period (8,550 B.C.-A.D. 1100) and Emergent Occupation (A.D. 1000- European Contact) (Fredrickson 1973, 1994; Moratto 1984; Rosenthal et al. 2007). The prehistoric chronological sequence for the Central Valley presented below is based on Rosenthal et al. (2007) and Moratto (1984).

Paleoindian Period (11,550-8550 BCE)

Little is known about the Paleoindian period in the Central Valley. Geoarchaeological studies have demonstrated that erosion and deposition have buried or destroyed early archaeological deposits. Most claims of ancient human occupation have been dismissed by Moratto (1984) based on radiocarbon dating. Currently, the earliest accepted date of human occupation in the Central Valley ranges from 11,550 to 9,550 BCE and comes from fluted projectile points similar to Clovis points found at sites near Tracy Lake and the Tulare Lake Basin (Rosenthal et al. 2007). Along with fluted projectile points, concave base points have been discovered along the Tulare Lake shoreline which was occupied during the Late Pleistocene (Rosenthal et al. 2007).

Lower Archaic (8,550-5,550 BCE)

Climate change at the end of the Pleistocene caused significant periods of alluvial deposition beginning around 9,050 BCE. These new alluvial deposits created a clear stratigraphic boundary between the Late Pleistocene and Holocene sediments. The Lower Archaic, like the Paleoindian Period, is represented only by limited isolated finds. Only one Lower Archaic site (KER-116) has been identified in the Central Valley proper and few in the foothills surrounding the valley (Rosenthal et al. 2007).

Typical Lower Archaic artifacts include flaked stone crescents and stemmed points. The identification of projectile points and a diverse faunal assemblage at KER-116, (the only Lower Archaic site identified in the Central Valley to date), point to hunting being an important subsistence activity (Rosenthal et al. 2007). Milling tools and plant remains are largely absent in the valley, thus plant use during the Lower Archaic remains unclear. Several foothill sites contain milling implements and evidence of the use of nut crops such as acorn and pine (Lajeunesse and Pryor 1996). The relationship between foothill and valley floor adaptations is largely unknown during the Lower Archaic. However, distinct adaptations are apparent in the Middle Archaic, and it is possible that these divergent traditions first emerged in the Lower Archaic (Rosenthal et al. 2007).

Middle Archaic (5,550-550 BCE)

The Middle Archaic began with substantial climate change to much warmer, drier conditions. Fans and floodplains stabilized after an initial period of deposition in 5,550 BBCE Archaeological deposits dating to the Middle Archaic are rare in the Central Valley proper due to these geomorphic changes. Late Middle Archaic sites point to diverse adaptations and the emergence of organized subsistence practices and residential stability along river corridors by 6,000 years ago. The typical pattern of the Middle Archaic has been identified as the Windmiller Pattern, first identified on old levee ridges adjacent to freshwater marshes near the confluence of the Mokelumne and Cosumnes rivers. This pattern is represented by extended burials oriented to the west and a sophisticated material culture (Rosenthal et al. 2007). Middle Archaic sites are relatively common in the foothills surrounding the Central Valley and show relatively little change from the Lower Archaic (McGuire 1995).

During this time, the mortar and pestle become more widespread suggesting a shift toward more intensive subsistence practices. Fishing technologies, such as bone gorges, hooks, and spears, also appear during the Middle Archaic suggesting a new focus on fishing. Several other technologies become apparent during this time, particularly in the northern San Joaquin and southern Sacramento Valleys (Rosenthal et al. 2007). Baked-clay impressions of twined basketry, simple pottery, and other baked clay objects have been found at several sites. Personal adornment items also became more frequent. Exchange with outside groups is evidenced by the presence of obsidian, shell beads and ornaments (Rosenthal et al. 2007; Moratto 1984). Trade also seemed to be focused on utilitarian items such as obsidian or finished obsidian tools from at least five separate sources (Moratto 1984).

Upper Archaic (550 BCE. – CE 1100)

The Upper Archaic began with the onset of the Late Holocene, marked by a cooler, wetter climate. The Upper Archaic is better represented in the archaeological record than earlier periods. Cultural diversity was more pronounced and is marked by contrasting material cultures throughout the valley (Rosenthal et al. 2007).

During this period, numerous specialized technologies were developed such as bone tools and implements, manufactured goods such as Olivella and Haliotis beads and ornaments, well-made ceremonial blades, and ground-stone plummets. Beginning after circa 2,700 years ago, lower Sacramento Valley settlements shifted to a pattern of large, mounded villages, now identified as the Berkeley Pattern.

Upper Archaic period economies varied by region throughout the Central Valley. Economies were primarily focused on seasonal resources such as acorns, salmon, shellfish, rabbits, and deer (Rosenthal et al. 2007).

Emergent Occupation (CE 1100- Historic)

The stable climatic conditions of the Upper Archaic continued into the Emergent Period. In the Delta Region, this period is associated with the Augustine Pattern (Rosenthal et al. 2007). After CE 1000, many of the technologies identified during the Archaic disappeared to be replaced by cultural traditions recorded at European contact. The bow and arrow replaced the atlatl as the preferred hunting method sometime between CE 1000 and 1300.

Increased social complexity is evidenced by increased variation in burial types and offerings and larger residential communities. Grave offerings such as shell beads, ornaments, and ritually “killed” mortars and pestles are often found in burials. Pottery was frequently obtained through trade with

groups living in the foothills to the east. The Panoche side-notched point became important in the western side of the San Joaquin Valley (Rosenthal et al. 2007). In addition to the side-notched point, the Panoche Complex featured large circular structures, flexed burials, marine shell beads, bone awls, millingstones, and mortars and pestles (Moratto 1984).

As with the Archaic Period, Emergent Period economies varied geographically, though throughout the Central Valley fishing and plant harvesting increased in importance. Most Emergent residential sites contain diverse faunal assemblages containing mammal and bird remains and large amounts of fish bone. After ca. 1,000 years ago, the mortar and pestle become the dominant tool type and small seeds increase in archaeological deposits over time (Rosenthal et al. 2007).

b. Historic Background

The post-contact history of California is generally divided into three periods: the Spanish period (1769–1822), the Mexican period (1822–1848), and the American period (1848–present). Each of these periods is briefly described below.

Spanish Period (1769–1822)

In 1542, Juan Rodriguez Cabrillo led the first European expedition to observe what is now called Southern California. For more than 200 years, Cabrillo and other Spanish, Portuguese, British, and Russian explorers sailed the Alta (upper) California coast and made limited inland expeditions, but they did not establish permanent settlements (Bean 1968; Rolle 2003).

Gaspar de Portolá and Franciscan Father Junipero Serra established the first Spanish settlement in Alta California at Mission San Diego de Alcalá in 1769. This was the first of 21 missions erected by the Spanish between 1769 and 1823. Portolá continued north, eventually reaching the San Francisco Bay in 1769. In 1772, Pedro Fages led the first Europeans to enter the San Joaquin Valley (Wallace 1978; Johnson et al. 1993). Fages led a small expedition into the southernmost part of the valley, stopping at a village on the shores of Buena Vista Lake, before heading towards San Luis Obispo (Wallace 1978). The next European to enter the valley was Francisco Garcés in 1776 (Wallace 1978). In the early 1800s, numerous expeditions were made into the Central Valley to search for land for new missions or to recapture runaway neophytes (Hoover et al. 2002). However, the Spanish never succeeded in taking control of the region and no missions were established in the Central Valley.

During this period, Spain also deeded ranchos to prominent citizens and soldiers, though very few in comparison to the subsequent Mexican Period. To manage and expand their herds of cattle on these large ranchos, colonists enlisted the labor of the surrounding Native American population (Engelhardt 1927). Very few of the Central Valley tribes came under the control of the Spanish missions or ranchos. However, numerous runaway neophytes fled to the Central Valley, influencing local populations (Wallace 1978). The increased local population and contact with diseases brought by Europeans greatly reduced the Native American population (McCawley 1996).

Mexican Period (1822–1848)

The Mexican Period commenced when news of the success of the Mexican Revolution (1810-1821) against the Spanish crown reached California in 1822. This period was an era of extensive interior land grant development and exploration by American fur trappers west of the Sierra Nevada Mountains. Beginning in 1833, mission lands were conferred as rancho grants. Governor Pío Pico and his predecessors made more than 600 rancho grants between 1833 and 1846, putting most of the state's lands into private ownership for the first time (Gumprecht 1999). Among the notable

Mexican-era land grants in the county was Rancho Orestima y las Garzas, a west-county tract transferred to Sebastián Núñez in 1844 (Kyle 2002).

American Period (1848–Present)

The American Period officially began with the signing of the Treaty of Guadalupe Hidalgo in 1848, in which the United States agreed to pay Mexico $15 million for the conquered territory, including California, Nevada, Utah, and parts of Colorado, Arizona, New Mexico, and Wyoming. Settlement of California increased dramatically in the early American Period.

The discovery of gold in northern California in 1848 led to the California Gold Rush, though the first California gold was previously discovered in Placerita Canyon near the San Fernando Mission in 1842 (Guinn 1915; Workman 1935). Later, in 1848, James Marshall discovered gold while overseeing the construction of Sutter's Mill at Coloma. The discovery of gold led to an explosion in population and to the eventual establishment of the State of California. In 1850, California was admitted into the United States and by 1853, the population of California exceeded 300,000. Thousands of settlers and immigrants continued to move into the state, particularly after the completion of the transcontinental railroad in 1869.

StanCOG Region History and Historic Development

In the second half of the nineteenth century, the StanCOG region's development was characterized by a shift from mining to agriculture:

> Early settlement in the StanCOG region was focused on the foothills of the Sierra Nevada and on the three rivers in the area. Communities such as La Grange and Knight's Ferry, both located near the Sierra Nevada foothills, began as mining camps along the Tuolumne and Stanislaus rivers. By the 1860s, larger and more permanent settlements were developing along the Stanislaus River. These include Oakdale, New Hope, Adamsville, and Paradise. Initially, wheat was the primary agricultural crop county because it provided farmers with a source of income relatively quickly. Other cereal grains, such as barley and oats, were also common. Steamboats and small barges on the San Joaquin River provided early transportation for freight and passengers. Hill's Ferry and Grayson became important shipping points for wheat during the 1860s, and numerous settlements were established on the San Joaquin, Stanislaus, and Tuolumne rivers, particularly at ferry crossing points.
>
> River towns were generally abandoned in favor of railroad towns beginning in the 1870s. Development on the valley floor in support of the agricultural industry was energized when the Central Pacific Railroad (later Southern Pacific Railroad came to the StanCOG region. Railroads played a key role in the formation of the StanCOG region's two largest cities, Modesto and Turlock, as well as the smaller towns. Like Modesto, Turlock was established in 1871 along the railroad line.
>
> During the late nineteenth and early twentieth centuries, Turlock developed as a shipping point and retail center for surrounding farms. Southern Pacific Railroad branch lines constructed through the county in the 1880s stimulated the development of small commercial centers such as Oakdale, Waterford, and Newman.
>
> Implementation of new irrigation systems expanded opportunities for agricultural diversification in the StanCOG region. For example, although wheat was very important, alfalfa quickly became a leading crop that provided feed for growing herds of dairy cattle. The cultivation of orchard crops such as peaches, apricots, almonds, and oranges also became more prevalent. Although

the agricultural economy fluctuated during the twentieth century, it remains a key element of the county's economy today (Stanislaus County 2016).

In the twentieth century, communities throughout the county grew to support the region's booming irrigated agricultural economy. Within the county, Modesto consolidated its place as the county's leading commercial and cultural center. The city also boasted processing plants, the regional farm, and added value dairy outputs (City of Modesto 2021). Though less pronounced, development continued in several of the county's secondary communities, including Oakdale (incorporated in 1906), Turlock (1908), Ceres (1918), and Riverbank (1922).

Like most communities elsewhere in California, the StanCOG region experienced rapid growth in the decades following World War II. Between 1940 and 1970, the countywide the population more than doubled from 74,000 to 194,000. Postwar-era growth was particularly pronounced in Modesto, where the population roughly quadruped from 16,000 to 62,000 over the same period. Following a familiar pattern, the Modesto's growth following the war mostly followed the expansion of Highway 99 and consisted of new residences and commercial properties on the suburban periphery (City of Modesto 2022). Growth in Turlock accompanied the opening there of the California State University Stanislaus in 1960 (California State University Stanislaus 2022). Agriculture continues to be a principal economic driver in the county, which today is home to 556,000 residents.

c. Cultural Resources Inventory

Under the California Environmental Quality Act (CEQA), a historical resource is a building, site, structure, object, or district that is eligible for listing or is listed in the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), or a local register due to its historical or archaeological significance. Archaeological resource types present, or expected to exist, within the StanCOG region include prehistoric period occupation areas (both short and long term), burial areas, ceremonial areas, resource collection and processing sites, lithic scatters, quarries, rock art sites, trails, and isolated examples of prehistoric period artifacts.

For the historic period, historical resources may include buildings and structures, in addition to trails, roads, railroads, small and large-scale mining features, logging features, occupation areas (short and long term), water conveyance features, quarries, trash dumps, and cemeteries.

In general, prehistoric-period cultural resources were situated in the most favored environmental settings—areas adjacent to permanent water sources with relatively level topography. This is also true of most historic-period built environment historical resources, with the exception of mining related features and settlements where the discovery of a mineral deposit did not always correspond with a favored environmental setting. It is important to note that lower sensitivity areas could still contain historical resources, and all areas proposed for development should be studied to determine whether potential historical resources are present.

A review of the NRHP and the California Office of Historic Preservation (OHP) website identified seven California Points of Historical Interest, five California Historical Landmarks and 24 NHRP- and CRHR-listed properties located in the County. NRHP-listed properties are automatically listed in the CRHR. There may be other known and potential historical resources located in the County. Resources identified on the OHP web site are listed in Table 4.5-1. A review of the OHP Built Environment Resource Directory identified more than 500 known and potential historical resources that have been listed in, determined eligible for, or recommended eligible for listing in the NRHP, CRHR, or a local register, including both individual properties and properties listed or eligible as part of a historic district. The Caltrans Historic Bridge Inventory identifies three bridges in the County

under local jurisdiction that are eligible for listing in the NRHP: the Orestimba Creek (38C0168), Tuolumne River Bridge (38C0023), and Dry Creek (38C0073) bridges. In addition, Caltrans identifies one NRHP-eligible bridge under state jurisdiction in the County: the Snake Ravine Bridge (38 0062; Caltrans 2021a; 2021b).

Table 4.5-1 California Historical Landmarks/Points of Historical Interest & Historical Resources in the StanCOG Region*

Reference Number	Location	Resource Name	Address and/or Date Listed
California Points of Historical Interest**			
P537	Modesto	Adamsville	July 31, 1979
P566	Denair	Denair Mercantile Development Company Building	March 13, 1981
P538	Westley	Grayson	July 31, 1979
P539	La Grange	La Grange Dam	July 31, 1979
P540	Modesto	McHenry Mansion	July 31, 1979
P541	Modesto	Paradise	July 31, 1979
P542	Westley	Tuolumne City	July 31, 1979
California Historical Landmarks**			
418	Empire	Empire City	February 28, 1949
347	Knights Ferry	Knights Ferry	August 8, 1939
414	La Grange	La Grange	November 15, 1948
934	Turlock	Temporary Detention Camps for Japanese Americans-Turlock Assembly Center	May 13, 1980
415	Knights Ferry	Willms Ranch	Willms Rd, 1.3 mi S of State Hwy 120; November 15, 1948
National Register of Historic Places			
N/A	Modesto	Bald Eagle Ranch House	511 Crawford Rd.; January 15, 2014
N2087	Oakdale	First National Bank of Oakdale Building	338 East F St.; April 6, 2000
N143	La Grange	Gold Dredge	South of La Grange; December 16, 1971
N1900	Modesto	Hotel Covell	1023 J St., December 29, 1994
N799	La Grange	Kingen Hotel	30054 Yosemite Blvd.; August 24, 1979
N/A	Knights Ferry	Knights Ferry	Knights Ferry; April 23, 1975
N/A	Knights Ferry	Knights Ferry Bridge	October 16, 2012
N800	La Grange	Louie's Place	30048 Yosemite Blvd.; August 29, 1979
N582	Modesto	McHenry Mansion	906 15th St.; April 4, 1978
N801	La Grange	Odd Fellow's Hall	Yosemite Blvd.; August 24, 1979
N802	La Grange	Old Adobe Barn	Yosemite Blvd. and La Grange Rd.; August 24, 1979
N803	La Grange	Old La Grange Schoolhouse	La Grange Rd. and Floto St.; August 24, 1979
N1664	Patterson	Patterson Branch Library	355 W. Las Palmas Ave.; December 10, 1990
N224	Patterson	Plaza Building	Plaza #2; January 6, 2004

Reference Number	Location	Resource Name	Address and/or Date Listed
N1960	Riverbank	Riverbank Branch Library	3237 Santa Fe St.; December 10, 1996
N804	La Grange	Shell Gas Station	Yosemite Blvd.; August 24, 1979
N805	La Grange	St. Louis Catholic Church	La Grange Rd. and Floto St.; August 24, 1979
N806	La Grange	Stage Stop	Yosemite Blvd. and La Grange Rd.; August 24, 1979
N1815	Turlock	Turlock Carnegie Library	250 N. Broadway; January 7, 1993
N1670	Turlock	Turlock H.S. Auditorium and Gymnasium	1574 E. Canal Dr.; January 11, 1991
N1176	Modesto	U.S. Post Office	Twelfth and I Sts.; February 10, 1983
N2350	Modesto	Dr. Robert and Mary Walton House	417 Hogue Dr.; December 14, 2006
N1590	Ceres	Daniel Whitmore House	2928 Fifth St.; April 5, 1989
N1559	Modesto	Walter B. Wood House	814 Twelfth St.; May 20, 1988

Sources: California OHP 2026; NRHP 2026

*This list may not include all historical resources listed on the NRHP and CRHR.

** California Historical Landmarks 1-769 and Points of Historical Interest listed before to 1998 need to be reevaluated using current standards.

4.5.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

National Register of Historic Places

The National Register of Historic Places (NRHP) was established by the National Historic Preservation Act of 1966 as "an authoritative guide to be used by Federal, state, and local governments, private groups and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (36 Code of Federal Regulations 60.2). The NRHP recognizes properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, and association. A property is eligible for the NRHP if it meets any one of the following criteria:

- **Criterion A:** Are associated with events that have made a significant contribution to the broad patterns of our history
- **Criterion B:** Are associated with the lives of persons significant in our past
- **Criterion C:** Embody the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction
- **Criterion D:** Have yielded, or may be likely to yield, information important in prehistory or history

In addition to meeting at least one of the above designation criteria, resources must also retain integrity. The National Park Service recognizes seven aspects or qualities that, considered together, define historic integrity. To retain integrity, a property must possess several, if not all, of these seven qualities, defined in the following manner:

- **Location:** The place where the historic property was constructed or the place where the historic event occurred
- **Design:** The combination of elements that create the form, plan, space, structure, and style of a property
- **Setting:** The physical environment of a historic property
- **Materials:** Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property
- **Workmanship:** The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory
- **Feeling:** A property's expression of the aesthetic or historic sense of a particular period of time
- **Association:** The direct link between an important historic event or person and a historic property

The Department of Transportation Act

Passed in 1966, the Department of Transportation Act (49 United States Code 303, formerly 49 United States Code 1651(b)(2) and 49 United States Code 1653f) includes Section 4(f), which states that the Federal Highway Administration and other U.S. Department of Transportation agencies cannot approve the use of land from public and private historical sites unless certain conditions apply. These conditions are the following: If there is no feasible and prudent avoidance alternative to the use of land, and if the action includes all possible planning to minimize harm to the property resulting from such use; or if the Federal Highway Administration determines the use of the property will have a *de minimis* impact.

Archaeological Resources Protection Act

This regulation was enacted to protect archaeological resources and sites that are on public lands and tribal lands, to foster increased cooperation and exchange of information between government representatives, the professional archaeological community, and private individuals. Section 4 of the statute and Sections 16.5-16.12 of the uniform regulations describe the requirements that must be met before federal authorities can issue a permit to excavate or remove any archaeological resource on federal or tribal lands. The curation requirements of artifacts, other materials excavated or removed, and the records related to the artifacts and materials are described in Section 5 of the ARPA. This section also authorizes the Secretary of the Interior to issue regulations describing in more detail the requirements regarding these collections.

b. State Laws, Regulations, and Policies

California Register of Historical Resources

The CRHR program was designed for use by state and local agencies, private groups, and citizens to identify, evaluate, register, and protect California's historical resources. A historical resource can include any object, building, structure, site, area, or place that is determined to be historically or archaeologically significant. The CRHR is an authoritative guide to the state's significant

archaeological and historic architectural resources. The list of these resources can be used for state and local planning purposes, the eligibility determinations can be used for state historic preservation grant funding and listing in the CRHR provides a certain measure of protection under CEQA.

California Historical Landmarks Program

The Historical Landmarks Program was instated to register buildings or landmarks of historical interest. Historical Landmarks are defined as sites, buildings, or features that have a statewide historical, cultural, anthropological, or other significance. To be designated as a Historical Landmark by the Director of California State Parks, the resource must meet set criteria, be recommended for designation by the State Historical Resources Commission, and be approved by the property owners. The goals of the program include the preservation and maintenance of registered landmarks, most of which include missions, early settlements, battles, and gold rush sites (PRC Sections 5020.4, 5021, 5022, 5022.5, 5031 and 5032).

California Environmental Quality Act

Archaeological Resources

CEQA requires lead agencies to consider whether projects would affect unique archaeological resources. PRC Section 21083.2(g) states that "unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions. And there is a demonstrable public interest in that information
2. Has a special and particular quality, such as being the oldest of its type or the best available example of its type
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person

Impacts to Historical Resources

Section 15064.5 of the *CEQA Guidelines* states that "a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment." The *CEQA Guidelines* (Section 15064.5(a)) define an "historical resource" as including the following:

- A resource listed in, or eligible for listing in, the California Register of Historical Resources
- A resource listed in a local register of historical resources (as defined at PRC Section 5020.1(k)
- A resource identified as significant in a historical resources survey meeting the requirements of PRC Section 5024.1(g)

Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. (Generally, a resource is considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the CRHR

CEQA Guidelines (Section 15064.5(b)[1]) define "substantial adverse change" as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired." Generally, the significance of a historical resource is "materially impaired" when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in or eligibility for the CRHR, or its inclusion in a local register of historical resources (*CEQA Guidelines* Section 15064.5(b)(2)).

Standard Mitigation Measures Under CEQA

Historical Resources

Mitigation measures for historical resources impacts are discussed in *CEQA Guidelines* Section 15126.4. Generally, by following the Secretary of the Interior's Standards for the Treatment of Historic Properties or the Secretary of the Interior's Standards for Rehabilitation, impacts can be considered as mitigated to a level less than significant. For historical resources that are archaeological sites, according to the *CEQA Guidelines* Section 15126.4(b)(3), public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature.

Unique Archeological Resources

A cultural resource is also significant if it is a unique *archaeological resource*, which is defined in Section21083.2(g) as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person

If an archaeological resource qualifies as a "historical resource," potential adverse impacts must be considered in the same manner as a historical resource *CEQA Guidelines* Section 15064.5(c)(2)). If the archaeological site does not qualify as a historical resource but does qualify as a unique archaeological resource, then the archaeological site is treated in accordance with PRC Section 21083.2 (*CEQA Guidelines* Section 15064.5(c)(3)).

CALIFORNIA PUBLIC RESOURCES CODE SECTION 5024 AND STATE-OWNED LANDS

Historical resources on State-owned lands are subject to the requirements of PRC Section 5024. PRC Section 5024.5(f) requires State agencies to submit to SHPO for comment documentation for any project having the potential to affect historical resources under its jurisdiction listed in or potentially eligible for inclusion in the NRHP or registered or eligible for registration as California Historical Landmarks. The SHPO has 30 days after receipt of the notice for review and comment. If the SHPO determines that a proposed action would have an adverse effect on a listed historical resource, the relevant State agency shall adopt prudent and feasible measures that will eliminate or mitigate the adverse effects.

CALIFORNIA NATIVE AMERICAN HISTORICAL, CULTURAL, AND SACRED SITES ACT

The California Native American Historical, Cultural, and Sacred Sites Act (PRC Section 5097.9) applies to both State and private lands. The act requires, upon discovery of human remains, that construction or excavation activity cease and that the county coroner be notified. If the remains are those of a Native American, the coroner must notify the NAHC, which notifies and has the authority to designate the most likely descendant (MLD) of the deceased. The act stipulates the procedures that the descendants may follow for treating or disposing of the remains and associated grave goods.

HEALTH AND SAFETY CODE SECTION 7050.5

Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If they are determined to be Native American, the coroner must contact the NAHC.

PUBLIC RESOURCES CODE SECTION 5097

PRC Section 5097 specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American burials falls within the jurisdiction of the NAHC. Section 5097.5 of the PRC states the following:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

CALIFORNIA HEALTH AND SAFETY CODE SECTIONS 7050.5, 7051, AND 7054

HSC Sections 7050.5, 70051, and 7051, and 7054 specify the provisions for the protection of human burial remains. Section 7050.5 of the HSC states the following:

> In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

Section 7051 of the HSC states the following:

> Every person who removes any part of any human remains from any place where it has been interred, or from any place where it is deposited while awaiting interment, cremation, or hydrolysis, with intent to sell it or to dissect it, without authority of law, or written permission of the person or persons having the right to control the remains under Section 7100, or with malice or wantonness, has committed a public offense that is punishable by imprisonment pursuant to subdivision (h) of Section 1170 of the Penal Code.

Section 7054 of the HSC states the following:

(a) (1) Except as authorized pursuant to the sections referred to in subdivision (b), every person who deposits or disposes of any human remains in any place, except in a cemetery, is guilty of a misdemeanor.

(2) Every licensee or registrant pursuant to Chapter 12 (commencing with Section 7600) of Division 3 of the Business and Professions Code and the agents and employees of the licensee or registrant, or any unlicensed person acting in a capacity in which a license from the Cemetery and Funeral Bureau is required, who, except as authorized pursuant to the sections referred to in subdivision (b), deposits or disposes of any human remains in any place, except in a cemetery, is guilty of a misdemeanor that shall be punishable by imprisonment in a county jail not exceeding one year, by a fine not exceeding ten thousand dollars ($10,000), or both that imprisonment and fine.

(b) Cremated remains or hydrolyzed human remains may be disposed of pursuant to Sections 7054.6, 7116, 7117, and 103060.

(c) Subdivision (a) of this section shall not apply to the reburial of Native American remains under an agreement developed pursuant to subdivision (l) of Section 5097.94 of the Public Resources Code, or implementation of a recommendation or agreement made pursuant to Section 5097.98 of the Public Resources Code.

PUBLIC RESOURCES CODE SECTION 5097.98

PRC Section 5097.98 addresses the disposition of Native American burials, protects such remains, and established the NAHC to resolve any related disputes. Section 5097.98 of the PRC states the following:

(a) Whenever the commission receives notification of a discovery of Native American human remains from a county coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American. The descendants may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American human remains and may recommend to the owner or the person responsible for the excavation work means for treatment or disposition, with appropriate dignity, of the human remains and any associated grave goods. The descendants shall complete their inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site.

(b) Upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and

conferred, as prescribed in this section, with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.

NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT

Health and Safety Code Sections 8010–8011 establishes a State repatriation policy intent that is consistent with and facilitates implementation of the federal Native American Graves Protection and Repatriation Act. The act strives to ensure that all California Indian human remains and that cultural and cultural items by publicly funded agencies and museums in California. It also states the intent for the State to provide mechanisms for aiding California Indian tribes, including non-federally recognized tribes, in filing repatriation claims and getting responses to those claims.

CALIFORNIA HEALTH AND SAFETY CODE SECTIONS 18950 THROUGH 18961

The State Historic Building Code (HSC; Sections 18950–18961) provide alternative building regulations and building standards for the rehabilitation, preservation, restoration (including related reconstruction), or relocation of buildings or structures designated as historic buildings. Such alternative building standards and building regulations are intended to facilitate the restoration or change of occupancy to preserve their original or restored architectural elements and features, to encourage energy conservation and a cost-effective approach to preservation, and to provide for the safety of the building occupants.

c. Local Laws, Regulations, and Policies

Stanislaus County General Plan

The Stanislaus County General Plan was adopted August 23, 2016. The Conservation Element of the General Plan establishes the following goal, policy, and implementation measures to ensure the preservation of archaeological and built environment historical resources.

Goal 8: Preserve areas of national, state, regional, and local historical importance

Policy 24. The County will support the preservation of Stanislaus County's cultural legacy of archeological, historical, and paleontological resources for future generations.

Policy 25. "Qualified Historical Buildings" as defined by the State Building Code shall be preserved.

In addition to the goals, policies, and implementation measures enumerated in the Conservation and Open Space Element, the Land Use Element outlines Historical Standards for the identification and treatment of historical resources and design of new construction intended preserve the historical character and setting of the unincorporated communities of Knight's Ferry and La Grange. To achieve this, the Historical Standards provide an inventory of building details identifying the predominant architectural details found within the community, suggested design principals and standards for new construction to ensure the compatibility of new construction with older buildings, and suggested guidelines for the rehabilitation of buildings, identifying specific preferred actions to ensure the ongoing historic preservation efforts. Additional guidelines are provided to ensure the preservation of the "agricultural/western 'small town' character" of the unincorporated community of Salida.

City of Ceres General Plan

City of Ceres General Plan 2035 provides several goals and policies intended to promote the preservation of archaeological and built-environment historical resources. The Land Use & Community Design Element identifies goals and policies that encourage the preservation of historical resources as a means of fostering a distinctive city identity to promote Ceres' appeal. The Agricultural and Natural Resources element outlines several additional goals and policies intended to preserve archaeological and built-environment historical resources through the registration, adaptive reuse, relocation, and protection of properties possessing historical and significance. Additional provisions promote the promote the retention of sites and resources associated with local Native American prehistory and history.

Ceres has adopted a historic preservation ordinance, the purpose of which is to promote the public health, safety, and general welfare by providing for the identification, protection, enhancement, perpetuation, and use of properties that reflect special elements of the City's historic, architectural, aesthetic, and other heritage. The ordinance provides for the creation and maintenance of a comprehensive survey and register of historic and cultural resources and provides certain provisions regulating the demolition or other alteration of a locally designated cultural resource.

City of Modesto General Plan

The Environmental Resources, Open Space, and Conservation of the Modesto General Plan identifies policies intended to identify and preserve archaeological and built environment historical resources. Two sets of policies apply to, on the one hand, the city's Downtown Area and Baseline Developed Area, and on the other, to the Planned Urbanizing Area. Generally, these policies propose regulations pertaining to zoning and the issuance of permits for the alteration of locally eligible historical resources.

Modesto's Landmark Preservation Ordinance is intended to preserve structures, natural features, sites and areas within the city of Modesto having historic, architectural, archeological, cultural, engineering or aesthetic significance. The City maintains a register of Modesto Landmark Preservation Sites, subject to the recommendation of the Historic Preservation Commission and approval of the City Council. Any building permit application which proposes to alter, renovate, or demolish a landmark or landmark-eligible property is subject to the review and approval of the Landmark Preservation Commission.

City of Turlock General Plan

The City of Turlock General Plan contains policies for the protection of built environment and archaeological historical resources. These policies include requirements for the identification and evaluation of cultural resources, implementation of environmental review procedures, protection of Native American heritage, and the preservation and adaptive reuse of historically significant structures, as well as efforts to ensure that development is compatible with the City's historic character.

Other City General Plans

The cities of Hughson, Newman, Oakdale, Patterson, Riverbank, and Waterford include General Plan policies and municipal regulations intended to identify, preserve, and enhance archaeological and built-environment historical resources. These generally emphasize documentation and evaluation of historic resources, compliance with CEQA review requirements, protection of Native American

cultural resources, and the maintenance of historic districts. Several cities, such as Hughson, Newman, and Patterson, have adopted historic preservation ordinances or overlay zoning districts that require review and approval for alterations, demolition, or new development affecting designated resources, often guided by established standards such as the Secretary of the Interior's Standards. Oakdale and Riverbank incorporate zoning tools, design guidelines, and cultural resource study requirements to ensure compatibility of new development with historic character. Collectively, these plans and regulations support ongoing inventory efforts, adaptive reuse of historic structures, and the preservation of community heritage through coordinated planning, regulatory review, and, in some cases, tourism and public education initiatives.

4.5.3 Impact Analysis

a. Methodology and Significance Thresholds

For this discussion, historical resources include archaeological and built environment resources that are eligible for inclusion in the NRHP, CRHR, or a local historic register. The level of significance of an impact to a historical resource is determined by whether that resource meets the criteria discussed below. Where the significance of a site is unknown, it is presumed to be a significant resource for the purpose of identifying potential areas of disturbance associated with construction projects or development in urban infill areas near high-quality transportation corridors as outlined in the proposed 2026 RTP/SCS.

Appendix G of the *CEQA Guidelines* identifies the following criteria for determining whether implementation of the proposed 2026 RTP/SCS' impacts would have a significant impact on cultural and historic resources:

1. Cause a substantial adverse change in the significance of a historical resource as defined in Section15064.5;
2. Cause a substantial adverse change in the significant of an archaeological resource pursuant to Section15064.5; and/or
3. Disturb any human remains, including those interred outside of formal cemeteries.

b. Project Impacts and Mitigation Measures

The following section presents a programmatic-level discussion of the potential for impacts to sensitive cultural resources from implementation of proposed 2026 RTP/SCS. Impacts and associated mitigation measures would apply in the StanCOG region and all cities within the County. Due to the programmatic nature of proposed 2026 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by proposed 2026 RTP/SCS could result in the impacts as described in the following section.

Threshold 1:	Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section15064.5?

Impact CUL-1 TRANSPORTATION IMPROVEMENT PROJECTS AND THE LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A HISTORICAL RESOURCE PURSUANT TO SECTION 15064.5. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

The location and nature of the proposed 2026 RTP/SCS projects were evaluated relative to the location of the known and potential historical resources listed in Table 4.5-1. Projects that involve bridge replacements and removal of other structures older than 50 years could generate an impact to structures, which can qualify as historical resources. Furthermore, projects that are adjacent to or near historical resources could have the potential to alter the integrity of those buildings and structures by changing their environmental context if the setting of that resource conveys the reasons for its significance.

The proposed 2026 RTP/SCS also has a future land use scenario that emphasizes infill development near transportation hubs in existing urbanized areas and includes some development in outlying areas. There are no specific development projects pursuant to the land use scenario envisioned by the proposed 2026 RTP/SCS identified and, thus, a project specific evaluation is not possible. However, because future infill near transit could be located near or adjacent to known or potential historical resources, the integrity of such resources could be indirectly or directly impacted as a result. Moreover, if future infill near transit would involve redevelopment/demolition of existing resources, it is possible that such resources could have historical significance (as determined by site specific evaluation) given the presence of buildings and structures that are over 45 years old within the StanCOG region, particularly within existing urbanized areas. Redevelopment or demolition could result in the permanent loss of historical resources. Similarly, while proposed transportation projects would not impact known historical resources, it is possible that such projects may require reconstruction or demolition of transportation infrastructure or other buildings or structures that are over 45years old, and which may be considered historically significant as determined by site specific evaluation. Such reconstruction or demolition would result in the material impairment of historical resources.

In general, prior to commencement of any action, development, or land use changes on lands subject to federal jurisdiction or for projects involving federal funding, a cultural resource survey and an environmental analysis must be prepared, including a historic resources assessment. Historic buildings and structures are protected under the regulations of the National Historic Preservation Act and the Department of Transportation Act of 1966. StanCOG-sponsored projects would be subject to local ordinance requirements within the jurisdiction in which they occur, including General Plan provisions that protect cultural resources. Nevertheless, impacts would be significant because there would be substantial adverse changes to buildings and structures that meet the definition of "historical resources" as defined in Section 15064.5(b) of the *CEQA Guidelines*. Thus, the following mitigation measures would be required for any project that may impact historical resources.

Mitigation Measure

For projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the proposed 2026 RTP/SCS program where applicable for projects that would result in impacts to historical

resources, and where feasible and necessary based on project and site-specific considerations. Cities and the County can and should implement these measures, where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

CUL-1 Built Environment Historical Resources

Prior to the issuance of an individual project permit, the implementing agency of a 2026 RTP/SCS project involving a building or structure over 45 years of age shall prepare a map defining the project area. This map shall indicate the areas of disturbance associated with construction and operation of the facility and will help in determining whether known and potential historical resources are located within the project area. If a building or structure greater than 45 years in age is within the identified impact zone, a survey and evaluation of the building(s) and/or structure(s) to determine their eligibility for recognition under State, federal, or local historic resource designation criteria shall be conducted. The evaluation shall be prepared by an architectural historian or historical architect meeting the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, Professional Qualification Standards (PQS) as defined in 36 CFR Part 61. All buildings and structures 45 years of age or older within the project area shall be evaluated in their historic context and documented in a report meeting the State Office of Historic Preservation guidelines. All evaluated properties shall be documented on Department of Parks and Recreation Series 523 Forms. The report shall be submitted to the implementing agency for review and concurrence.

If historical resources are identified within the project area of a proposed development, efforts shall be made to the extent feasible to ensure that impacts are mitigated. Application of mitigation shall generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the implementing agency for review.

To the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the *Secretary of the Interior's Standards for the Treatments of Historic Properties* (Standards). In accordance with CEQA, a project that has been determined to conform with the Standards generally would not cause a significant adverse direct or indirect impact to historical resources (14 CCR Section 15126.4(b)(1)). Application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the implementing agency for review and concurrence.

If significant historical resources are identified on a development site and compliance with the Standards and/or avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. Mitigation measures may include documentation of the historical resource in the form of a Historic American Building Survey-Like report. The report shall comply with the Secretary of the Interior's Standards for Architectural and Engineering Documentation and shall generally follow the HABS Level III requirements, including digital photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the PQS and submitted to the implementing agency prior to issuance of any permits for demolition or alteration of the

historical resource. Copies of the report shall be provided to a local library and/or other appropriate repositories.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

Significance After Mitigation

Redevelopment or demolition that may be required to implement transportation improvements and/or infill and other development may result in the permanent loss or damage to historical resources. While implementation of Mitigation Measure CUL-1 would reduce impacts to the extent feasible, some project-specific impacts may be unavoidable. Therefore, this impact is significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.

Threshold 2:	Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section15064.5?

Impact CUL-2 CONSTRUCTION ACTIVITY ASSOCIATED WITH TRANSPORTATION IMPROVEMENT PROJECTS, AND LAND USE DEVELOPMENT ENVISIONED BY THE IMPLEMENTATION OF PROPOSED 2026 RTP/SCS MAY CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF AN ARCHAEOLOGICAL RESOURCE PURSUANT TO SECTION15064.5. POTENTIAL IMPACTS TO ARCHAEOLOGICAL RESOURCES WOULD BE SIGNIFICANT AND UNAVOIDABLE.

It is known that archaeological resources are present throughout the StanCOG region. Therefore, it is possible to encounter known and unknown archaeological resources as a result of implementation of transportation improvement projects pursuant to the proposed 2026 RTP/SCS. Many of the improvements proposed under the 2026 RTP/SCS consist of minor expansions of existing facilities that would not involve construction in previously undisturbed areas. However, depending on the location and extent of the proposed improvement and ground disturbance, known and/or unknown cultural resources could be impacted. Project-specific analysis would be required as individual projects are proposed.

New projects in the proposed 2026 RTP/SCS that may disrupt previously undisturbed areas are listed in Table 2-1 of Chapter 2, *Project Description*. It is possible also that some of the proposed roadway or bridge widening or extension projects, listed in Table 2-1 of Chapter 2, *Project Description* would adversely impact archaeological resources. In particular, construction activities may disturb the resources thereby exposing them to potential vandalism or causing them to be displaced from the original context and integrity. Therefore, impacts to archaeological resources would be potentially significant. As mentioned above, specific analysis will be required as these individual projects are implemented.

The proposed 2026 RTP/SCS considers a future land use scenario that emphasizes infill near transit and in existing urbanized areas. However, it is possible that archaeological resources could be located on or near future infill development sites, and in undisturbed areas that would be developed during implementation of the proposed 2026 RTP/SCS. Project grading and excavation for development sites would disturb these undiscovered resources.

In general, prior to commencement of any action, development, or land use changes on lands subject to federal jurisdiction or for projects involving federal funding, a cultural resource survey and an environmental analysis must be prepared. County and city sponsored projects would be subject to local ordinance requirements, including General Plan provisions that protect cultural resources. Nevertheless, impacts to archaeological resources would be potentially significant because there could be substantial adverse changes to significant archaeological resources, i.e., archaeological resources that meet the definition of "historical resources" or "unique archaeological resources." Mitigation Measures CUL-2(a) and CUL-2(b) would reduce these impacts.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the proposed 2026 RTP/SCS program where applicable for transportation projects that would result in impacts to archaeological resources, and where feasible and necessary based on project and site-specific considerations. Cities and the County can and should implement these measures, where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

CUL-2(a) Archaeological Resources Impact Minimization

Before construction activities, implementing agencies shall, or can and should, retain a qualified archaeologist to conduct a record search at the Northwest Information Center to determine whether the project area has been previously surveyed and whether resources were identified. When recommended by the Information Center, implementing agencies shall, or can and should, retain a qualified archaeologist to conduct archaeological surveys before construction activities. Implementing agencies shall, or can and should, follow recommendations identified in the survey, which may include, but would not be limited to: subsurface testing, designing and implementing a Worker Environmental Awareness Program, construction monitoring by a qualified archaeologist, or avoidance of sites and preservation in place. Recommended mitigation measures will be consistent with *CEQA Guidelines* Section 15126.4(b)(3) recommendations and may include but not be limited to preservation in place and/or data recovery. All cultural resources work shall follow accepted professional standards in recording any find including submittal of standard DPR Primary Record forms (Form DPR 523) and location information to the appropriate California Historical Resources Information System office for the project area.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. These mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

CUL-2(b) Unanticipated Discoveries During Construction

During construction activities, implementing agencies shall, or can and should, implement the following measures. If evidence of any prehistoric or historic-era subsurface archaeological deposits (e.g., ceramic sherds, refuse scatters, lithic scatters, habitation debris, etc.), are discovered during construction-related earthmoving activities all ground-disturbing activity proximate to the discovery

shall be halted until a qualified archaeologist (36 CFR Section 61) can assess the significance of the find. If the find is a prehistoric archaeological site, the appropriate Native American group shall be notified. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the archaeologist determines that further information is needed to evaluate significance, a testing plan shall be prepared and implemented. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall work with the implementing agency to avoid disturbance to the resources, and if complete avoidance is not feasible in light of project design, economics, logistics and other factors, shall recommend additional measures such as the preparation and implementation of a data recovery plan. All cultural resources work shall follow accepted professional standards in recording any find including submittal of standard DPR Primary Record forms (Form DPR 523) and location information to the appropriate California Historical Resources Information System office for the project area. If the find is a prehistoric archaeological site, the culturally affiliated California Native American tribe shall be notified and afforded the opportunity to monitor mitigative treatment. During evaluation or mitigative treatment, ground disturbance and construction work could continue in other parts of the project area that are distant enough from the find not to impact it, as determined by the qualified archaeologist.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. These mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

Significance After Mitigation

Implementation of Mitigation Measures CUL-2(a) and CUL-2(b) would reduce potential impacts to archaeological resources to the extent feasible, but some project-specific impacts may be unavoidable. Therefore, this impact is significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.

Threshold 3:	Would the project disturb any human remains, including those interred outside of formal cemeteries?

Impact CUL-3 CONSTRUCTION ACTIVITY ASSOCIATED WITH TRANSPORTATION IMPROVEMENT PROJECTS, AND LAND USE DEVELOPMENT ENVISIONED BY IMPLEMENTATION OF PROPOSED 2026 RTP/SCS COULD RESULT IN DISTURBANCES TO HUMAN REMAINS INCLUDING THOSE INTERRED OUTSIDE OF FORMAL CEMETERIES. POTENTIAL IMPACTS TO HUMAN REMAINS WOULD BE LESS THAN SIGNIFICANT.

Human burials outside of formal cemeteries are often associated with prehistoric archaeological contexts. Therefore, it is possible to encounter unknown human burials because of implementation of transportation improvement projects under the proposed 2026 RTP/SCS. Excavation during construction activities in the StanCOG region would have the potential to disturb these resources, including Native American burials.

In addition to being potential archaeological resources, human burials have specific provisions for treatment in PRC Section 5097, as listed under Section 4.5.2, *Regulatory Setting*. The California Health and Safety Code (Sections 7050.5, 7051 and 7054) has specific provisions for the protection

of human burial remains. Existing regulations address the illegality of interfering with human burial remains, and protects them from disturbance, vandalism, or destruction, and established procedures to be implemented if Native American skeletal remains are discovered. PRC Section 5097.98 also addresses the disposition of Native American burials, protects such remains, and established the NAHC to resolve any related disputes. Implementation of these regulations would ensure that proposed 2026 RTP/SCS impacts to disturbance of human remains, including those interred outside of formal cemeteries would be less than significant.

Mitigation Measures

Mitigation measures are not required because this impact would be less than significant, as jurisdictions are required to follow the protection policies and ordinances as described above.

4.5.4 Cumulative Impacts

The cumulative impact analysis area for cultural resources consists of the StanCOG region and the adjoining counties, based on the historic, ethnographic, and prehistoric period use patterns of the region. Information regarding these adjoining counties can be found in Chapter 3, *Environmental Setting, 3.3.4 Approach for Cumulative Analysi*s. This is appropriate because cultural resources identified in this larger region will be similar in type and style to those that are or may be present in the StanCOG region. As discussed in Section 4.5.3, the changes envisioned in the proposed 2026 RTP/SCS could include projects that would require substantial ground disturbance in undisturbed areas or in infill areas, which could impact historic built environment resources and archaeological resources.

The increase in growth in previously undisturbed areas contributes to regional impacts on existing and previously undisturbed and undiscovered historic and archaeological resources, including CEQA-defined “historical resources.” While most cultural resources are site specific, with impacts that are project specific, others may have regional significance; for example, an historic structure that represents the last known example of its kind would constitute a regional impact if it were affected by future proposed 2026 RTP/SCS project implementation. In addition, there are historic districts or areas that can be affected by multiple or successive projects over time, resulting in a cumulative impact to the historic resource. For such a resource, cumulative impacts would be significant, and the proposed 2026 RTP/SCS contribution to them would be cumulatively considerable. Mitigation Measures CUL-1, CUL-2(a), and CUL-2(b) would reduce impacts associated with the proposed 2026 RTP/SCS projects through impact minimization for historical and archaeological resources. However, it cannot be guaranteed that all future project level impacts can be mitigated to a less than significant level. As such, the proposed 2026 RTP/SCS contribution would remain cumulatively considerable after mitigation.

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4.6 Energy

This section discusses the energy impacts of implementing transportation projects in the proposed 2026 RTP/SCS, as well as the energy-related consequences of the land use scenario envisioned in the proposed 2026 RTP/SCS.

4.6.1 Setting

Energy relates directly to environmental quality. Energy use can adversely affect air quality and other natural resources. Fossil fuels are burned to create electricity which powers homes and commercial/industrial buildings, to create heat and to power vehicles. Transportation energy use is related to the fuel efficiency of cars, trucks, and public transportation; choice of different travel modes (auto, carpool, and public transit); and miles traveled by these modes. Construction and routine operation and maintenance of transportation infrastructure also consume energy. In addition, residential, commercial and industrial land uses consume energy, typically through the use of natural gas and electricity.

a. Energy Supply

According to the U.S. Energy Information Administration (EIA), California's primary sources of fuel production in 2022 included approximately 44.6 percent crude oil, 11.5 percent nuclear energy, 11.5 percent natural gas, and 7.7 percent wood and waste, with the remainder derived from other renewable sources such as biofuels (U.S. EIA 2025a). In terms of electricity generation, California's 2022 energy mix consisted of approximately 47.3 percent non-hydroelectric renewable energy, 35.2 percent natural gas, 11.5 percent hydroelectric power, 5.9 percent nuclear energy, and 0.1 percent coal-fired generation (U.S. EIA 2025a).

Petroleum fuels are regulated by California Geologic Energy Management Division (CalGEM). This includes oil and gas activities within Stanislaus County by performing annual inspections of wells, facilities, pipelines, and other pertinent equipment throughout oil production leases. CalGEM is also responsible for protecting the health, safety, public welfare, physical environment, and natural resources of the County by the reasonable regulation of petroleum facilities and operations, including but not limited to: exploration (drilling), production, storage, processing, disposal, well plugging, and well abandonment (CalGEM 2025; CalGEM 2026).

According to CalGEM, there are wells in the County that are classified as idle, orphaned, abandoned, or cancelled oil wells in the La Grange and along State Route 33 (CalGEM 2026). The StanCOG region contains no active oil or gas wells.

b. Energy Consumption and Sources

Total energy consumption in the U.S. in 2023 was estimated at approximately 93,558 trillion Btu (U.S. EIA 2023a). Petroleum provided approximately 37.9 percent of the energy used in 2023 in the U.S. (U.S. EIA 2023b). In the same year, coal provided approximately 8.7 percent of energy consumed, natural gas provided approximately 35.9 percent, nuclear energy provided approximately 8.7 percent and total renewable sources supplied the rest at approximately 8.8 percent (U.S. EIA 2023b). On a per-capita basis, California is ranked second lowest of the states in terms of energy use in 2023 (173.9 million Btu per person), or about 37 percent less than the U.S.'s average per-capita consumption of 278 million Btu per person (U.S. EIA 2023c).

Electricity and Natural Gas

In 2024, California used 282,783 gigawatt hours (GWh) of electricity; approximately 62 percent of California's electricity supply came from renewable energy sources, such as wind, solar photovoltaic, geothermal, and biomass (CEC 2026a; CEC 2026b). In 2024, California also consumed approximately 11,104 million U.S. therms of natural gas (CEC 2026b). Table 4.6-1 illustrates the electricity and natural gas consumption of the County that makes up the StanCOG region and their proportion of statewide consumption in 2024. In addition, many rural areas within the Stanislaus region rely on wood, propane, or other liquefied petroleum gases (LPGs) as heating fuels.

Table 4.6-1 2024 Electricity and Natural Gas Consumption in the StanCOG Region

County	2024 Electricity Consumption (GWh)[1]	Electricity Consumption Per Capita Consumption (kWh)	Electricity Consumption Statewide Proportion	Natural Gas Consumption 2024 Consumption (MMthm)[2]	Natural Gas Consumption Per Capita Consumption (thm)	Natural Gas Consumption Statewide Proportion
Stanislaus	5,200	9,433	1.8%	194.14	352.15	1.7%

[1] Electricity consumption is quantified in Millions of Kilowatt-Hours (GWh), while per capita electricity is quantified in Kilowatt-Hours (kWh).

[2] Natural Gas consumption is quantified in Millions of Therms (MMthm), while per capita natural gas consumption is quantified in Therms (thm).

Note: The per capita consumption for natural gas and electricity are determined by using 2024 data from the CEC for overall county wide consumption and divided by the 2023 county population provided by StanCOG (551,297).

Sources: CEC 2026a; CEC 2026b; CEC 2026c; Appendix D

As shown in Table 4.6-1, the StanCOG region accounted for approximately 1.8 percent of the State's electricity consumption and 1.7 percent of the State's natural gas consumption in 2024. The Pacific Gas & Electric Company (PG&E) provides electric service to most of the StanCOG region (PG&E 2026). PG&E obtains its electricity from natural gas, fossil fuels, nuclear power, hydroelectric power, and eligible renewable resources.

Petroleum

Energy consumed by the transportation sector accounts for roughly 50.4 percent of California's energy demand, amounting to approximately 3,030 trillion Btu in 2023 (U.S. EIA 2025a). California's transportation sector, including on-road and rail transportation, consumed roughly 491,570,248 bbl of petroleum fuels in 2023 (U.S. EIA 2025a). Furthermore, petroleum-based fuels are used for approximately 98.0 percent of the State's transportation activity (U.S. EIA 2025a). Most gasoline and diesel fuel sold in California for motor vehicles is refined in California to meet state-specific formulations required by the California Air Resources Board (CARB). Major petroleum refineries in California are concentrated in three counties: Contra Costa, Kern, and Los Angeles (CEC 2026b). Fuel consumption for the StanCOG region can be found in Table 4.6-2 below.

Table 4.6-2 Fuel Consumption in StanCOG Region (2024)

Fuel	2024 Annual Fuel Use (million gallons)	2024 Annual Fuel Use (million Btu)	2024 Daily Energy Use (million Btu)	2024 Daily Per Capita Energy Use (thousand Btu)
Gasoline	229	25,141,037	68,879.55	124.94
Diesel	64	8,157,440	22,349.15	40.54
Total	**293**	**33,298,477**	**91,228.70**	**165.48**

Btu = British Thermal Units

Notes: Per capita energy use was calculated by using 2024 fuel use data divided by StanCOG's 2023 population statistic of 551,297. Btus were calculated by multiplying Annual Fuel Use by U.S. EIA conversion values for motor gasoline and diesel

Sources: CEC 2026d, Appendix D

Transportation metrics show that approximately 11.7 million vehicle miles were traveled each day within the StanCOG region in 2023.Table 4.6-3 illustrates the daily and annual VMT for the StanCOG region in 2023.

Table 4.6-3 Daily and Annual VMT for the StanCOG Region in 2023

Daily VMT	Annual VMT
11,736,343	4,283,765,195

Note: individual numbers may not add up to totals due to rounding.

Source: StanCOG Model, Appendix E

Alternative Fuels

A variety of alternative fuels are used to reduce petroleum-based fuel demand. The use of these fuels is encouraged through various statewide regulations and plans, such as the Low Carbon Fuel Standard and Senate Bill (SB) 32. Conventional gasoline and diesel may be replaced, depending on the capability of the vehicle with transportation fuels including the following:

- **Hydrogen** is being explored for use in combustion engines and fuel cell electric vehicles. The interest in hydrogen as an alternative transportation fuel stems from its clean-burning qualities, its potential for domestic production, and the fuel cell vehicle's potential for high efficiency, which is two to three times more efficient than gasoline vehicles. Currently, 46 hydrogen refueling stations are located in California; There are no hydrogen fueling stations located in the StanCOG region (U.S. Department of Energy [DOE] 2025).
- **Biodiesel** is a renewable alternative fuel that can be manufactured from vegetable oils, animal fats, or recycled restaurant greases. Biodiesel is biodegradable and cleaner-burning than petroleum-based diesel fuel. Biodiesel can run in any diesel engine generally without alterations; however, fueling stations have been slow to make it available. There are currently 425 biodiesel refueling stations in California, four of which are located in the StanCOG region (DOE 2025).
- **Electricity** can be used to power electric and plug-in hybrid electric vehicles directly from the power grid. Electricity used to power vehicles is generally provided by the electricity grid and stored in the vehicle's batteries. Fuel cells are being explored as a way to use electricity generated onboard the vehicle to power electric motors. There are approximately 19,402 public electric Level 2 and DC Fast charging stations in California, of which there are approximately seven in the StanCOG region (DOE 2025).

4.6.2 Regulatory Setting

Programs and policies at the State and national levels have emerged to bolster the previous trend towards energy efficiency, as discussed below.

a. Federal Laws, Regulations, and Policies

Federal Fuel Economy and Emissions Standards

Corporate Average Fuel Economy Standards

The Energy Policy and Conservation Act in 1975 established the Corporate Average Fuel Economy Standards (CAFE) standards are Federal rules established by the National Highway Traffic Safety Administration (NHTSA) that set fuel economy standards for all new passenger cars and light trucks sold in the United States. The CAFE standards (40 CFR Parts 531, 531.5 and 533) become more stringent each year, reaching an estimated 38.3 miles per gallon for the combined industry-wide fleet for model year 2020 (77 Federal Register 62624 et seq. [October 15, 2012, Table I-1]). In August 2016, the U.S. Environmental Protection Agency and NHTSA announced the adoption of the phase two programs related to the fuel economy and greenhouse gas (GHG) standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi- trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. These standards are expected to lower carbon dioxide (CO_2) emissions by approximately 1.1 billion metric tons (MT) and reduce oil consumption by up to two billion barrels over the lifetime of the vehicles sold under the program.

On June 7, 2024, the NHTSA issued new vehicle fuel economy standards. In this final rule, fuel economy will increase 2 percent per year for model years 2027-2031 for passenger cars, while light trucks will increase 2 percent per year for model years 2029-2031. These increases will bring the average light-duty vehicle fuel economy up to approximately 50.4 miles per gallon by model year 2031.

Heavy-duty pickup truck and van fuel efficiency will increase 10 percent per year for model years 2030-2032 and 8 percent per year for model years 2033-2035. This will result in a fleetwide average of approximately 35 miles per gallon by model year 2035. These improved standards will save almost 70 billion gallons of gasoline through 2050, preventing more than 710 million metric tons of carbon dioxide emissions by 2050.

In 2024, CAFE standards were finalized for model years (MYs) 2027 through 2031. The final rule establishes standards that require an industry-wide fleet average of approximately 49 miles per gallon (mpg) for passenger cars and light trucks.

On February 18, 2026, The U.S Environmental Protection Agency (USEPA) rescinded the Clean Air Act Endangerment Finding for GHGs and repealed all GHG emission standards for light-duty, medium-duty, and heavy-duty vehicles and engines pursuant to CAA Section 202(a) (USEPA 2026). The proposed rule removed GHG-related provisions from 40 CFR part 600 without affecting provisions related to CAFE standards and fuel economy labeling.

Executive Order 14154

Issued on January 20, 2025, Executive Order 14154 establishes a national policy aimed at expanding domestic energy production, with a particular emphasis on fossil fuels and critical minerals. The order revokes several prior climate-focused executive orders and terminates the American Climate Corps. It eliminates federal support for electric vehicle mandates and energy efficiency standards for appliances. Additionally, it directs federal agencies to expedite permitting under the National Environmental Policy Act and revise National Environmental Policy Act regulations to prioritize permitting efficiency over environmental considerations. Funding under the Inflation Reduction Act and the Infrastructure Investment and Jobs Act is suspended pending review for consistency with the Administration's energy policy.

Executive Order 14156

Also issued on January 20, 2025, Executive Order 14156 declared a national emergency due to insufficient domestic energy supply and infrastructure. It invokes emergency authorities under the Defense Production Act and the Clean Water Act to accelerate energy infrastructure development. The order directs agencies to prioritize permitting and leasing for energy projects on federal lands and requires streamlined consultations under the Endangered Species Act, including convening the Endangered Species Act Committee to address regulatory barriers. Energy security is emphasized as a national defense priority, particularly in regions with 'constrained supply' such as the Northeast and West Coast.

Executive Order 14260

Issued on April 8, 2025, Executive Order 14260 challenges state-level climate and energy regulations that are deemed to exceed constitutional authority. It directs the Attorney General to identify and pursue legal action against state laws that impose retroactive fines, carbon caps, or other climate-related claims. The order specifically targets policies in states such as California, New York, and Vermont that regulate emissions or energy infrastructure in ways that may affect interstate commerce. It asserts federal primacy over energy regulation and seeks to prevent states from influencing national energy policy through environmental justice or environmental, social, and governance frameworks.

Executive Order 14361

Also issued on April 8, 2025, Executive Order 14261 designates coal as a "critical mineral" and prioritizes its development and export. The order directs federal agencies to remove barriers to coal leasing and expedite environmental reviews. It terminates the Jewell Coal Leasing Moratorium and encourages reductions in royalty rates. The order promotes coal-powered infrastructure for artificial intelligence data centers and steel production and calls for expanded use of categorical exclusions under National Environmental Policy Act for coal-related projects.

Executive Order 14262

Issued on April 8, 2025, Executive Order 14262 addresses rising electricity demand driven by artificial intelligence and manufacturing. It directs the Department of Energy to streamline emergency orders under the Federal Power Act to prevent grid failures. The order mandates the development of a national methodology to assess reserve margins and identify regions at risk of

reliability issues. It also requires the retention of critical generation resources, including fossil-fueled power plants, to ensure grid reliability.

b. State Laws, Regulations, and Policies

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as CEC. The Act established a State policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The California Public Utilities Commission (CPUC) regulates privately-owned utilities in the energy, rail, telecommunications, and water fields.

Integrated Energy Policy Report

Senate Bill (SB) 1389 (Chapter 568, Statutes of 2002) required CEC to conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The CEC shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety.

CEC prepares an Integrated Energy Policy Report (IEPR) every two years, with updates published in alternating years, pursuant to Senate Bill 1389 (Bowen, Chapter 568, Statutes of 2002). The 2025 IEPR Update provides a comprehensive assessment of California's energy system and outlines strategies to support the state's goals for reliable, affordable, and environmentally responsible energy (CEC 2026d). Topics addressed include electricity and natural gas demand forecasts, transportation energy trends, energy efficiency savings, distributed energy resources, strategic transmission planning, climate adaptation and resilience, and emerging technologies such as wave and tidal energy.

The report highlights California's progress toward decarbonization, including the retirement of over 16,000 megawatts (MW) of fossil fuel generation since 2010 and the addition of more than 22,000 MW of clean energy resources. Battery storage capacity has expanded from 770 MW in 2019 to over 13,000 MW in 2024. In the first nine months of 2024 alone, California added nearly 4,000 MW of new energy resources, primarily from solar and battery storage.

California Renewables Portfolio Standard Program

Senate Bill 1078 (Chapter 516, Statutes of 2002) established California's initial Renewables Portfolio Standard (RPS), requiring retail sellers of electricity—including investor-owned utilities and community choice aggregators—to procure 20 percent of their electricity from renewable sources by 2017. The legislation also mandated annual increases in renewable procurement of at least one percent.

This goal was later accelerated by Senate Bill 107 (2006), which moved the 20 percent target forward to 2010. California successfully met this revised target and has continued to expand its RPS program through subsequent legislation. The RPS has since evolved to require 33 percent renewable electricity by 2020 (SB 2 [1X]), 50 percent by 2030 (SB 350 of 2015), and 60 percent by 2030 with a goal of 100 percent carbon-free electricity by 2045 (SB 100 of 2018). SB 350 (2015) established the CPUC's Integrated Resources Plan (IRP) framework, requiring load-serving entities such as SCE (the utility provider for the majority of the County) to prepare plans demonstrating how they will meet

electricity demand while achieving the State's GHG reduction and clean energy goals. SCE's IRP therefore operationalizes SB 350 by identifying a long-term portfolio of resources and procurement strategies that align utility planning with statewide climate and energy policy objectives.

The RPS program is jointly implemented by the CPUC and CEC and has been instrumental in driving the development of solar, wind, geothermal, and other renewable energy resources statewide.

2022 Scoping Plan

The 2022 Scoping Plan outlines California's strategy to achieve carbon neutrality by 2045 through a comprehensive transformation of the state's energy systems (CARB 2022). The Scoping Plan calls for a dramatic reduction in fossil fuel combustion, particularly petroleum, by deploying clean technologies, expanding renewable energy generation, and electrifying end uses across sectors. It recommends building no new fossil gas-fired power plants and accelerating the retirement of existing ones, while increasing investments in zero-emission vehicles, building decarbonization, and clean fuels. The Scoping Plan emphasizes the need for unprecedented build-out of renewable and zero-carbon electricity generation and storage to meet rising demand from electrification in transportation and buildings. It also supports a multi-agency process to ensure an equitable transition away from oil extraction and refining, especially in communities disproportionately burdened by pollution. These energy recommendations are designed to help reduce greenhouse gas emissions by 85 percent below 1990 levels, cut air pollution by 71 percent, and improve public health and economic resilience statewide.

Senate Bill X1-2

Senate Bill X1-2, signed into law by Governor Brown in 2011, expanded California's RPS program by requiring retail sellers of electricity, including investor-owned utilities, publicly owned utilities, and community choice aggregators, to procure at least 20 percent of electricity retail sales from eligible renewable energy resources by 2010, and 33 percent by 2020. This legislation built upon earlier RPS mandates and established a more aggressive timeline for renewable energy integration.

CPUC and CEC jointly implement the statewide RPS program through rulemaking, compliance monitoring, and oversight of procurement activities. The program has been instrumental in accelerating the deployment of solar, wind, geothermal, and other renewable energy technologies across the state.

California successfully met the 33 percent RPS target by 2020 and continues to advance toward more ambitious goals established under subsequent legislation, including Senate Bill 100, which mandates 60 percent renewable electricity by 2030, and 100 percent zero-carbon electricity by 2045.

Senate Bill 350

In 2015, Governor Brown signed SB 350, which established new renewable portfolio standard targets, requiring retail sellers of electricity to provide at least 50 percent of electricity retail sales from renewable sources by 2030. SB 350 also set a goal of doubling energy efficiency savings in electricity and natural gas by 2030.

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard Program. SB 100

requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 50 percent by 2026, 60 percent by 2030, and 100 percent by 2045.

Assembly Bill 1493 and Advanced Clean Cars

Assembly Bill (AB) 1493 (Chapter 200, Statutes of 2002), known as the "Pavley bill," amended Health and Safety Code Sections 42823 and 43018.5 requiring CARB to develop and adopt regulations that achieve maximum feasible and cost-effective reduction of GHG emissions from passenger vehicles, light-duty trucks and other vehicles used for noncommercial personal transportation in California.

Implementation of new regulations prescribed by AB 1493 required that the State of California apply for a waiver under the federal Clean Air Act. Although USEPA initially denied the waiver in 2008, USEPA approved a waiver in June 2009, and in September 2009, CARB approved amendments to its initially adopted regulations to apply the Pavley standards that reduce GHG emissions to new passenger vehicles in model years 2009 through 2016. In 2012, CARB approved the Low-Emission Vehicle III GHG regulation, which requires further reductions in passenger GHG for 2017 and subsequent vehicle model years. According to CARB, implementation of the Pavley regulations is expected to reduce fuel consumption while also reducing GHG emissions.

In 2022, CARB approved the Advanced Clean Cars II rule regulating model years from 2026 to 2035. The rule establishes a year-by-year roadmap so that by 2035, 100 percent of new cars and light trucks sold in California would be zero-emission vehicles, including plug-in hybrid electric vehicles. The regulation realizes and codifies the light-duty vehicle goals set out in Governor Newsom's Executive Order N-79-20. By 2040, CARB anticipates that the rule would reduce GHG emissions from light-duty vehicles by 50 percent for a cumulative total of 395 MMT CO_2e from 2026 through 2040. The EPA granted CARB its California's Clean Air Act waiver request for the Advanced Clean Cars II rule on December 18, 2024. However, Public Law 119-16 enacted on June 12, 2025, disapproves of this regulation under the Congressional Review Act, retroactively revoking the state's waiver issued by USEPA under the Clean Air Act to implement the Advanced Clean Cars II rule.

Advanced Clean Trucks and Low-NOx Regulation

The Advanced Clean Trucks rule is a CARB regulation (CCR, Title 13, Section 1963 – 1963.5) that requires medium and heavy-duty truck manufacturers to gradually increase the percentage of zero-emission vehicles they sell in the state. Effective in March 2021, the rule mandates that by 2035, 55 percent of Class 2b-3 truck sales, 75 percent of Class 4-8 straight truck sales, and 40 percent of truck tractor sales must be zero-emissions vehicles. The goal is to accelerate the transition to zero-emission trucks. USEPA granted the waiver request under the CAA to enact the more stringent fuel economy components of the ACT regulation on April 6, 2023. However, Public Law 119-15 enacted on June 12, 2025, disapproves of this regulation under the Congressional Review Act, retroactively revoking the state's waiver issued by USEPA under the Clean Air Act to implement the Advanced Clean Trucks regulation.

The Heavy-Duty Low-NO_X Omnibus Regulation was adopted by CARB in 2021 (effective December 22, 2021; amended in May 2024), and mandates steep reductions in NO_X and PM emissions from new medium- and heavy-duty diesel and Otto-cycle engines starting with model year 2024. By full rollout, the regulation is projected to eliminate approximately 17–23 tons/day of NO_X by 2031. However, Public Law 119-17, enacted on June 12, 2025, disapproves of this regulation under the Congressional Review Act, retroactively revoking the state's waiver issued by USEPA under the Clean Air Act to implement the low-NO_X regulation.

Drayage Truck Regulation

CARB established the Drayage Truck Regulation as part of its ongoing efforts to reduce PM and NOx emissions from diesel-fueled engines and improve air quality associated with goods movement. The purpose of this regulation is to reduce emissions and public exposure to diesel PM, NOx, and other air contaminants by setting emission standards for in-use, heavy-duty diesel-fueled vehicles.

CARB adopted the Advanced Clean Fleets (ACF) Regulation (CCR Title 13, Division 3, Chapter 1, Article 4) in 2023, which included updated requirements for drayage trucks operating at seaports and intermodal railyards. Beginning January 1, 2024, only zero-emission drayage trucks can be newly registered in CARB's Truck Regulation Upload, Compliance, and Reporting System. Existing legacy trucks must meet annual operational and useful life requirements to remain in service, with non-compliant vehicles removed from the registry starting in 2025. By 2035, all drayage trucks operating in California must be zero-emission, supporting statewide goals to reduce diesel particulate matter, NOx, and greenhouse gas emissions, particularly in communities disproportionately impacted by freight-related pollution.

On January 23, 2025, CARB withdraw is request for a Clean Air act waiver for the ACF Regulation. CARB is not enforcing the federal and private fleets portions of the ACF that require a Clean Air Act waiver, but is enforcing portions of the ACF Regulation that do not require a Clean Air Act waiver, such as the state and local government fleets portion.

Assembly Bill 1007

AB 1007 (Chapter 371, Statutes of 2005) required CEC to prepare a State plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan in partnership with the CARB and in consultation with other State, federal and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non- petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Executive Order S-01-07

Executive Order S-01-07, issued in 2007, directed CARB to develop and implement a Low Carbon Fuel Standard (LCFS) aimed at reducing the carbon intensity of transportation fuels used in California. Codified in 17 California Code of Regulations Section 95480 et seq., the LCFS originally required a 10 percent reduction in average fuel carbon intensity by 2020 and was designated as an early action measure under Assembly Bill 32 (Global Warming Solutions Act of 2006).

CARB has amended the LCFS multiple times to align with California's evolving climate and energy goals. In 2018, amendments extended carbon intensity reduction targets through 2030 and introduced crediting mechanisms for zero-emission vehicles, alternative jet fuels, carbon capture and sequestration, and other advanced technologies. In 2025, CARB adopted further amendments that took effect on July 1, 2025, establishing new targets to reduce fuel carbon intensity by 30 percent by 2030 and 90 percent by 2045.

The LCFS remains in effect and continues to be a cornerstone of California's strategy to decarbonize the transportation sector. Since its inception, the program has displaced over 30 billion gallons of petroleum fuel, reduced fuel carbon intensity by nearly 13 percent, and generated approximately $4

billion annually in private sector investment. It is projected to reduce greenhouse gas emissions by 558 million metric tons, NO_x by 25,500 tons, and $PM_{2.5}$ by 4,200 tons between 2025 and 2045.

Executive Order N-79-20

Executive Order N-79-20 established a Statewide goal that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035. A further goal of the State is that 100 percent of medium- and heavy-duty vehicles in the State be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks.

California Building Energy Efficiency Standards

The California Code of Regulations Title 24 is referred to as the Building Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings to reduce California's energy demand. New construction and major renovations must demonstrate their compliance with the current Energy Code through submittal and approval of a Title 24 Compliance Report to the local building permit review authority and the CEC.

Future land use projects would be subject to the 2025 California Building Energy Efficiency Standards, codified in Title 24, Part 6 of the California Code of Regulations, which take effect on January 1, 2026. These standards are designed to reduce energy consumption in residential and non-residential buildings, support California's climate goals, and improve indoor environmental quality.

Key updates to the 2025 standards include expanded requirements for heat pump technologies, electric readiness for future electrification, enhanced ventilation and indoor air quality measures, and battery storage system readiness for homes with larger electrical service capacities. These measures are expected to reduce building energy demand, lower greenhouse gas emissions, and support integration of distributed energy resources.

AB 130 of 2025 imposes a moratorium on changes to California building codes affecting residential units, including both state and local amendments, through 2031, with limited exemptions. Essentially, AB 306 would prohibit CEC or any other adopting agency from considering, approving, or adopting any proposed building standards affecting residential units, unless a certain condition is met, including that the CEC deems those changes necessary as emergency standards to protect health and safety. The 2025 Energy Code will proceed as planned with an effective date of January 1, 2026, and the 2031 Energy Code cycle is anticipated to be unaffected.

California Green Building Standards Code

The 2026 California Green Building Standards Code (CALGreen), codified in Title 24, Part 11 of the California Code of Regulations, and effective in 2025, establishes mandatory minimum environmental performance standards for newly constructed residential and non-residential buildings statewide. These standards are enforced by local jurisdictions and address key sustainability areas including energy efficiency, water conservation, material resource efficiency, and indoor environmental quality.

CALGreen also includes voluntary tiers (Appendices A4 and A5) that provide enhanced environmental performance options. These voluntary measures are intended as model provisions for jurisdictions considering above-code ordinances (also known as "reach codes") or for builders seeking additional compliance flexibility under the California Energy Code.

c. Local Laws, Regulations, and Policies

Stanislaus County General Plan

The Stanislaus County General Plan Conservation/Open Space Element includes goals and policies that would reduce energy use in the County. The reduction in motor vehicle emissions and traffic congestion would result in part from reduced transportation energy consumption (Stanislaus County 2016). The Stanislaus County General Plan contains the following goals and policies regarding energy consumption:

- **Policy Thirty**: The County shall provide zoning mechanism for locating material recovery facilities, recycling facilities, composting facilities, mini-hydroelectric plants, and alternative energy sources.
- **Policy Thirty-One**: New Construction by the County shall meet or exceed code requirements for energy conservation.

City of Ceres General Plan

The City of Ceres General Plan describes energy conservation measures within its Health and Safety Element. These policies focus specifically on reducing overall energy demand and improving efficiency through green building standards, energy-efficient design, and lighting requirements, as well as encouraging retrofits of existing buildings. The policies also promote the use of renewable energy sources and support infrastructure for electrification, such as zero-emission vehicles (City of Ceres 2018). In addition, the City emphasizes reducing energy consumption in municipal operations, monitoring energy-related GHG emissions, and advancing energy conservation through public outreach and coordination with local utilities.

City of Modesto General Plan

The City of Modesto General Plan contains air quality policies aimed at reducing emissions associated with energy use by residences and businesses and energy conservation policies specifically aimed at requiring Leadership in Energy and Environmental Design certification and implementation of CALGreen standards in new development (City of Modesto 2019). The Environmental Resources and Conservation Element contains the following policies regarding energy conservation.

Policy 2-g. Encourage the use of solar energy systems for residential, agricultural, parks, public building, and business purposes as provided in Government Code Section 65850.5.

Policy 2-k. Reduce heat gain from pavement minimizing street rights-of-way and pavement widths. Reinstate the use of parkway strips with trees where feasible, to provide shading of streets.

Policy 2-o. Encourage new residential, commercial, and industrial development to reduce air quality impacts from area sources and from energy consumption.

City of Turlock General Plan

The City of Turlock's General Plan Chapter 8.2, *Energy and Climate Change*, contains the following policies aimed at improving air quality through energy conservation and the use of clean energy (City of Turlock 2012):

Policy 8.2-a. Promote a broad range of transportation, land use, and site design measures that result in a decrease in the number of automobile trips and vehicle-miles traveled per capita.

Policy 8.2-c. Encourage energy efficiency through good urban design and site planning practices, as well as through building design, maintenance and retrofit.

Policy 8.2-e. Support understanding of the relationship between energy consumption, air quality, and greenhouse gases, and promote energy-saving practices.

Other City General Plans

Other cities within the StanCOG region include Hughson, Newman, Oakdale, Patterson, Riverbank, and Waterford. The General Plans of the cities of Riverbank, Patterson, Oakdale, Newman, Waterford, and Hughson include policies that support energy conservation, energy efficiency, and renewable energy development. For example, the City of Patterson's General Plan includes policies requiring coordination with local utilities and the building industry to promote enhanced energy conservation standards for new construction and encouraging the use of energy-efficient designs and equipment. Similarly, the City of Oakdale's General Plan includes policies that encourage renewable energy systems, building efficiency measures that exceed State standards, and energy-conscious land use planning. Other StanCOG jurisdictions include comparable policies promoting compliance with State energy efficiency requirements, incorporation of solar energy technologies, electrification and alternative-fuel infrastructure, passive building design, and public education regarding energy conservation. Collectively, these General Plans establish a local policy framework that supports implementation of State energy objectives, including reducing energy consumption, increasing energy efficiency, and expanding the use of renewable energy resources throughout the StanCOG region.

4.6.3 Impact Analysis

a. Methodology and Significance Thresholds

Direct and Indirect Energy Consumption

As this analysis is programmatic and specific details related to construction and timing for transportation and land use development projects implementing the 2026 RTP/SCS are not known at this time, energy consumption from construction activities and future land use operations is assessed qualitatively. Construction energy use, such as fuel consumption from equipment, worker commutes, and material delivery, is typically short-term and would vary depending on the nature and timing of individual projects. Similarly, operational energy use from buildings (e.g., electricity and natural gas) is also speculative due to the absence of detailed project-specific information. In accordance with CEQA Guidelines Appendix G, this section provides a qualitative discussion of potential energy impacts from construction of and operation land use projects.

The calculation of total energy consumption from transportation during operation for this analysis follows the Input-Output methodology suggested by Caltrans (Caltrans 1983). Caltrans methodology provides the calculation of the cumulative transportation energy consumption, including energy consumption that would be due to the construction of 2026 RTP/SCS projects, and energy consumption that is not due to the 2026 RTP/SCS, but rather is due to changes in VMT caused by socioeconomic growth (e.g., population and employment), land use policies, and the existing transportation infrastructure.

Energy consumption from transportation projects is categorized in terms of direct and indirect energy, defined below.

Direct Energy Consumption for Transportation Projects

Direct energy is that energy used in the daily operation of the transportation system, including the propulsion of passenger vehicles (automobiles, vans, and trucks) and transit vehicles (buses and trains). The direct energy analysis for the project is based on 2023 and 2049 VMT with and without the 2026 RTP/SCS (as analyzed in Section 4.14, *Transportation*).

The 2024 daily gasoline and diesel fuel consumption data for the StanCOG region was converted to Btu (refer to Table 4.6-2) and divided by region wide daily VMT (refer to Table 4.6-3) to derive a regional Btu/VMT conversion factor of 7,773 Btu per VMT.

It should be noted that the Btu/VMT factor is forecast to continue to decrease into the future as a result of improved fuel economy. Applying the 2023-based factor to future year (2049) VMT therefore provides a reasonable worst-case evaluation of energy consumption as the energy efficiency of vehicles in 2049 is anticipated to be higher than the fuel efficiency of current vehicles.

Indirect Energy Consumption

Indirect energy is the energy required to construct, operate, and maintain the transportation network, as well as to manufacture and maintain on-road vehicles and transit vehicles. Therefore, construction-related impacts associated with the proposed 2026 RTP/SCS are included in the indirect energy analysis. The indirect energy analysis was conducted using the Input-Output methodology developed by Caltrans (1983). This method converts VMT, lanes-miles, or construction dollars into energy consumption based on data from other transportation projects in the United States. Table 4.6-4 shows the indirect energy consumption factors used in this analysis. It should be noted that indirect energy consumption due to production of fuel and transportation/transmission to the end users is not included in this analysis, as any such analysis would be speculative.

Table 4.6-4 Indirect Energy Consumption Factors

Mode	Factor
Manufacturing	
Passenger Vehicles	1,410 Btu/VMT
Transit Buses	3,470 Btu/VMT
Roadway (construction)	27,300 Btu/VMT
Rail (construction)	2,108 Btu/VMT
Maintenance	
Passenger Vehicles	1,400 Btu/VMT
Transit Buses	13,142 Btu/VMT
Rail	7,060 Btu/VMT

Source: Caltrans 1983

Appendix G of the CEQA Guidelines identifies the following criteria for determining whether a project's impacts would have a significant impact to energy resources. Because the proposed 2026 RTP/SCS is a regional plan and not a specific and single construction project. This is consistent with

the programmatic nature of the EIR. For the purposes of this EIR, implementation of the proposed 2026 RTP/SCS would have a significant impact if it would:

1. Result in significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation (including transportation), based on whether the project would:
   a. Result in an increase in overall per-capita energy consumption relative to baseline conditions;
   b. Result in an increased reliance on fossil fuels and decreased reliance on renewable energy sources; and/or
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

b. Project Impacts and Mitigation Measures

The following section discusses potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2026 RTP/SCS. Due to the programmatic nature of the proposed 2026 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement projects and future projects under the land use scenario envisioned by the proposed 2026 RTP/SCS could result in the impacts as described in the following section.

Threshold 1a:	Would the project result in significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation (including transportation), based on whether the project would result in an increase in overall per-capita energy consumption relative to baseline conditions?

Impact E-1 FUTURE TRANSPORTATION IMPROVEMENT PROJECTS AND IMPLEMENTATION OF THE LAND USE SCENARIO ENVISIONED BY THE 2026 RTP/SCS WOULD NOT RESULT IN A SIGNIFICANT ENVIRONMENTAL IMPACT DUE TO WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION OF ENERGY RESOURCES OR INCREASED RELIANCE ON FOSSIL FUELS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Construction and maintenance of the proposed 2026 RTP/SCS projects would result in short-term consumption of energy resulting from the use of construction equipment and processes. In addition, roadway and transit construction materials, such as asphalt, concrete, surface treatments, steel, rail ballast, as well as building materials, require energy to be produced, and would likely be used in projects that involve new construction or replacement of older materials, as well as construction of future infill and transit-oriented development (TOD) projects envisioned by the proposed 2026 RTP/SCS. The California Green Building Standards Code (CALGreen Code) includes specific requirements related to recycling, construction materials, and energy efficiency standards, which would apply to construction of roadway and transit improvement projects, as well as future infill and TOD envisioned by the proposed 2026 RTP/SCS and would help to minimize waste and energy consumption. All construction and maintenance conducted pursuant to the proposed 2026 RTP/SCS, or as a result of improvements made by the proposed 2026 RTP/SCS, would be required to comply with the CALGreen Code.

Daily operation of the StanCOG region's transportation system uses energy in the form of fuel consumed by propulsion of passenger vehicles (automobiles, vans, and trucks) and transit vehicles (buses and trains). Some highway and roadway improvements included in the 2026 RTP/SCS will increase vehicle capacity, allowing a greater number of vehicles to use County facilities. However, increasing capacity and improving roadways and intersections does not necessarily result in an increase in motor vehicle trips. Increases in motor vehicle trips are primarily a combined function of population growth and employment growth. It should be noted that population growth and an increase in VMT would occur within the region regardless of whether the 2026 RTP/SCS is implemented. As a result, energy consumption as it relates to vehicles would increase beyond the 2023 baseline in any scenario. The 2026 RTP/SCS would help to minimize energy consumption by improving the overall efficiency of the transportation system. In addition, many 2026 RTP/SCS projects (e.g., carshare and bikeshare, parking management and an electric vehicle infrastructure charging incentive program) as well as the proposed infill land use pattern would improve the availability of alternative transportation modes, help reduce congestion, and resultant harmful air quality emissions in the County. Generally, the availability of these alternative modes would be expected to reduce overall motor vehicular trips, VMT, and associated energy consumption.

Table 4.6-5 shows the VMT, estimated to increase proportionally with population growth in the StanCOG region, and estimated fuel consumption translated into energy use (Btu) in the StanCOG region under 2023 conditions and the proposed 2026 RTP/SCS.

Table 4.6-5 Direct and Per-Household Transportation Energy Use

Year	Daily VMT	Direct Energy Use (Daily MMBtu)	Per Household Energy Use (Daily Thousand Btu)	Energy Use per Capita (Daily Thousand Btu)
2023 Baseline	11,736,343	91,229	519.7	165.5
2049 with 2026 RTP/SCS	13,012,130	101,146	527.5	168.0
Change % (Baseline vs. 2026 RTP/SCS)	**11%**	**11%**	**1.5%**	**1.5%**

Note: The per capita and per household transportation consumption are determined by using county population and household forecasts provided by StanCOG.

Sources: CEC 2026a; CEC 2026b, Appendix D

As shown in Table 4.6-5, countywide daily VMT and total daily energy use would increase by approximately 11 percent from baseline (2023) to Year 2049 (with Project) as a result of regional socioeconomic (population and employment) growth. However, the proposed 2026 RTP/SCS would only result in a 1.5 percent increase in per-capita and per-household energy usage when compared to 2023 baseline conditions. The per-household and per-capita reductions in energy use increases would be partially attributed to reduced traffic congestion, more efficient road network, alternative modes of transportation, increases in vehicle fuel efficiency over time, and more efficient transit-oriented land use patterns. The Low Carbon Fuel Standard, encouraging the use of more efficient fuels, along with the Energy Policy and Conservation Act, the Energy Independence and Security Act, and the CAFE fuel efficiency standards, among other regulations, all require increased fuel efficiency in vehicles to further increase energy efficiency, further reducing wasteful and inefficient use of energy through 2049.

Transportation Improvement Projects

The transportation improvements proposed under the proposed 2026 RTP/SCS would result in a more efficient transit system. The proposed 2026 RTP/SCS also would result in greater availability of public transit and other alternative modes of transportation, such as bicycling, which does not consume fuel energy and reduces traffic congestion. As mentioned previously, improvements to State fuel efficiency standards for vehicles and State mandated increases in the supply and use of alternative transportation fuels would further reduce fuel consumption, such as implementation of an electric vehicle charging station plan.

New transportation facilities that require energy for operation, such as signal lighting, roadway or parking lot lighting, and electronic equipment would increase energy demand. New landscaping irrigation would also increase energy demand through water pumping and treatment. However, energy consumption would not be unnecessary or wasteful, as all lighting, signage and irrigation systems would comply with applicable energy efficiency requirements within the California Building Code. Therefore, the transportation improvement projects included in the proposed 2026 RTP/SCS would not result in inefficient, unnecessary, or wasteful consumption of gasoline or diesel fuel or an increased reliance on fossil fuels relative to baseline conditions.

Land Use Changes

The proposed 2026 RTP/SCS envisions a regional land use scenario that promotes mixed-use and infill development in existing commercial corridors in combination with high-quality transit service (e.g., bus service that has headways of 30 minutes or less during the peak period, bus rapid transit, express bus or rail) and improved bicycle and pedestrian infrastructure. Mixed-use and infill projects would reduce VMT and energy use because they would locate people closer to existing goods and services, thereby resulting in shorter vehicle trips and/or promoting walking or biking, and they would locate people closer to existing transportation hubs, thereby encouraging the use of alternative modes of transit (e.g., buses) and resulting in fewer vehicle trips. Operation of future infill projects would increase overall demand for energy beyond existing demand; however, such development would not require unusual, unnecessary, or wasteful amounts of energy. Future mixed-use and infill projects are anticipated to be constructed using standard building practices. These projects would also be subject to the CalGreen Code and Title 24 of the California Energy Code, which set forth specific energy efficiency requirements related to design, construction methods and materials.

In summary, the 2026 RTP/SCS would reduce energy consumption, thus it would not result in wasteful or inefficient energy consumption within the region relative to baseline conditions. Therefore, 2026 RTP/SCS impacts on energy usage would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 1b: Would the project result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resource, during project construction or operation (including transportation), based on whether the project would result in an increased reliance on fossil fuels and decreased reliance on renewable energy sources?

Impact E-2 THE PROPOSED 2026 RTP/SCS WOULD NOT INCREASE RELIANCE ON FOSSIL FUELS OR DECREASE RELIANCE ON RENEWABLE ENERGY SOURCES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The proposed 2026 RTP/SCS, resulting transportation projects, and implementation of the land use scenario envisioned by proposed 2026 RTP/SCS are required to follow State regulations, such as California's Green Building Standards and SB 350, by incorporating alternative energy use. PG&E is the utility provider for the majority of the StanCOG region, and pursuant to CPUC regulations, utilities such as PG&E utilize a long-term planning process to plan for increased energy demand in the future with its publication of ten-year integrated resource plans. The most recent PG&E plan, titled PG&E's 2022 Integrated Resource Plan, details planned projects between 2022 and 2035 that aim to ensure compliance with North American Electric Reliability Corporation standards, improve transmission system access for renewable generation to meet Renewable Portfolio Standard (RPS) goals and targets, improve service reliability for end users and coordinate long-term plans for PG&E's transmission system (PG&E 2022). Additionally, within this plan, PG&E has introduced ambitious emissions reduction goals that include achieving net zero GHG emissions by 2040 and being climate positive by 2050. Thus, renewable energy options would be incorporated in the proposed 2026 RTP/SCS projects as future transportation improvements and implementation of the land use scenario envisioned by proposed 2026 RTP/SCS rely on the aforementioned service providers, and each has integrated a reduction in reliance on fossil fuels as part of their standards and goals.

Each Integrated Resource Plan published is a ten-year planning document; thus, each utility will continue to assess the reliability and capacity of its energy facilities every ten years based on critical system conditions, growth assumptions and study years agreed upon by the California Independent System Operator Corporation and participating stakeholders.

Furthermore, as described under Impact E-1, construction and operation of land use development envisioned under the proposed 2026 RTP/SCS would be required to comply with relevant provisions of CALGreen and Title 24 of the California Energy Code. In addition, land use and transportation projects would be required to comply with the State's Alternative Fuels Plan, among other regulatory standards to reduce GHG and encourage alternative energy use.

Transportation Projects

As shown in Table 4.6-5 and discussed above, while countywide daily VMT and total daily energy use would increase by approximately 11 percent from baseline (2023) to Year 2049 (with Project), the proposed 2026 RTP/SCS would only result in a 1.5 percent increase in per-capita and per-household energy usage when compared to 2023 baseline conditions. Projects that would support alternative energy use and potentially decrease VMT would be roadway improvements that incorporate multi-use paths along existing corridors. For instance, there are 190 projects planned by the proposed 2026 RTP/SCS to construct or improve bicycle facilities, including a Class I multi-use path in Newman; several Class IV separated bicycle lanes in Ceres; and Class II bicycle improvements in Modesto. These specific projects support alternative energy use by providing County residents with non-motorized transportation options, thereby lessening energy usage within the region. Also, as

mentioned above, the proposed 2026 RTP/SCS includes other transportation projects which are subject to the State's Alternative Fuels Plan, thereby encouraging alternative energy use.

Land Use Projects

The proposed 2026 RTP/SCS emphasizes a regional land use scenario that promotes mixed use and infill development in existing commercial corridors in combination with high quality transit service and improved bicycle and pedestrian infrastructure, which would reduce per-capita energy use and energy use per-household when compared to countywide daily VMT and total daily energy use. Operation of future infill projects would increase the overall demand for energy beyond existing demand, however, such development would not require unusual, unnecessary, or wasteful amounts of energy shown through a reduction in per-capita energy usage and energy use per-household growth compared to direct energy usage as shown in Table 4.6-5. As mentioned above, land use projects would incorporate renewable energy options through reliance on service provider, and that have integrated a reduction in reliance on fossil fuels as part of their standards and goals. Therefore, the proposed 2026 RTP/SCS would not increase reliance on fossil fuels or decrease reliance on renewable energy sources. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 2:	Would the project conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Impact E-3 THE PROPOSED 2026 RTP/SCS WOULD NOT CONFLICT WITH OR OBSTRUCT A STATE OR LOCAL PLAN FOR RENEWABLE ENERGY OR ENERGY EFFICIENCY. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

As discussed in Section 4.6.2, *Regulatory Setting*, several State plans, the County's adopted General Plan and city General Plans include energy conservation and energy efficiency strategies intended to enable the State and the County to achieve GHG reduction and energy conservation goals. A full discussion of the 2026 RTP/SCS's consistency with GHG reduction plans is included in Section 4.8, *Greenhouse Gas Emissions and Climate Change*.

Transportation Projects

As discussed in Impact E-1, the 2026 RTP/SCS would result in an approximately 1.5 percent increase in per capita energy use in the region and would not result in energy used in an unnecessary or wasteful manner. Accordingly, inconsistencies between 2026 RTP/SCS and adopted plans and policies related to energy conservation have not been identified. The discussion below further examines consistency with adopted plans and policies related to energy conservation.

Regulations related to fuel efficiency standards and alternative fuel vehicles are described in Section 4.6.2, *Regulatory Setting*. The proposed 2026 RTP/SCS would not conflict with such regulations (e.g., Energy Policy and Conservation Act and CAFE Standards, Energy Independence and Security Act of 2007, AB 1493: Reduction of Greenhouse Gas Emissions, AB 1007: State Alternative Fuels).

The 1975 Warren-Alquist Act established the CEC, and established a State policy to reduce wasteful, uneconomical, and unnecessary uses of energy. Based on the data above, and explained in the

conclusion below, 2026 RTP/SCS would not result in wasteful, inefficient, or unnecessary use of energy. Therefore, 2026 RTP/SCS is consistent with the Warren-Alquist Act policies.

Senate Bill (SB) 350, the Clean Energy and Pollution Reduction Act of 2015, requires the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030. This act also requires doubling of the energy efficiency savings in electricity and natural gas for retail customers, through energy efficiency and conservation by December 31, 2030.

In addition, the 2025 IEPR includes a set of strategies to address California's future energy needs (CEC 2026d). Key topics covered in the report include electricity resource and supply plans; electricity and natural gas demand forecasts; natural gas outlooks; transportation energy demand forecasts; energy efficiency savings; integrated resource planning; a barriers study; climate adaptation and resilience; renewable gas; distributed energy resources; strategic transmission investment plans; and existing power plan reliability issues. The proposed 2026 RTP/SCS would not conflict with these policies.

Land Use Projects

Locally, the proposed 2026 RTP/SCS would be consistent with the Stanislaus County General Plan and city general plans that include goals and policies that encourage energy conservation and energy efficiency. These plans encourage the use of renewable energy, energy conservation and energy efficiency techniques in all new building design, orientation, construction, and support of alternative transportation and fuels. Local General Plans include similar goals and policies. The proposed 2026 RTP/SCS would be consistent with the State and local plans as the proposed 2026 RTP/SCS's Goal 5 Environmental Quality states:

> Consider environmental impacts when making transportation investments and minimize impacts on clean air and natural resources. Support infrastructure investments that facilitate vehicle electrification and the provision of electrification infrastructure in public and private parking facilities and structures.

Therefore, the proposed 2026 RTP/SCS would be consistent with State energy efficiency plans, the County's adopted energy conservation and efficiency strategies contained in its General Plan, and local General Plans' energy efficiency policies. As described under Impact E-1, construction and operation of the proposed 2026 RTP/SCS would be required to comply with relevant provisions of CALGreen and Title 24 of the California Energy Code. Therefore, this impact would be less than significant, and no mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.6.4 Cumulative Impact Analysis

The cumulative impact analysis area for energy consists of the StanCOG region and adjoining counties. Information regarding these adjoining counties can be found in Chapter 3, *Environmental Setting, 3.3.4 Approach for Cumulative Analysis*. Future development in this region that could impact energy use is considered in the analysis. This cumulative extent is used to evaluate potential wasteful or inefficient use of energy resulting in an increase overall per-capita energy consumption or result in increased reliance on fossil fuels and decreased reliance on renewable energy sources or

conflict with state or local plans for renewable energy or energy efficiency across the cumulative impact area.

Future development in the cumulative impact analysis area would result in short term consumption of energy resulting from construction equipment and use of fuel for vehicles. Operation of future developments would also require energy but would be subject to CalGreen and California Building Energy Efficiency Standards. Furthermore, pursuant to the California Public Utilities Commission, utilities such as PG&E must utilize a long-term planning process to plan for increased energy demand in the area and would account for increased development and an increase in population. As such, growth in the cumulative impact analysis area and increased energy demand would be accounted for and would not result in the inefficient, unnecessary, or wasteful use of energy.

Demand for energy resources such as natural gas, electricity, and transportation fuels would increase as the population of the StanCOG region grows. However, proposed transportation improvements and land use projects envisioned under the proposed 2026 RTP/SCS would conserve transportation energy by relieving congestion and contributing towards other transportation efficiencies such as transit and active transportation, resulting in slightly higher per-capita transportation energy consumption in 2049 than in the 2023 baseline year. In addition, renewable energy sources steadily constitute a larger proportion of California's energy supply makeup, resulting in a trend of decreased dependency on fossil fuels and increased dependency on renewable energy sources. As a result, the proposed 2026 RTP/SCS would not contribute to significant cumulative impacts related to wasteful or inefficient use of energy resources and services because energy usage would be reduced on a per-household and per-capita basis with the proposed 2026 RTP/SCS as compared to baseline 2023 conditions.

In summary, cumulative impact related to wasteful or inefficient use of energy, increased reliance on fossil fuels or decreased reliance on renewable energy sources, and conflicts with plans for renewable energy or energy efficiency would be less than significant. The proposed 2026 RTP/SCS contribution to these cumulative impacts would not be cumulatively considerable.

4.7 Geology and Soils

This section evaluates potential impacts to geology and soils from development facilitated by the proposed 2026 RTP/SCS.

4.7.1 Setting

The StanCOG region is located within three of California's 11 geomorphic provinces: Coast Ranges, Great Valley, and Sierra Nevada. Geomorphic provinces are naturally defined geologic regions that are characterized by a distinct landscape or landform (California Geological Survey [CGS] 2002). The Coast Ranges extend along the majority of California's coast from the California-Oregon border to Santa Barbara County in the south and consist of northwest-trending mountain ranges and valleys. In the StanCOG region, the Coast Ranges province is located west of Interstate 5 (I-5) where the topography changes from the valley floor to hills. The Coast Ranges are composed of Mesozoic and Cenozoic sedimentary strata. The eastern side is characterized by strike-ridges and valleys in the Upper Mesozoic strata. The Coast Ranges province runs parallel to and overlaps the San Andreas Fault in some areas (CGS 2002).

a. Geology and Soils

Great Valley

The Great Valley province encompasses the San Joaquin and Sacramento valleys, running from the feet of the Klamath Mountains in the north to the Tehachapi Mountains in the south. This province covers the central portion of the County east of I-5 and west of the foothills, generally known as the valley floor. The Great Valley is characterized as a trough in which sediments have been deposited almost continuously during the last 160 million years (CGS 2002).

Sierra Nevada

The Sierra Nevada province begins in the foothills along the eastern edge of the County near Knights Ferry and La Grange. The Sierra Nevada is a tilted fault block nearly 400 miles long in the eastern portion of Stanislaus County (CGS 2015). Deep river canyons cut into the gently sloping western side of the Sierras, which contrasts with the steep and rugged eastern slope.

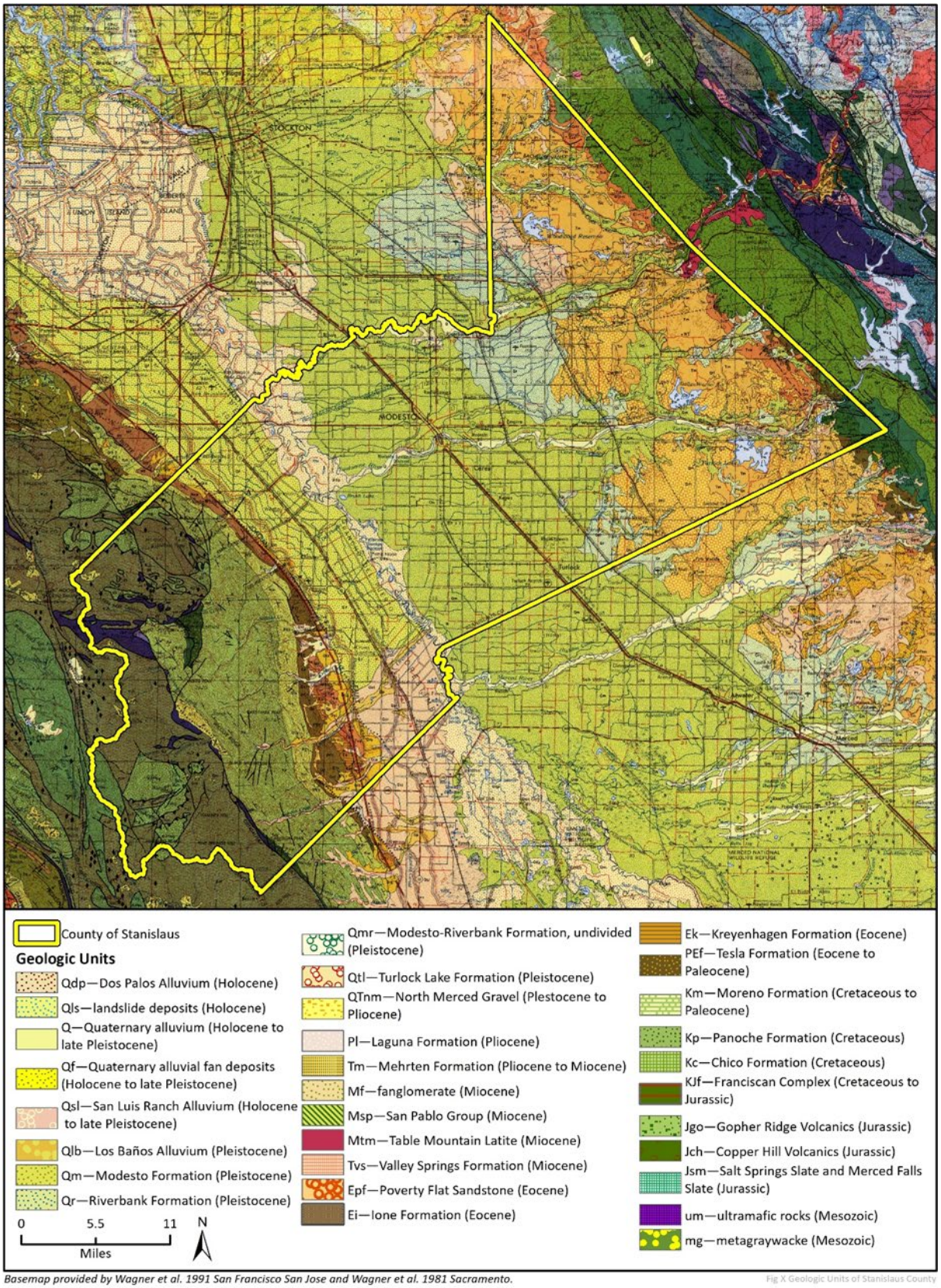
Geologic Units

The geology of the StanCOG region was mapped at a scale of 1:250,000 by Wagner et al. (1981, 1991). These authors identified 30 distinct geologic units in the StanCOG region, presented in Table 4.7-1 below with their corresponding paleontological sensitivities. These geologic units can also be viewed in Figure 4.7-1.

Table 4.7-1 Paleontological Sensitivity of Geologic Units in the StanCOG Area

Geologic Unit	Abbreviation	Paleontological Sensitivity
Dos Palos Alluvium	Qdp	Low
Quaternary landslide deposits	Qls	Low
Quaternary alluvium	Q	High
Quaternary alluvial fan deposits	Qf	High
Patterson Alluvium	Qp	Low
San Luis Ranch Alluvium	Qsl	High
Los Baños Alluvium	Qlb	High
Modesto Formation	Qm	High
Riverbank Formation	Qr	High
Modesto-Riverbank Formation, undivided	Qmr	High
Turlock Lake Formation	Qtl	High
North Merced Gravel	QTnm	Less than six feet: Low; Greater than six feet: Unknown
Laguna Formation	Pl	Low
Mehrten Formation	Tm	High
Fanglomerate	Mf	High
San Pablo Group	Msp	High
Table Mountain Latite	Mtm	None
Valley Springs Formation	Tvs	Low
Poverty Flat Sandstone	Epf	Low
Ione Formation	Ei	Low
Kreyenhagen Formation	Ek	Low
Tesla Formation	PEf	Low
Moreno Formation	Km	High
Panoche Formation	Kp	Low
Chico Formation	Kc	High
Franciscan Complex	KJf	Low
Gopher Ridge Volcanics	Jgo	None
Copper Hill Volcanics	Jch	None
Salt Springs Slate and Merced Falls Slate	Jsm	Low
Mesozoic ultramafic rocks	Um	None
Metagraywacke	mg	None

Figure 4.7-1 Geologic Units in the StanCOG Region



Basemap provided by Wagner et al. 1991 San Francisco San Jose and Wagner et al. 1981 Sacramento.

Fig X Geologic Units of Stanislaus County

Earthquake Faults

Faults generally produce damage in two ways: ground-shaking and surface rupture. Seismically induced ground-shaking covers a wide area and is greatly influenced by the distance of a site to the seismic source, soil conditions, and depth to groundwater. Surface rupture is limited to very near the fault. Although no active faults are known to exist in the San Joaquin Valley floor, several known active faults exist in the Diablo Range west of I-5 and in the eastern part of the StanCOG region (Stanislaus County 2016a). In particular, the Ortigalita Fault, located in the Diablo Range approximately 13.4 miles southwest of the City of Newman, is designated as an Alquist-Priolo Earthquake Fault Zone. Two faults that have experienced displacement within the last 1.6 million years have also been identified in the San Joaquin Valley. The San Joaquin Fault crosses I-5 approximately seven miles southwest of the City of Newman while the Vernalis Fault runs along the San Joaquin River approximately 13 miles west of the City of Modesto (City of Turlock 2012). See Figure 4.7-2 for the location of faults in the StanCOG region.

Ground-shaking

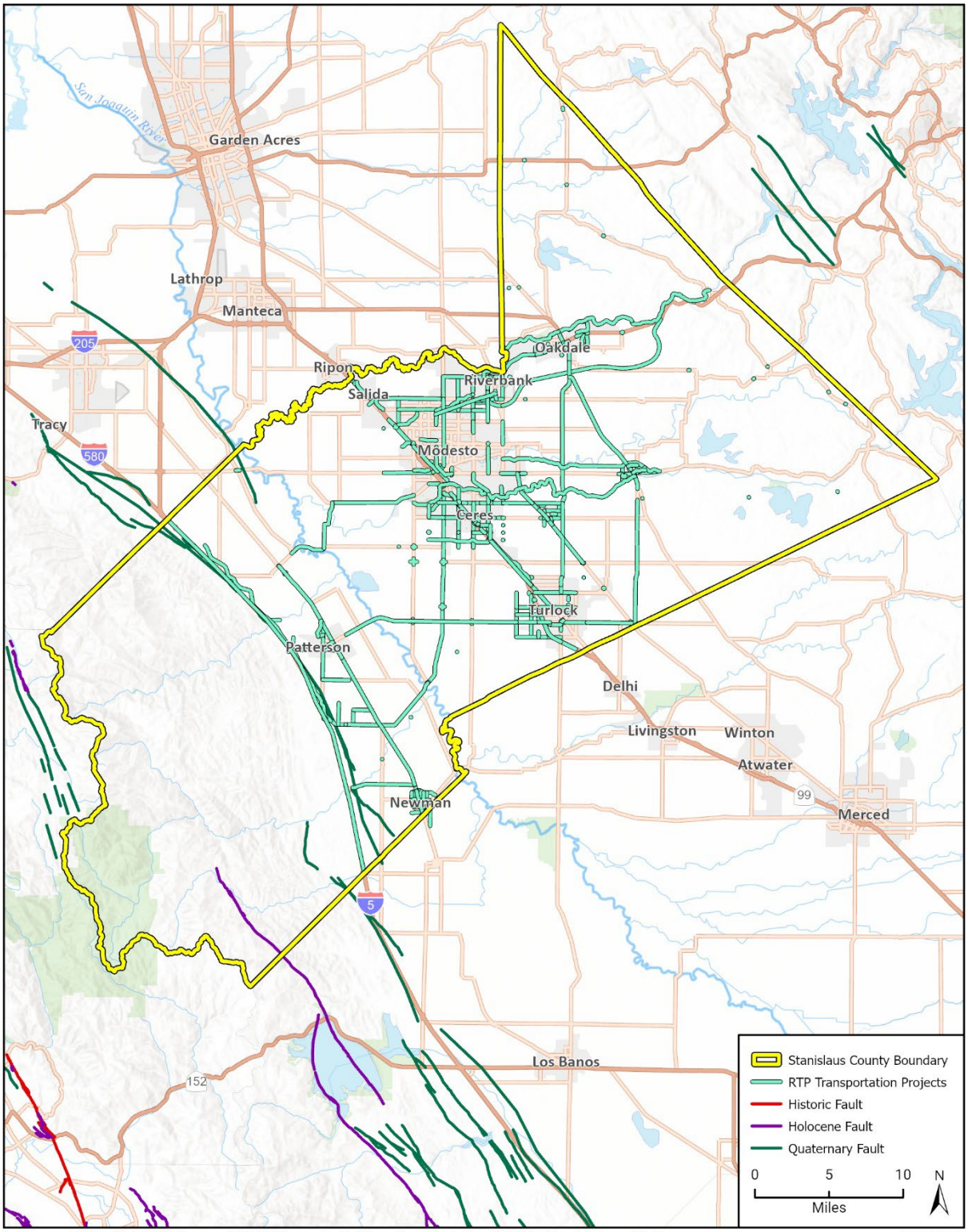
As opposed to surface rupture which effects are generally limited to the trace of the fault, ground-shaking propagates into surrounding areas during an earthquake and can affect an area around the fault. Although the intensity of the ground-shaking depends on the distance from the source of the earthquake/fault, ground shaking can be amplified locally, or prolonged depending on the types of substrate/materials. Generally, the ground-shaking hazard in the County ranges from moderate to low because there are no active faults in the County (Stanislaus County 2016a).

The most intense ground-shaking potential occurs in the western half of the StanCOG region, particularly to the east of I-5, through Patterson and Newman. Peak Ground Acceleration (PGA), which is defined as a fraction or percentage of acceleration due to gravity (G) from ground motion that has a specified probability of being exceeded in 50 years (Stanislaus County Office of Emergency Services [OES] 2022), may be in excess of 0.45 G in this area. Ground-shaking can result in very serious damage to structures around Newman and Patterson, considerable damage to ordinary structures in the western half of the County, and minor to moderate damage in the eastern half (OES 2022).

Liquefaction and Lateral Spreading

Liquefaction is the loss of soil bearing strength during a strong earthquake and is a potential occurrence in several areas with younger soils as well as in areas where the groundwater table is less than 50 feet below ground surface. The severity of ground deformation due to liquefaction is dependent on the density and depth of the liquefied material. Shallower materials experience the most severe effects. The Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) does not identify liquefaction as a primary or widespread, countywide natural hazard in the County (OES 2022). Rather, the MJHMP characterizes liquefaction as a secondary seismic hazard with limited, site-specific potential (OES 2022).

Figure 4.7-2 Faults in the StanCOG Region



Imagery provided by Esri and its licensors © 2026. Map created by Rincon Consultants, Inc., 2026. Additional data provided by USGS 2022.

24-16018 EPS
EIRFig X Fault

Slope Stability

Unstable geologic formations that are susceptible to landslides in the County occur in the Diablo Range to the west of I-5 and along river bluffs (Stanislaus County 2016a; OES 2022). Virtually the entire area located west of I-5 is composed of geological formations that, due to structure, slope, runoff, lack of vegetation, earthquake and human activity, are considered extremely susceptible to failure and sliding. On a California Division of Mines and Geology scale used to rate landslide potential, which runs from class one (low risk) to eight (high risk), the area west of I-5 is comprised of classes above four (CGS 2011). Several State highways traverse through hillsides or along river bluffs where landslide hazards may pose a risk, including State Routes 4, 108, 120, 132, 219 and I-5 (Stanislaus County OES 2022). In addition, portions of the following County roads are identified as being at risk of landslides:

- Ingram Creek Road
- Roberts Ferry Road
- Del Puerto Canyon
- Diablo Grande Parkway
- Warnerville Road
- Orestimba Road
- Crabtree Road
- Crows Landing Road (at San Joaquin River)
- La Grange Road
- South Carpenter Road
- Cooperstown Road
- Grayson Road (at San Joaquin River)
- Los Cerritos Road
- Paradise Road (at San Joaquin River)
- River Road (Ceres area)
- Shiloh Road (at Tuolumne River)
- Mitchell Road (at Tuolumne River)
- Santa Fe Avenue
- Hills Ferry Road
- Geer/Albers Roads

Expansive Soils

Soils with relatively high clay content are expansive due to the capacity of clay minerals to take in water and swell (expand) to greater volumes. Collapsible and compressible soils occur in areas where fine-grained soils have accumulated relatively rapidly and not been buried with associated consolidation. Soils in the Camarillo-Orestimba, Waukena-Fresno, and Capay associations, which would be considered expansive under the Uniform Building Code, are scattered throughout the StanCOG region (Stanislaus County 2016b). Soil issues of concern in the County include high water table, restricted permeability, and shrink swell potential (Stanislaus County 2016b). These issues can cause construction concerns due to lack of soil stability.

Subsidence

Subsidence is a gradual settling or sudden sinking of the Earth's surface due to removal or displacement of subsurface earth materials. Principal causes include aquifer-system compaction associated with groundwater withdrawals; drainage of organic soils; underground mining; or natural compaction or collapse, such as with sinkholes or thawing permafrost (USGS 2019). The StanCOG region is in the north region of the San Joaquin Valley that is the most severely affected by land subsidence, and land subsidence as a result of groundwater overdraft (Stanislaus County 2016b).

Paleontological Resources

Paleontological resources, or fossils, are the evidence of once-living organisms preserved in the rock record. They include both the fossilized remains of ancient plants and animals and the traces thereof (e.g., trackways, imprints, burrows, etc.). Paleontological resources are not found in "soil" but are contained within the geologic deposits or bedrock that underlies the soil layer. Typically, fossils are greater than 5,000 years old (i.e., older than middle Holocene in age) and are typically preserved in sedimentary rocks. Although rare, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks under certain conditions (Society of Vertebrate Paleontology [SVP] 2010). Fossils occur in a non-continuous and often unpredictable distribution within some sedimentary units, and the potential for fossils to occur within sedimentary units depends on several factors. It is possible to evaluate the potential for geologic units to contain scientifically important paleontological resources and therefore evaluate the potential for impacts to those resources and then provide mitigation for paleontological resources if they are discovered during construction of a project.

Paleontological sensitivity refers to the potential for a geologic unit to produce scientifically significant fossils. Direct impacts to paleontological resources occur when earthwork activities, such as grading or trenching, cut into the geologic deposits within which fossils are buried and physically destroy the fossils. Since fossils are the remains of prehistoric animal and plant life, they are considered to be nonrenewable. Such impacts have the potential to be significant and, under the *CEQA Guidelines*, may require mitigation. Sensitivity is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. Vertebrate fossils are almost always significant because they occur more rarely than invertebrates or plants. Thus, geological units having the potential to contain vertebrate fossils are considered the most sensitive.

The SVP outlines in its Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (2010) guidelines for categorizing paleontological sensitivity of geologic units within a project area. The SVP (2010) describes sedimentary rock units as having a high, low, undetermined, or no potential for containing significant nonrenewable paleontological resources. This criterion is based on rock units within which vertebrates or significant invertebrate fossils have been determined by previous studies to be present or likely to be present.

The geographic distribution, general characteristics, and paleontological sensitivities of each geologic unit in the StanCOG region is discussed below. Table 4.7-1 summarizes the paleontological sensitivities of each geologic unit.

Dos Palos Alluvium (Qdp)

The Dos Palos Alluvium (Qdp) is found in western part of the San Joaquin Valley in the StanCOG region (Figure 4.7-1). The Dos Palos Alluvium consists of fine-grained floodplain deposits associated with the Stanislaus River, Tuolumne River, and San Joaquin River (Wagner et al. 1991). Laudon and Bellitz (1991) suggest that their 'flood-basin deposits' along the San Joaquin River are equivalent to the Dos Palos Alluvium. They state that these deposits are generally at least ten feet deep before abruptly transitioning to coarser grained 'Sierran Sand' (which they equate to the Modesto Formation). The Dos Palos Alluvium is Holocene in age, which is generally considered too young to preserve scientifically significant paleontological resources (SVP 2010). Therefore, the Dos Palos Alluvium has a low paleontological sensitivity.

Quaternary Landslide Deposits (Qls)

Quaternary landslide deposits (Qls) are found in small areas within the Coast Ranges in western Stanislaus County (Figure 4.7-1). Quaternary landslide deposits consist of poorly sorted rubble sourced from upslope geologic units (Dibblee and Minch 2006a, b; Wagner et al. 1991). Quaternary landslide deposits are Holocene in age, which is generally considered too young to preserve scientifically significant paleontological resources (SVP 2010). The high-energy depositional environment that produces Quaternary landslide deposits is also not conducive to fossil formation. Therefore, Quaternary landslide deposits have a low paleontological sensitivity**.**

Quaternary Alluvium (Q)

Quaternary alluvium (Q) is found around along the courses of the Stanislaus River and Tuolumne River. Q consists of unconsolidated stream and basin sediments that range from clay- to boulder-sized (Wagner et al. 1991). Quaternary alluvium is Holocene to late Pleistocene in age. Pleistocene-aged alluvium has produced scientifically significant paleontological resources throughout California, including in the StanCOG region (Jefferson 2010; PBDB 2022; UCMP 2026). Therefore, Quaternary alluvium is assigned a high paleontological sensitivity.

Quaternary Alluvial Fan Deposits (Qf)

Quaternary alluvial fan deposits (Qf) are found in western StanCOG region, in the foothills of the Coast Ranges west of the San Joaquin River (Figure 4.7-1). Quaternary alluvial fan deposits consist of gravel, sand, silt, and clay (Wagner et al. 1991). Qf is one of several units that represent Coast Range-sourced alluvial fan deposits in the StanCOG region (i.e., Qp, Qsl, Qlb, QTt). These named alluvial fan units are distinctive in some way, but Quaternary alluvial fan deposits represent undivided deposits that range from the Holocene to late Pleistocene. Pleistocene-aged alluvial sediments have produced scientifically significant paleontological resources throughout California, including in the StanCOG region (Jefferson 2010; PBDB 2022; UCMP 2022). Therefore, Quaternary alluvial fan deposits are assigned a high paleontological sensitivity.

Patterson Alluvium (Qp)

The Patterson Alluvium (Qp) is found in western Stanislaus County, with the largest deposits found along Orestimba Creek (Figure 4.7-1). The Patterson Alluvium consists of unconsolidated, poorly to well-sorted gravel, sand, silt, and clay found in modern stream channels and low terraces (Wagner et al. 1991; Wentworth et al. 1999). The Patterson Alluvium often forms a thin layer overlying older alluvial sediments. The Patterson Alluvium is one of several units that represent Coast Range-sourced alluvial deposits in the StanCOG region (i.e., Qf, Qsl, Qlb, QTt). The Patterson Alluvium is Holocene in age, which is generally considered too young to preserve scientifically significant paleontological resources. Therefore, the Patterson Alluvium is assigned a low paleontological sensitivity.

San Luis Ranch Alluvium (Qsl)

The San Luis Ranch Alluvium (Qsl) is found in southwestern Stanislaus County, west of the San Joaquin River (Figure 4.7-1). The San Luis Ranch Alluvium consists of unconsolidated, poorly to moderately sorted, poorly to moderately bedded coarse sandy gravel and gravelly coarse sand (Lettis 1982; Wagner et al. 1991; Wentworth et al. 1999). The San Luis Ranch Alluvium is one of several units that represent Coast Range-sourced alluvial fan deposits in the StanCOG region (i.e.,

Qf, Qp, Qlb, QTt). Laudon and Bellitz (1991) suggest that the 'Coast Range alluvium,' which correlates with the San Luis Ranch Alluvium and Patterson alluvium, is at least 50 feet thick. The San Luis Ranch Alluvium is early Holocene to late Pleistocene in age. Pleistocene-aged alluvial sediments have produced scientifically significant paleontological resources throughout California, including in the StanCOG region (Jefferson 2010; PBDB 2022; UCMP 2022). Therefore, the San Luis Alluvium is assigned a high paleontological sensitivity.

Los Baños Alluvium (Qlb)

The Los Baños Alluvium (Qlb) is found in small areas in western Stanislaus County (Figure 4.7-1). The Los Baños Alluvium consists of poorly bedded, poorly sorted sandy gravel and gravelly coarse sand that represent terrace, pediment, and fan deposits that are middle to late Pleistocene in age (Wagner et al. 1991; Wentworth et al. 1999). The Los Baños Alluvium is one of several units that represent Coast Range-sourced alluvial fan deposits in the StanCOG region (i.e., Qf, Qp, Qsl, QTt). Pleistocene-aged alluvial sediments have produced scientifically significant paleontological resources throughout California, including in the StanCOG region (Jefferson 2010; PBDB 2022; UCMP 2022). Therefore, the Los Baños Alluvium is assigned a high paleontological sensitivity.

Modesto Formation (Qm)

The Modesto Formation (Qm) underlies much of the StanCOG region, covering the Great Central Valley, east of the San Joaquin River (Figure 4.7-1). The Modesto Formation consists of arkosic sand, gravel, and silt, originating from the Sierra Nevada (Bartow et al. 1981; Wagner et al. 1981, 1991). The Modesto Formation is a late Pleistocene unit that has produced vertebrate fossils in the StanCOG region, including ground sloths (*Megalonyx*), mammoths (*Mammuthus*), bison (*Bison*), and camel (*Camelops*) (Jefferson 2010; PBDB 2022; UCMP 2022). Given this fossil-producing history, the Modesto Formation is assigned a high paleontological sensitivity.

Riverbank Formation (Qr)

The Riverbank Formation (Qr) underlies parts of central Stanislaus County in the eastern Great Central Valley (Figure 4.7-1). The Riverbank Formation primarily consists of sand, though gravel lenses and fine-grained interbeds are present, that originate from the Sierra Nevada (Bartow et al. 1981; Wagner et al. 1991). The Riverbank Formation is a late Pleistocene unit that has produced vertebrate fossils in the StanCOG region, ground sloth (*Paramylodon*), and elsewhere in California, mammoth (*Mammuthus*), horse (*Equus*), rodent (*Neotoma*, *Thomomys*, *Microtus*), dire wolf (*Canis dirus*), and others (Jefferson 2010; PBDB 2022; UCMP 2022). Given this fossil-producing history, the Riverbank Formation is assigned a high paleontological sensitivity.

Modesto-Riverbank Formation, undivided (Qmr)

In small areas of eastern Stanislaus County, the Modesto and Riverbanks formations are undivided and mapped as a single unit (Qmr) (Figure 4.7-1). Qmr consists of sand, gravel, and silt, representing alluvial deposition originating from the Sierra Nevada (Bartow et al. 1981; Wagner et al. 1991). As noted above, the Modesto and Riverbank formations are Pleistocene in age and have produced vertebrate fossils in the StanCOG region, including ground sloths (*Megalonyx*, *Paramylodon*), mammoths (*Mammuthus*), bison (*Bison*), and camel (*Camelops*) (Jefferson 2010; PBDB 2022; UCMP 2022). Given that both the Modesto and Riverbank Formations are assigned a high paleontological sensitivity, areas mapped as Qmr, in which these formations cannot be distinguished are a high paleontological sensitivity.

Turlock Lake Formation (Qtl)

The Turlock Lake Formation (Qtl) is found in eastern Stanislaus County in the foothills of the Sierra Nevada (Figure 4.7-1). The Turlock Lake Formation consists of gravel, sand, silt, and clay that represents glacial outwash and rock flour originating in the Sierra Nevada (Bartow et al. 1981; Wagner et al. 1991). The Turlock Lake Formation is middle to early Pleistocene in age. No fossils have been recovered from the Turlock Lake Formation in the StanCOG region, but localities from this geologic unit in Fresno and Madera Counties have produced sabre-toothed cats (*Homotherium*, *Smilodon*), mammoths (*Mammuthus*), ground sloths (*Megalonyx*, *Nothrotheriops*, *Paramylodon*), and other species (Dundas et al. 1996; Jefferson 2010; PBDB 2022; UCMP 2022). Therefore, the Turlock Lake Formation is assigned a high paleontological sensitivity.

North Merced Gravel (QTnm)

The North Merced Gravel (QTnm) is found in small areas of eastern Stanislaus County in the foothills of the Sierra Nevada (Figure 4.7-1). The North Merced Gravel consists of coarse gravel and cobbles (up to 15 cm in diameter) that is rarely more than six feet thick, forming a pediment layer overlying older Cenozoic strata (Bartow et al. 1981; Marchand and Allwardt 1978; Wagner et al. 1991). No fossil localities are recorded from the North Merced Gravel (Jefferson 2010; PBDB 2022; UCMP 2022), and its coarse-grained lithology is not conducive to fossil preservation. However, the North Merced Gravel is typically less than 6 feet thick. Therefore, areas mapped as the North Merced Gravel have a low paleontological sensitivity at less than six feet in depth, and unknown paleontological sensitivity deeper than six feet in depth.

Laguna Formation (Pl)

The Laguna Formation (Pl) is found in eastern Stanislaus County (Figure 4.7-1). The Laguna Formation consists of primarily gravel but with some sandy and silty beds that represent alluvial deposits originating from the Sierra Nevada and is Pliocene in age (Bartow et al. 1981; Marchand and Allwardt 1978; Wagner et al. 1991). No fossil localities are recorded from the Laguna Formation (PBDB 2022; UCMP 2022), and its dominantly coarse-grained lithology is not conducive to fossil preservation. Therefore, the Laguna Formation has a low paleontological sensitivity.

Mehrten Formation (Tm)

The Mehrten Formation (Tm) is found in eastern Stanislaus County, where it covers more geographic area than any other pre-Quaternary geologic unit (Figure 4.7-1). The Mehrten Formation consists of conglomerate, sandstone, and siltstone primarily derived from andesitic sources that generally becomes finer moving southward (Marchand and Allwardt 1978; Wagner et al. 1981, 1991). The Mehrten Formation is Miocene to early Pliocene in age. Several dozen fossil localities from the Mehrten Formation are known in the StanCOG region, preserving taxa such as tortoises (Testudinidae), horses (Equidae), dogs (Canidae), camels (Camelidae), and plants (Axelrod 1957; Balisi et al. 2018; PBDB 2022; UCMP 2022). Therefore, the Mehrten Formation is assigned a high paleontological sensitivity.

Fanglomerate (Mf)

Fanglomerate (Mf) deposits are found in western Stanislaus County, in the foothills of the Diablo Range (Figure 4.7-1). Some authors refer to these deposits as the Oro Loma and/or Carbona formations (Wagner et al. 1991). These fanglomerate deposits are late Miocene and possibly early

Pliocene in age and consist of reddish-brown to gray cross-bedded, channeled, conglomerate, sandstone, and siltstone (Wagner et al. 1991; Wentworth et al. 1999). Three fossil localities preserving horses (Equidae) and camels (Camelidae) are known from these fanglomerate deposits (referred to as the Oro Loma Formation) in Fresno County (Kelly and Stewart 2008; PBDB 2022). Therefore, fanglomerate deposits are assigned a high paleontological sensitivity.

San Pablo Group (Msp)

The San Pablo Group (Msp) is found in small areas of western Stanislaus County, in the foothills of the Diablo Range (Figure 4.7-1). The San Pablo Group is Miocene in age and consists of mudstone, siltstone, shale, and tuff, which some authors split into several geologic units: the Neroly Sandstone/Formation, Cierbo Sandstone/Formation, and Briones Sandstone/Formation (Dibblee and Minch 2005, 2007a, b, c; Wagner et al. 1991; Wentworth et al. 1999). Numerous fossil localities are known from the San Pablo Group including in the StanCOG region (PBDB 2022; UCMP 2022). Marine invertebrates (Mollusca, Crustacea) are most commonly recovered, but several localities preserve terrestrial vertebrates including horses (Equidae), antelope (Antilocapridae), and dogs (Canidae). Therefore, the San Pablo Group is assigned a high paleontological sensitivity.

Table Mountain Latite (Mtm)

The Table Mountain Latite (Mtm) is found in small areas of eastern Stanislaus County, in the foothills of the Sierra Nevada (Figure 4.7-1). The Table Mountain Latite is a dark gray to black porphyritic latite flow with abundant labradorite phenocrysts representing a late Miocene lava flow that is dated to 9.0 Ma (Bartow et al. 1981; Wagner et al. 1991). Igneous rocks are formed by the cooling of magma which is not conducive to fossil preservation. Therefore, the Table Mountain Latite has no paleontological sensitivity.

Valley Springs Formation (Tvs)

The Valley Springs Formation (Tvs) is found in the eastern edge of Stanislaus County, in the foothills of the Sierra Nevada (Figure 4.7-1). The Valley Springs Formation consists of claystone, rhyolitic tuff, siltstone, sandstone, and conglomerate that is late Oligocene to middle Miocene in age (Bartow et al. 1981; Wagner et al. 1991). No fossil localities are known from the Valley Springs Formation in the StanCOG region, but several localities bearing fossil plants are known from further north in Calaveras, El Dorado, and Sierra counties (Axelrod 1957; PBDB 2022; UCMP 2022). The Valley Springs Formation is fossiliferous in parts, but it does not have a history of producing scientifically significant fossils. Therefore, the Valley Springs Formation has a low paleontological sensitivity.

Poverty Flat Sandstone (Epf)

The Poverty Flat Sandstone (Epf) is found in small areas of southwestern Stanislaus County in the Diablo Range (Figure 4.7-1). The Poverty Flat Sandstone consists of gray, micaceous sandstone interbedded with gray claystone near the base that grades upward into white, cross-bedded quartz sandstone and siltstone (Wagner et al. 1991; Wentworth et al. 1999). Locally, greenish-gray sandy claystone and brown siltstone is present, and a characteristic red and orange chert conglomerate is found near the top of the unit. Scattered mollusk fossils near the base of the unit represent the only fossils recovered from the Poverty Flat Sandstone (Bartow et al. 1985; PBDB 2022; UCMP 2022). The Poverty Flat Sandstone has produced few invertebrate fossils; therefore, it has a low paleontological sensitivity.

Ione Formation (Ei)

The Ione Formation (Ei) is found in the eastern edge of Stanislaus County in the foothills of the Sierra Nevada (Figure 4.7-1). The Ione Formation consists of light brown, tan, gray, pinkish, or yellowish quartz sandstone with claystone interbeds near its base and is Eocene in age (Bartow et al. 1981; Wagner et al. 1991). No vertebrate fossil localities are known from the Ione Formation, but many plant fossil-bearing localities are known from elsewhere in the northern Sierra Nevada foothills, including one in the StanCOG region (PBDB 2022; UCMP 2022). Although the Ione Formation has a history of preserving plant fossils, these fossils are generally not considered scientifically significant. Therefore, the Ione Formation has a low paleontological sensitivity.

Kreyenhagen Formation (Ek)

The Kreyenhagen Formation (Ek) is found in southwestern Stanislaus County in the Diablo Range (Figure 4.7-1).The Kreyenhagen Formation is a gray, crumbly, micaceous clay shale, diatomaceous shale, or siltstone that is Eocene in age (Dibblee and Minch 2007b, c; Wagner et al. 1991). Shark (Elasmobranchii), ray-finned fish (Actinopterygii), plants, and microfossils (foraminifera, diatoms), are known from the Kreyenhagen Formation, but no localities have been recorded in the StanCOG region (PBDB 2022; UCMP 2022). The Kreyenhagen Formation has produced fossils, but these fossils are generally of common taxa which are not scientifically significant. Therefore, the Kreyenhagen Formation has a low paleontological sensitivity.

Tesla Formation (PEf)

The Tesla Formation (PEf) is found in southwestern Stanislaus County in the Diablo Range (Figure 4.7-1). The Tesla Formation consists of friable tan or white sandstone, siltstone, and mudstone that is Paleocene to Eocene in age (Dibblee and Minch 2006a, 2007b, c, d; Wagner et al. 1991; Wentworth et al. 1999). Several dozen invertebrate- and plant-bearing fossil localities are known from the Tesla Formation, including seven in the StanCOG region (PBDB 2022; UCMP 2022). The Tesla Formation has produced fossils, but these fossils are generally of common taxa which are not scientifically significant. Therefore, the Tesla Formation has a low paleontological sensitivity.

Moreno Formation (Km)

The Moreno Formation (Km) is found in southwestern Stanislaus County in the Diablo Range (Figure 4.7-1). The Moreno Formation consists of gray, crumbly micaceous clay shale or light gray to tan, bedded fine- to medium-grained arkosic sandstone that is late Cretaceous in age (Dibblee and Minch 2006a, 2007b, c, d, e; Wagner et al. 1991; Wentworth et al. 1999). The Moreno Formation (also known as the Moreno Shale) has yielded numerous vertebrate fossil localities in the southern Coast Ranges, including in the StanCOG region, producing taxa such as mosasaurs, plesiosaurs, hadrosaurs, turtles, ray-finned fish, and invertebrates (bivalves, gastropods, cephalopods, etc.) (Bell and Evans 2010; Lindgren and Schulp 2010; O'Gorman 2019; PBDB 2022; UCMP 2022). Therefore, the Moreno Formation has a high paleontological sensitivity.

Panoche Formation (Kp)

The Panoche Formation is found in the southwestern Stanislaus County in the Diablo Range (Figure 4.7-1). The Panoche Formation consists of light brown to tan sandstone, gray to dark gray clay shale, or gray to brown conglomerate and is Cretaceous in age (Dibblee and Minch 2006a, 2007a, b, c, d, e, f; Wagner et al. 1991; Wentworth et al. 1999). Numerous invertebrate (gastropod,

bivalve, cephalopod) fossil localities are known from the Panoche Formation, including in the StanCOG region, but the only vertebrate specimens consist of several fragmentary ray-finned fish, shark, and reptile fossils (PBDB 2022; UCMP 2022). The Panoche Formation is fossiliferous, but these fossils are generally common and/or fragmentary. Therefore, the Panoche Formation is assigned a low paleontological sensitivity.

Chico Formation (Kc)

The Chico Formation (Kc) is found in the northeastern edge of Stanislaus County in the Sierra Nevada (Figure 4.7-1). The Chico Formation consists of shale, sandstone, and conglomerate and is Cretaceous in age (Wagner et al. 1991). The Chico Formation contains several vertebrate fossil localities, producing bird, mosasaur, pterosaur, plesiosaur, fish, and invertebrate fossils (Hilton et al. 1999; Parham and Stidham 1999; PBDB 2022; UCMP 2022). Therefore, the Chico Formation has a high paleontological sensitivity.

Franciscan Complex (KJf)

The Franciscan Complex (KJf) covers much of the southwestern part of the StanCOG region in the Diablo Range (Figure 4.7-1). The Franciscan Complex is a Jurassic and Cretaceous-aged assemblage of sedimentary, volcanic, and metamorphic rocks that form the basement of much of the Coast Ranges (Dibblee and Minch 2006a, b, 2007a, b, c, d, e, f; Wagner et al. 1991; Wentworth et al. 1999). Sedimentary rocks of the Franciscan Complex may bear invertebrate fossils and two marine reptiles are known from Franciscan rocks, though not in the StanCOG region (PBDB 2022; UCMP 2022). Although scientifically significant paleontological resources have been recovered from the Franciscan Complex, they are extremely rare with only two specimens found in this unit which covers large areas of the Coast Ranges. Therefore, the Franciscan Complex is assigned **a low paleontological sensitivity.**

Gopher Ridge Volcanics (Jgo)

The Gopher Ridge Volcanics (Jgo) are found in the northeastern edge of the StanCOG region in the Sierra Nevada (Figure 4.7-1). The Gopher Ridge Volcanics consist of metamorphosed mafic and felsic pyroclastic flows that are Jurassic in age (Wagner et al. 1991). The Gopher Ridge Volcanics are metamorphosed, so they cannot preserve scientifically significant paleontological resources and have no paleontological sensitivity.

Copper Hill Volcanics (Jch)

The Copper Hill Volcanics (Jch) are found in the eastern edge of the StanCOG region in the Sierra Nevada (Figure 4.7-1). The Copper Hill Volcanics consist of metamorphosed mafic and felsic pyroclastic flows that are Jurassic in age (Wagner et al. 1991). The Copper Hill Volcanics are metamorphosed, so they cannot preserve scientifically significant paleontological resources and have no paleontological sensitivity.

Salt Springs Slate and Merced Falls Slate (Jsm)

The Salt Springs Slate and Merced Falls Slate (Jsm) are found in the eastern edge of the StanCOG region in the Sierra Nevada (Figure 4.7-1). The Salt Springs Slate and Merced Falls Slate consist of slate, metagraywacke, and conglomerate (Wagner et al. 1991). The Salt Springs Slate and Merced Falls Slate consist primarily of metamorphic rocks, which cannot preserve scientifically significant paleontological resources. It is possible for conglomerate facies to preserve paleontological

resources, but their coarse-grained nature is indicative of high-energy depositional environment in which fossilization is unlikely. Therefore, the Salt Springs Slate and Merced Falls Slate have a low paleontological sensitivity.

Mesozoic Ultramafic Rocks (um)

Areas mapped as Mesozoic ultramafic rocks (um) are found in western Stanislaus County in the Diablo Range (Figure 4.7-1). Mapping by Dibblee and Minch (2006b, 2007d, e, f) identified these rocks as Jurassic-aged diabase, diorite, and gabbro, associated with the Coast Range Ophiolite and serpentinite. These rocks are intrusive igneous rocks or metamorphic. Therefore, they cannot preserve paleontological resources and have no paleontological sensitivity**.**

Metagraywacke (mg)

Metagraywacke (mg) is found in western Stanislaus County in the Diablo Range (Figure 4.7-1). Metagraywacke is the result of metamorphic processes acting on the graywacke sandstone that comprises much of the areas mapped as the Franciscan Complex (KJf) (Dibblee and Minch 2006a, b, 2007a, b, c, d, e, f; Wagner et al. 1991; Wentworth et al. 1999). The heat and pressure needed to transform graywacke to metagraywacke would have destroyed any scientifically significant paleontological resources originally contained within these sediments and have no paleontological sensitivity.

4.7.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act was enacted in 1977 to "reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program." To accomplish this, the act established the National Earthquake Hazard Reduction Program (NEHRP). NEHRP's mission includes improved understanding and characterization of hazards and vulnerabilities, improvement of building codes and land use practices, risk reduction through post-earthquake investigations and education, development and improvement of design and construction techniques, improvement of mitigation capacity, development of alternative performance objectives to advance functional recovery, and accelerated application of research results. The NEHRP designates the National Institute of Standards and Technology as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under the NEHRP help inform and guide planning and building code requirements, such as emergency preparedness responsibilities and seismic code standards.

Disaster Recovery Reform Act

The Disaster Recovery Reform Act was signed into law in 2018. The reforms acknowledge the shared responsibility for disaster response and recovery, are intended to reduce the complexity of the Federal Emergency Management Agency (FEMA), and build the nation's capacity for the next catastrophic event. The law, which amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act, contains 56 distinct provisions that require FEMA policy or regulation changes for full implementation. Examples of the provisions include expanding eligible hazard mitigation activities

including the replacement of electric utility poles resilient to extreme winds (Section 1204) and earthquake early warning technology (Section 1233).

Federal Land Policy and Management Act

The Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C Sections 1701-1787) provides the framework for the management of public lands administered by the Bureau of Land Management. FLPMA requires that public lands be managed under principles of multiple use and sustained yield, while protecting scientific, scenic, historical, ecological, environmental, and paleontological values. Under FLPMA, land-disturbing activities on lands managed by the Bureau of Land Management must be evaluated to determine potential impacts to paleontological resources, and mitigation measures

b. State Laws, Regulations, and Policies

Alquist-Priolo Earthquake Fault Zoning Act

The purpose of the Alquist-Priolo Earthquake Fault Zoning Act (PRC 2621 et seq.) is to regulate development near active faults so as to mitigate the hazard of surface fault rupture. 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 as within the last 11,000 years). A fault is considered well-defined if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface, using standard professional techniques, criteria and judgment (CGS 2018).

Additionally, the Alquist-Priolo Act requires lead agencies to prepare site specific fault identification investigations conducted by licensed geotechnical professionals, or to otherwise comply with any existing local policies that exceed or reasonably replace any of the Alquist-Priolo Act’s requirements. Fault identification studies required by the Alquist-Priolo Act involve on-site trenching and excavation for site specific identification and location of fault rupture planes where any future rupture would be anticipated. Structures intended for human occupancy (defined in the Act as a structure that might be occupied more than 2,000 hours per year) must be located at a minimum distance of 50 feet from any identified active fault traces.

Seismic Hazards Mapping Act

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (PRC 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 liquefaction, earthquake-induced landslides, and amplified ground shaking. 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 (CGS 2024).

California Building Code

The California Building Code (CBC) has been codified in the California Code of Regulations as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The 2022 CBC is based on the 2021 International Building Code (IBC) published by the International Code Council, though will be superseded by the 2025 CBC which is expected to become effective in January 2026. In addition, the CBC contains necessary California amendments, which are based on reference standards obtained from various technical committees and organizations, such as the American Society of Civil Engineers (ASCE), the American Institute of Steel Construction, and the American Concrete Institute. ASCE Minimum Design Standard 7-05 (ASCE 7-05) provides requirements for general structural design and includes means for determining earthquake loads, as well as other loads (e.g., flood, snow, wind), for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements consider the occupancy category of the structure, site class, soil classifications, and various seismic coefficients that are used to determine a Seismic Design Category (SDC) for a project as described in Chapter 16 of the CBC. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E (very high seismic vulnerability and near a major fault) and SDC F (hospitals, police stations, emergency control centers in areas near major active faults). Design specifications are then determined according to the SDC in accordance with Chapter 16 of the CBC. Chapter 16, Section 1613 provides earthquake loading specifications for design and construction to resist the effects of earthquake motions in accordance with ASCE 7-05.

Chapter 18 of the CBC covers the requirements of geotechnical investigations (Section 1803); excavation, grading, and fills (Section 1804); load-bearing of soils (1806); foundations (Section 1808); shallow foundations (Section 1809); and deep foundations (Section 1810). Chapter 18 also describes analysis of expansive soils and the determination of the depth to groundwater table. For SDC D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses mitigation measures to be considered in structural design, which may include ground stabilization, selection of appropriate foundation type and depths, selection of appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

Specifically, Section 1803.7 of the CBC requires geologic and earthquake engineering reports for all proposed construction. The purpose of the engineering report is to identify geologic and seismic conditions that may require mitigation. The reports, which are prepared by a California certified engineering geologist in consultation with a California-registered geotechnical engineer, assess the nature of the site and potential for earthquake damage based on appropriate investigations of the regional and site geology, project foundation conditions, and potential seismic shaking at the site.

These reports must consider the most recent CGS Note 48 (Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings), CGS Special Publication 42: Fault Rupture Hazard Zones in California (for project sites proposed within an Alquist-Priolo Zone), and the most recent version of CGS Special Publication 117: Guidelines for Evaluating and Mitigating Seismic Hazard in California (for project sites proposed within a Seismic Hazard Zone). All conclusions must be fully supported by satisfactory data and analysis.

The geotechnical report required by Section 1803 provides completed evaluations of the foundation conditions of the site and the potential geologic and seismic hazards. It includes site specific evaluations of design criteria related to the nature and extent of foundation materials, groundwater conditions, liquefaction potential, and settlement potential and slope stability, as well as the results of the analysis of problem areas identified in the engineering geologic report. The geotechnical report incorporates estimates of the characteristics of site ground motion provided in the engineering geologic report. The geotechnical report must be prepared by a geotechnical engineer registered in the State of California with the advice of the certified engineering geologist and other technical experts, as necessary. The approved engineering geologic report is submitted with, or as part of, the geotechnical report. Local jurisdictions in the StanCOG region typically regulate construction activities through a process that requires the preparation of and compliance with a site specific geotechnical investigation, consistent with Title 24, Part 2, Chapter 18 of the CBC.

Moreover, construction within seismic zones as identified by the Alquist-Priolo Act and the Seismic Hazards Mapping Act of 1990 (PRC 2690 -2699.6) are required by the CBC to follow more stringent regulations to withstand fault ruptures and ground shaking effects from seismic activities. The CBC provides standards for various aspects of construction, including but not limited to: excavation, grading and earthwork construction; fills and embankments; expansive soils; foundation investigations; liquefaction potential; and soil strength loss. In accordance with California law, proponents of specific projects are required to comply with all provisions of the CBC for certain aspects of design and construction.

California Department of Transportation Regulations and Seismic Design Criteria

The California Department of Transportation (Caltrans) has Seismic Design Criteria (SDC) which contain new and currently practiced seismic design and analysis methodologies for the design of new bridges in California. The SDC adopts a performance-based approach specifying minimum levels of structural system performance, component performance, analysis and design practices for ordinary standard bridges. The SDC has been developed with input from the Caltrans Offices of Structure Design, Earthquake Engineering and Design Support and Materials and Foundations. Memo 20-1 outlines the bridge category and classification, seismic performance criteria, seismic design philosophy and approach, seismic demands and capacities on structural components and seismic design practices that collectively comprise Caltrans' seismic design methodology (Caltrans 2010).

Clean Water Act Section 402

Section 402 of the Clean Water Act authorizes the California State Water Resources Control Board (SWRCB) to issue National Pollutant Discharge Elimination System (NPDES) General Construction Storm Water Permit (Order Number 2022-0057-DWQ, as amended), referred to as the "General

Construction Permit." Construction activities can comply with and be covered under the General Construction Permit provided that the permittee:

- Develops and implements a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will reduce the risk of construction pollutants from contacting stormwater and with the intent of minimizing sediment from moving off-site into receiving waters.
- Eliminates or reduces non-stormwater discharges to storm sewer systems and other waters of the nation.
- Performs inspections of all BMPs

California Surface Mining and Reclamation Act

The California Surface Mining and Reclamation Act (SMARA) mandated the initiation by the State geologist of mineral land classification to help identify and protect mineral resources in areas within the State subject to urban expansion or other irreversible land uses that would preclude mineral extraction. Areas are classified into MRZs based on the presence of deposits and how much evaluation of the resource has occurred.

SMARA also allowed the State Mining and Geology Board (SMGB), after receiving classification information from the State geologist, to designate lands containing mineral deposits of regional or Statewide significance. Areas designated by SMGB are incorporated by regulation into Title 14, Division 2 of the California Code of Regulations. Such designations require that a lead agency's land use decisions involving designated areas be made in accordance with its mineral resource management policies and that the lead agency consider the importance of the mineral resource to the region or the State as a whole and not just the lead agency's jurisdiction. In 1979, SMGB adopted guidelines for the management of mineral resources and preparation of local plans. The guidelines require local general plans to reference the State-identified mineral deposits and sites that are identified by the State geologist for conservation and/or future mineral extraction. Subsequently, SMGB identified urbanized areas where irreversible land uses precluded mineral extraction.

California Public Resources Code

Section 5097.5 of the Public Resources Code states:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

Here "public lands" means those owned by, or under the jurisdiction of, the state or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, public agencies are required to comply with Public Resources Code Section 5097.5 for their own activities, including construction and maintenance, and for permit actions (e.g., encroachment permits) undertaken by others.

c. Local Laws, Regulations, and Policies

Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan

The Stanislaus County MJHMP is a countywide plan managed by the Stanislaus County OES that identifies risks posed by disasters and identifies ways to minimize damage from those disasters (OES 2022). The 2022-2027 MJHMP was prepared in accordance with the Disaster Mitigation Act of 2000 and supersedes the 2017 Stanislaus County Local Hazard Mitigation Plan. The plan is a comprehensive resource document that serves many purposes, including: enhancing public awareness and understanding of disasters, and disaster-related planning, creating a decision tool for management, promoting compliance with State and federal program requirements, enhancing local policies for hazard mitigation capability, and providing inter-jurisdictional coordination. Natural hazards covered in the plan include earthquakes, landslides, dam failure, flooding, and wildfires (OES 2022).

Stanislaus County General Plan

The Stanislaus County General Plan Safety Element guides land use by providing pertinent data regarding geologic, soil, seismic, fire, and flood hazards. Policy Three of the Safety Element states that development should not be allowed in areas particularly susceptible to seismic hazards. Policy Three Implementation Measures include enforcement of Alquist-Priolo Earthquake Fault Zoning Act regulations, requiring development in areas of geologic hazards to include an acceptable evacuation route, requiring development adjacent to reservoirs to include the potential of seismically-induced seiche, minimization of seismic risk for new public roads in areas subject to seismic hazards, and addition of right-of-way widths if found necessary to provide added safety in geologically unstable areas. Additionally, Policy Four requires development west of I-5 in areas susceptible to landslides to present a geological report and follow any mitigation measures necessary to reduce potential impacts regarding landslides.

The Stanislaus County General Plan Conservation/Open Space Element emphasizes the conservation and management of natural resources. Policy 24 of the Conservation/Open Space Element of the Stanislaus County General Plan addresses paleontological resources: “The County will support the preservation of Stanislaus County's cultural legacy of archeological, historical, and paleontological resources for future generations.” Implementation Measure 5 explains how Stanislaus County plans to implement Policy 24:

> The County shall utilize the California Environmental Quality Act (CEQA) process to protect archaeological, historic, or paleontological resources. Most discretionary projects require review for compliance with CEQA. As part of this review, potential impacts must be identified and mitigated.

City of Ceres General Plan

The City of Ceres General Plan 2035 Health and Safety Element Goal 5.G aims to minimize the loss of life, injury, and property damage due to seismic or geologic hazards. Policies 5.G.1 through 5.G.8 require the City of Ceres to implement the California Building Code, require geotechnical reports for projects shown to have potential for expansive soils or geologic instability and require specific design specifications for expansive soils, implement design considerations for historic buildings and critical facilities, and require use of Best Management Practices to control and mitigate soil erosion during construction activities (City of Ceres 2018).

The Agricultural and Natural Resources Element of the Ceres General Plan 2035 includes Goal 4.I, which specifies the City's goal to "Protect and preserve archaeological and paleontological resources in the Planning Area" (City of Ceres 2018). Policy 4.I.4 "Paleontological Resources," implements Goal 4.I, and states:

- Establish a procedure for the management of paleontological materials found on-site during development, including the following provisions:
- If materials are found on-site during grading, require that work be halted until a qualified professional evaluates the find to determine if it represents a significant paleontological resource.
- If the resource is determined to be significant, the paleontologist shall supervise removal of the material and determine the most appropriate archival storage of the material.
- Appropriate materials shall be prepared, catalogued, and archived at the applicant's expense and shall be retained within Stanislaus County if feasible.

City of Modesto General Plan

The City of Modesto Urban Area General Plan Chapter VII, *Environmental Resources and Open Space*, requires that new structures must be designed to resist collapse in a magnitude 8.0 earthquake (City of Modesto 2019). The City of Modesto meets this requirement by enforcing the California Building Code and Alquist-Priolo Earthquake Fault Zoning Act.

Chapter VII "Environmental Resources and Open Space" of the City of Modesto General Plan addresses paleontological resources (City of Modesto 2019). It states:

> If paleontological resources are discovered during earth-moving activities, the construction crew shall immediately cease work in the vicinity of the find, and the City's Planning Manager shall be notified. A qualified paleontologist shall evaluate the resource and prepare a proposed mitigation plan in accordance with Society of Vertebrate Paleontology guidelines. The proposed mitigation plan may include a field survey of additional construction areas, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations determined by the lead agency to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

City of Turlock General Plan

The City of Turlock General Plan Safety Element Implementing Policies 10.2-b through 10.2-h minimize geologic and seismic risk. Specifically, these policies require adherence to the latest California Building Code, prohibit a building change to higher intensity use for seismically unsafe buildings, require geotechnical investigations for critical structures, require soils reports for development on sites with potential for unstable soils, and require erosion control plans (City of Turlock 2012).

Other City General Plans

The cities of Hughson, Newman, Oakdale, Patterson, Riverbank, and Waterford include General Plan safety and cultural resource policies that address geologic hazards and the protection of archaeological resources. Collectively, these jurisdictions require geotechnical investigations for new development in areas subject to seismic or soil-related hazards, adherence to the California Building

Code, and incorporation of appropriate mitigation measures to reduce risks associated with earthquakes, expansive soils, and erosion. Several cities also require design measures such as seismic-resistant infrastructure and underground utilities. In addition, these General Plans include policies to protect archaeological and cultural resources through environmental review consistent with CEQA and, where applicable, federal requirements, including the preparation of cultural resource assessments, Native American consultation, and implementation of mitigation measures or preservation strategies when resources are identified.

4.7.3 Impact Analysis

a. Methodology and Significance Thresholds

To evaluate the impacts of the transportation projects and land use scenario included in the proposed 2026 RTP/SCS related to geologic and seismic hazards as well as soil erosion, analysis is conducted in relation to known geologic hazards and features, including earthquake faults, ground failure, underlying geology, and soils. In determining the level of significance, the analysis assumes the proposed buildout would comply with relevant laws, regulations, and guidelines. The analysis is based on review of available documentation, including applicable general plans, local hazard mitigation plans, the CGS website, and USGS data and publications. The evaluations of the paleontological impacts of the proposed buildout is based on review of available documentation, including primary literature and online fossil databases available from the Paleobiology Database, Society of Vertebrate Paleontology and the University of California Museum of Paleontology.

Appendix G of the *CEQA Guidelines* identifies the following criteria for determining whether development facilitated by the proposed 2026 RTP/SCS would have a significant impact on geology and soils, namely an analysis of whether or not the proposed 2026 RTP/SCS would:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides;
2. Result in substantial soil erosion or the loss of topsoil;
3. 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;
4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;
5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; and/or
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

b. Project Impacts and Mitigation Measures

The following section discussed potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2026 RTP/SCS. Due to the programmatic nature of the proposed 2026 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation

improvements and future projects under the land use scenario envisioned by the proposed 2026 RTP/SCS could result in the impacts as described in the following section.

Threshold 1:	Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides?

Impact GEO-1 THE PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD NOT DIRECTLY OR INDIRECTLY CAUSE POTENTIAL SUBSTANTIAL ADVERSE EFFECTS, INCLUDING THE RISK OF LOSS, INJURY, OR DEATH INVOLVING RUPTURE OF A KNOWN EARTHQUAKE FAULT, STRONG SEISMIC GROUND SHAKING, SEISMIC-RELATED GROUND FAILURE, INCLUDING LIQUEFACTION, OR LANDSLIDES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Fault rupture can occur along or immediately adjacent to faults during an earthquake. Fault rupture is characterized by ground cracks and displacement which could endanger life and property. Damage is typically limited to areas close to the moving fault.

As indicated by Figure 4.7-2 there are Late Quaternary and Holocene-aged faults which are present in the southwest StanCOG region. There are proposed 2026 RTP/SCS transportation projects on I-5 and Highway 33, which are near Quaternary-aged faults. However, any potential structural damage and the exposure of people to the risk of injury or death from structural failure would be minimized by compliance with California Building Code engineering design and construction measures. Foundations and other structural support features would be designed to resist or absorb damaging forces from strong ground shaking.

Ground shaking effects are also the result of an earthquake, but the impacts can be widespread. Although a function of earthquake intensity, ground shaking effects can be magnified by the underlying soils and geology, which may amplify shaking at great distances. It is difficult to predict the magnitude of ground shaking following an earthquake, as shaking can vary widely within a relatively small area. The type of transportation and land use projects proposed under the proposed 2026 RTP/SCS are unlikely to exacerbate seismic activity, fault rupture, or increases in ground shaking due to the nature of the project's effects, including construction, being near or on the ground surface. Footings and pilings that could extend below the surface would be localized to the project site and require geological testing for specific impacts. The land use growth envisioned under the proposed 2026 RTP/SCS would create growth in existing urban areas, all of which do not fully or partially intersect any earthquake fault line as shown in Figure 4.7-2. Therefore, the potential to directly or indirectly cause adverse impacts due to rupture of a known earthquake fault related to planned transportation and land use projects from implementation of the proposed 2026 RTP/SCS would be less than significant.

Seismic related ground failure such as landslides may result from an earthquake in the StanCOG region. Unstable geologic formations susceptible to landslides occur in the Diablo Range to the west of I-5 and along river bluffs. As such, any projects located in these areas, including State Routes 4, 108, 120, 132, 219, and I-5, are particularly susceptible to landslides. The areas west of I-5 are classified as a landslide susceptibility class of four. There are proposed 2026 RTP/SCS projects which are proposed on these routes, and thus this impact is potentially significant.

As discussed in Section 4.7-1, *Setting,* the Stanislaus Multi-Jurisdictional Hazard Mitigation Plan does not identify liquefaction as a natural hazard in the county with any significant potential to cause a negative impact within the StanCOG region. The potential to directly or indirectly cause adverse

impacts due to seismic-related liquefaction from implementation of the proposed 2026 RTP/SCS would be less than significant.

All projects are required to adhere to design standards described in the CBC and all standard geotechnical investigation, design, grading, and construction practices to avoid or reduce impacts from earthquakes, ground shaking, ground failure, and landslides. These requirements would partially reduce seismic impacts. The CBC provides standards for various aspects of construction, including but not limited to: excavation, grading and earthwork construction; fills and embankments; expansive soils; foundation investigations; liquefaction potential; and soil strength loss. In accordance with California law, proponents of specific projects are required to comply with all provisions of the CBC for certain aspects of design and construction.

There are limited instances where the proposed land use pattern and planned transportation investments of the 2026 RTP/SCS may result in growth in or near a known earthquake fault that could result in strong seismic ground shaking and seismic-related ground failure. However, substantial geologic-related effects could still occur, including landslides along state routes which abut river bluffs. The type of transportation and land use projects planned under the proposed 2026 RTP/SCS are unlikely to exacerbate seismic activity, fault rupture, or increases in ground shaking due to the nature of the project's effects, including construction, being near or on the ground surface. Footings and pilings that could extend below the surface would be localized to the project site and require geological testing for specific impacts. The proposed 2026 RTP/SCS would not have the potential to exacerbate risks related to seismic activity. Compliance with the CBC and provisions of the Alquist-Priolo Act, including the preparation of a site-specific geotechnical investigation, would minimize the potential for seismic damage to occur as a result of implementation of proposed 2026 RTP/SCS projects. Based on the above analysis, impacts would be less than significant.

Mitigation Measures

Mitigation measures are not required because this impact would be less than significant, as jurisdictions are required to follow the protection policies and ordinances as described above.

Threshold 2: Would the project result in substantial soil erosion or the loss of topsoil?

Impact GEO-2 THE PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD NOT RESULT IN SUBSTANTIAL SOIL EROSION OR THE LOSS OF TOPSOIL. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Transportation projects and future land use development under the proposed 2026 RTP/SCS would include earthwork activities that expose soils to the effects of erosion or loss of topsoil. Once disturbed, either through removal of vegetation, asphalt, or demolition of a structure, stockpiled soils would be exposed to the effects of wind and water. Typically, erosion and loss of topsoil resulting from grading and development occur on a very small scale and do not present a quantifiable threat to a community. However, erosion and grading also have the potential to create unstable slopes and significant loss of topsoil can occur for projects where excavations require off-site soil disposal. Additionally, improper management of topsoil during construction can result in the soil becoming mobilized in stormwater runoff or during high-wind events.

Construction and buildout under the proposed 2026 RTP/SCS would occur in conformance with regulatory requirements and local ordinances pertaining to erosion control, including the Stanislaus County Code, Chapter 14.14 Stormwater Management and Discharge Control. Section 14.14.120 of the County Code requires that all construction activities in the County prevent pollutants, including

erosion, from entering the stormwater conveyance system and comply with all applicable federal, State and local laws, ordinances or regulations, including, but not limited to, the State's NPDES construction general permit. Pursuant to the NPDES permit, the Regional Water Quality Control Board would require a project-specific SWPPP) to be prepared for each project that disturbs an area one acre or larger for construction. The SWPPPs would include project-specific BMPs designed to control drainage and erosion. Project BMPs may include, but would not be limited to: silt fencing, fiber rolls, slope stabilization, and sand bags. These BMPs would be required as part of each individual project permit and would mitigate potential impacts on soil erosion as a result of construction or grading. Projects that would disturb less than one acre would be subject to the CalGreen requirements related to stormwater drainage that have been designed to prevent or reduce discharges of sediments through BMPs that include on-site retention and filtration. In addition, CalGreen regulations (Cal. Code Regs. Title 24, Part 11) include mandatory measures for residential and nonresidential development. Section 5.106.1 requires newly constructed nonresidential projects and additions of less than one acre to reduce the pollution of storm water runoff through compliance with a local ordinance or implementing BMPs that address soil loss. Specific projects would be subject to future project-level environmental review and would be required to comply with all applicable policies and regulations, including those applied at a local level.

NPDES permits in California cover MS4 permittees statewide, including many smaller municipalities within Stanislaus County. For jurisdictional projects, the Phase I and Phase II MS4 Permits require permittees to develop a stormwater management program and individual dischargers to develop and implement Stormwater Management Plans. The state Phase II MS4 Permit, as adopted by the SWRCB and Region 5 RWQCB, would apply to all projects envisioned by the proposed 2026 RTP/SCS that create or replace greater than 2,500 square feet of impervious surface.

For Caltrans projects, the Caltrans specific Stormwater Permit, as discussed Section 4.11.2, *Regulatory Setting,* of Section 4.10, *Hydrology and Water Quality*, regulates stormwater and non-stormwater discharges from Caltrans properties and facilities associated with operation and maintenance of the State highway system. Additionally, Caltrans developed a Statewide Stormwater Management Plan which describes the Caltrans stormwater management program and the minimum procedures and practices used to reduce pollutants in stormwater and non-stormwater discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. Projects on Caltrans facilities are required to follow the guidelines and procedures outlined in the latest Statewide Stormwater Management Plan and include BMPs in the project design to address stormwater runoff and thus erosion. Stanislaus County requires an erosion and control plan for construction projects disturbing less than one acre (Section 14.14.120 of the County Code). Cities in the StanCOG region also have similar erosion control and stormwater management regulations in their municipal codes.

Adherence to the applicable ordinance codes and other local, State and local regulatory programs, as discussed above, would ensure that project-specific erosion and topsoil loss would be minimized. Because such effects would not be substantial, impacts related to erosion and loss of topsoil would be less than significant.

Mitigation Measures

Mitigation measures are not required because this impact would be less than significant, as jurisdictions are required to follow the protection policies and ordinances as described above.

Threshold 3:	Would the project 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?
Threshold 4:	Would the project be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Impact GEO-3 IMPLEMENTATION OF THE PROPOSED TRANSPORTATION IMPROVEMENT PROJECTS AND FUTURE LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2026 RTP/SCS COULD BE LOCATED ON UNSTABLE SOILS SUBJECT TO LANDSLIDES AND SOILS SUBJECT TO EXPANSION. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the proposed 2026 RTP/SCS could be prone to slope instability, liquefaction, and other soil-related hazards.

Ground failure, including liquefaction, lateral spreading, and subsidence, caused by an earthquake could occur in the StanCOG region depending on the underlying conditions including groundwater level, relative size of soil particles, and density of subsurface materials within 50 feet of ground surface. Damage from earthquake-induced ground failure associated with liquefaction, lateral spreading, and subsidence could be high in buildings with foundations not properly constructed for such hazards. The mountainous areas and along steeply sloped streambanks in the StanCOG region are most susceptible to landslides or mudflows, especially when soils are wet and in areas adjacent to destabilized cut or fill.

It is not expected that projects envisioned in the proposed 2026 RTP/SCS would be susceptible to liquefaction or lateral spreading. As discussed in Section 4.7.1, *Setting,* liquefaction is not considered to be a risk within the StanCOG region. However, there is potential for some subsidence to occur. Impacts related to these types of geological hazards are site-specific and need to be evaluated on a project-by-project basis.

There are proposed 2026 RTP/SCS projects located along state routes which are adjacent to river bluffs, and as such these projects could be susceptible to landslides. Additionally, projects involving cut slopes of over 20 feet in height or projects located in areas of bedded or jointed bedrock are more likely to result in a landslide.

New land use development and transportation projects constructed on expansive soils could be subject to damage or could become unstable when the underlying soil shrinks or swells. Soils with high clay content have the highest potential for shrink-swell. Expansive soils have not been mapped consistently across the StanCOG region, thus it is not possible, at a programmatic-level review, to pinpoint specific projects that may be subject to expansive soils.

The preparation of site-specific geotechnical studies prepared in accordance with requirements as set forth by the CBC, the Seismic Hazards Mapping Act, and standard industry practices would reduce impacts related to slope instability, liquefaction, soil expansion, and ground failure. Future projects under the proposed 2026 RTP/SCS would also be required to comply with local general plans and local building code requirements that contain seismic safety policies to resist ground failure through construction techniques, including structural design. Potential structural damage and the exposure of people to the risk of injury or death from structural failure would be minimized by compliance with California Building Code engineering design and construction measures. Foundations and other structural support features would be designed to resist or absorb damaging

forces from expansive soils, liquefaction, or landslides. Land use and transportation projects included in the proposed 2026 RTP/SCS would be required to comply with the CBC, and local building standards including the implementation of geotechnical practices such as ground treatments or replacing existing soils with engineered fill. Transportation projects that would involve the construction or improvements of bridge or overpass design would also be required to comply with Caltrans seismic design criteria which would reduce potential ground failure hazards. The proposed 2026 RTP/SCS would not have the potential to exacerbate risks related to ground failure.

Therefore, impacts related to ground failure hazards, including liquefaction, lateral spreading, and subsidence would be less than significant with compliance with the CBC, local general plans and building standards, and Caltrans design criteria for transportation projects where applicable.

Mitigation Measures

Mitigation measures are not required because this impact would be less than significant, as jurisdictions are required to follow the protection policies and ordinances as described above.

Threshold 5:	Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?

Impact GEO-4 IMPLEMENTATION OF THE PROPOSED TRANSPORTATION IMPROVEMENT PROJECTS AND FUTURE LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD NOT INCLUDE PROJECTS THAT WOULD REQUIRE THE USE OF SEPTIC TANKS OR ALTERNATIVE WASTEWATER DISPOSAL SYSTEMS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The proposed 2026 RTP/SCS does not include projects that would require the use of septic tanks or alternative wastewater disposal systems. The expansion and/or improvement of streets, highways, transit facilities, airports, and related transportation infrastructure would not include elements that would require wastewater treatment or otherwise necessitate the development of septic systems. Most future land use development projects that may be implemented as a result of the proposed 2026 RTP/SCS would be anticipated to connect to existing centralized wastewater infrastructure. Any development projects in rural areas requiring septic tanks or alternative wastewater disposal systems would be required to comply with State Water Resources Control Board regulations for the siting, installation, operation, and maintenance of on-site wastewater treatment systems, pursuant to Assembly Bill 885. Septic systems in the StanCOG region would also be required to comply with the design standards set forth by the Stanislaus County Code of Ordinances Section 20.52.210, Sewage Disposal and Water Supply, which states the County Director of Environmental Resources will determine suitability of the placement of septic tanks. Cities within the StanCOG region would further require compliance with local ordinances pertaining to septic systems. Therefore, impacts related to having soils incapable of adequately supporting the use of septic tanks and alternative wastewater disposal systems would be less than significant.

Mitigation Measures

Mitigation measures are not required because this impact would be less than significant, as jurisdictions are required to follow the protection policies and ordinances as described above.

Threshold 6:	Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact GEO-5 IMPLEMENTATION OF THE PROPOSED TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE 2026 RTP/SCS COULD CAUSE A SUBSTANTIAL ADVERSE CHANGE IN OR DISTURB KNOWN AND UNKNOWN PALEONTOLOGICAL RESOURCES AS DEFINED IN CEQA UNDER GUIDELINES SECTION 15064.5. IMPACTS TO PALEONTOLOGICAL RESOURCES WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Paleontological resources are present throughout the StanCOG region. Therefore, it is possible to encounter known and unknown paleontological resources as a result of implementation of transportation improvement projects pursuant to the proposed 2026 RTP/SCS. Paleontological resources are by nature specific to their local context, and as such, impacts on these resources would occur at the local level. Projects involving excavation, grading, or soil removal in previously undisturbed areas have the greatest likelihood to encounter these resources.

The *CEQA Guidelines* provide no definition to the term "unique geologic feature." This phrase also has no common definition. However, a geologic unit for this document is considered unique if it is a stratotype, contributes to scientific research, or is exclusive to the region.

Many of the improvements proposed under the proposed 2026 RTP/SCS consist of minor expansions of existing facilities that would not involve construction in previously undisturbed areas. However, depending on the location and extent of the proposed improvement and ground disturbance, paleontological resources could be impacted. There are mapped areas with a higher occurrence of paleontological features, but it should be noted that any project overlying a geologic unit with high paleontological sensitivity could result in impacts, regardless of location relative to existing development. It is also possible that construction activities associated with some of the proposed roadway widening or extension projects could adversely impact paleontological resources by exposing them to potential vandalism or causing displacement from the original context and integrity.

In addition, the proposed 2026 RTP/SCS contains a future land use scenario that emphasizes infill near transit and within existing urbanized areas, but with development still allowed in more suburban and rural areas. However, it is still possible that paleontological resources could be located on or near future infill sites, as well as on undisturbed sites that may be developed under the future land use scenario. Project grading and excavation for land development may disturb these known or undiscovered resources. Compliance with and implementation of assessment requirements set forth by the Paleontological Resources Preservation Act, the Federal Land Policy and Management Act, the Antiquities Act, Section 5097.5 of the PRC, adopted county and city general plans would reduce impacts to paleontological resources and unique geologic features. However, projects envisioned under the proposed 2026 RTP/SCS would still have the potential to directly or indirectly destroy localized paleontological resources and unique geologic features that are of regional significance, and impacts would be significant.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the proposed 2026 RTP/SCS program where applicable for transportation projects that would result in impacts to paleontological resources and where feasible and necessary based on project and site-specific considerations. Cities and the County can and should implement these measures,

where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

GEO-5 Paleontological Resources Impact Minimization

The implementing agency of a 2026 RTP/SCS project involving ground disturbing activities (including grading, trenching, foundation work and other excavations) shall retain a qualified paleontologist, defined as a paleontologist who meets the Society of Vertebrate Paleontology (SVP) standards for Qualified Professional Paleontologist (SVP 2010), to conduct a Paleontological Resources Assessment (PRA). The PRA shall determine the age and paleontological sensitivity of geologic formations underlying the proposed disturbance area, consistent with SVP Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (SVP 2010) guidelines for categorizing paleontological sensitivity of geologic units within a project area. If underlying formations are found to have a high potential (sensitivity) for paleontological resources, the following measures shall apply:

- **Avoidance.** Avoid routes and project designs that would permanently alter unique paleontological and geological features. If avoidance practices cannot be implemented, the following measures shall apply.
- **Paleontological Mitigation and Monitoring Reporting Program.** A Qualified Paleontologist shall prepare a Paleontological Resources Monitoring and Mitigation Program to be implemented during ground disturbance activity. This program shall outline the procedures for construction staff training, paleontological monitoring extent and duration (i.e., in what locations and at what depths paleontological monitoring shall be required), salvage and preparation of fossils, the final mitigation and monitoring report and paleontological staff qualifications.
- **Paleontological Worker Environmental Awareness Program (WEAP).** Prior to the start of ground disturbance activity, construction personnel shall be informed on the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff.
- **Paleontological Monitoring.** Ground disturbing activity with the potential to disturb geologic units with high paleontological sensitivity, as determined by initial paleontological surveying or records search as deemed appropriate, shall be monitored on a full-time basis by a qualified paleontological monitor. Should no fossils be observed during the first 50 percent of such excavations, paleontological monitoring could be reduced, under the discretion of the qualified paleontologist, to weekly spot-checking. Monitoring shall be conducted by a qualified paleontological monitor, defined as an individual who has experience with collection and salvage of paleontological resources and meets the minimum standards of the SVP (2010) for a Paleontological Resources Monitor If it is determined that the fossil(s) is (are) scientifically significant, the Qualified Paleontologist shall complete the following conditions to mitigate impacts to significant fossil resources:
    - **Fossil Salvage**. If fossils are discovered, the implementing agency shall be notified immediately, and the qualified paleontologist (or paleontological monitor) shall recover them. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case, the paleontologist should have the authority to temporarily direct, divert or halt

construction activity to ensure that the fossil(s) can be removed in a safe and timely manner.

- **Preparation and Curation of Recovered Fossils**. Once salvaged, fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection along with all pertinent field notes, photos, data, and maps.
- **Final Paleontological Mitigation and Monitoring Report**. Upon completion of ground disturbing activity (and curation of fossils, if necessary) the Qualified Paleontologist shall prepare a final mitigation and monitoring report outlining the results of the Paleontological Mitigation and Monitoring Program. The report shall include discussion of the location, duration and methods of the monitoring, stratigraphic sections, any recovered fossils, and the scientific significance of those fossils, and where fossils were curated. The report shall be submitted to the sponsor agency. If the monitoring efforts recovered fossils, then a copy of the report shall also be submitted to the designated museum repository.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

Significance After Mitigation

Implementation of the above mitigation measure would reduce impacts to paleontological resources by requiring a Paleontological Resources Assessment for any projects under the proposed 2026 RTP/SCS that may impact sensitive paleontological resources. While implementation of Mitigation Measure GEO-5 would reduce impacts to the extent feasible, some project-specific impacts may be unavoidable. Therefore, this impact is significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.

4.7.4 Cumulative Impacts

The cumulative impact analysis area for geology and soils, and paleontological resources consists of the StanCOG region and adjoining counties. Information regarding these adjoining counties can be found in Chapter 3, *Environmental Setting, 3.3.4 Approach for Cumulative Analysi*s. Future development in this region that could impact geology and soils and paleontological resources is considered in this analysis. This cumulative extent is used to evaluate potential direct and indirect, permanent and temporary impacts to increased exposure to seismic hazards, increased erosion and/or loss of topsoil, the presence of unstable or expansive soils, and the presence of paleontological resources or unique geologic features within the context of the cumulative impact analysis area.

Geology and soils impacts may be related to increased exposure to seismic hazards, increased erosion and/or loss of topsoil, the presence of unstable/expansive soils and alternative waste disposal or septic systems. Individual projects and developments in the cumulative impacts analysis area would be subject to geologic hazards based on site-specific conditions and project design. These effects occur independently of one another and are caused by site specific and project specific characteristics and conditions. In addition, existing regulations, such as the California Building Code, specify mandatory actions that must occur during project development which would

minimize effects from construction and operation of projects related to geology, soils, and seismicity as discussed above. Cumulative impacts related to geology, soils and seismicity would therefore be less than significant.

While projects envisioned under the proposed 2026 RTP/SCS may be subject to seismic hazards, including fault rupture, ground-shaking, and landslides, compliance with applicable requirements would reduce impacts. Future development envisioned under the proposed 2026 RTP/SCS would be required to comply with the California Building Code, Seismic Hazards Mapping Act, Alquist Priolo Act, local building codes, and general plan goals and policies. Furthermore, geology and soils impacts are site specific by nature and would not result in cumulative impacts to the surrounding area. The proposed 2026 RTP/SCS would not have a cumulatively considerable contribution to significant cumulative impacts related to geology, soils and seismicity.

Development and construction in the cumulative impacts analysis area would require excavation and ground disturbance. Excavation and ground disturbance could encounter and damage or destroy subsurface paleontological resources, depending on underlying geologic units and soils. While most paleontological resources are typically site specific, with impacts that are project specific, others may have regional significance. For example, fossils may capture a particular type of organism that was endemic to a region and therefore have regional significance. Due to the potential for a fossil of regional significance to be uncovered during excavation and ground disturbing activities of projects in the cumulative impact analysis area, cumulative impacts would be significant.

The proposed 2026 RTP/SCS could cause a substantial adverse change in or disturb known and unknown paleontological resources and would therefore result in a cumulatively considerable contribution to the significant impact. Mitigation measures outlined in Impact GEO-5, would reduce paleontological resource impacts associated with proposed 2026 RTP/SCS projects. However, the proposed 2026 RTP/SCS contribution would remain cumulatively considerable after mitigation because it cannot be guaranteed that all future project level impacts can be mitigated to a less than significant level. As such, the proposed 2026 RTP/SCS contribution to cumulative impacts to paleontological resources would remain cumulatively considerable after mitigation.

4.8 Greenhouse Gas Emissions and Climate Change

This section evaluates potential impacts related to greenhouse gas (GHG) emissions and climate change facilitated by the proposed 2026 RTP/SCS. Air quality impacts are discussed in Section 4.3, *Air Quality.*

4.8.1 Setting

a. Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. The term "climate change" is often used interchangeably with the term "global warming," but "climate change" is preferred to "global warming" because it helps convey other changes in addition to rising temperatures. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate changes continuously, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed substantial acceleration in the rate of warming during the past 150 years (Intergovernmental Panel on Climate Change [IPCC] 2021). The understanding of anthropogenic warming and cooling influences on climate has led to an unequivocal understanding that human activities have been the dominant cause of warming since the mid-nineteenth century (IPCC 2021).

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). GHGs that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are primarily determined by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. Of these gases, CO_2, CH_4, and N_2O are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing associated with agricultural practices and landfills. N_2O is produced by microbial processes in soil and water, including those reactions that occur in fertilizers that contain nitrogen, fossil fuel combustion, and other chemical processes. Man-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases and SF_6.

Different types of GHGs have varying global warming potentials (GWPs). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as "carbon dioxide equivalent" (CO_2e) and is the amount of a GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 28, meaning its warming effect is 28 times greater than carbon dioxide on a molecule-per-molecule basis (IPCC 2014). N_2O has a GWP of 265 (IPCC 2014).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat-trapping effect of GHGs, the earth's surface would be about 33 degrees Celsius (°C) cooler (World Meteorological Organization 2021). However, since 1750, estimated concentrations of CO_2, CH_4, and N_2O in the atmosphere have increased by 47 percent, 156 percent, and 23 percent, respectively, primarily due to human activity (IPCC 2021). GHG emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, are believed to have elevated the concentration of these gases in the atmosphere beyond the level of concentrations that occur naturally.

b. Greenhouse Gas Emissions Inventories

United States Emissions Inventory

Total U.S. GHG emissions were 6,343 MMT of CO_2e in 2022. Emissions increased in 2022 by 1 percent (after accounting for sequestration from the land sector) compared to the previous year. The increase in total greenhouse gas emissions was driven largely by an increase in CO_2 emissions from fossil fuel combustion. In 2022, CO_2 emissions from fossil fuel combustion increased by 1 percent relative to the previous year. This increase in fossil fuel consumption emissions was from increased energy use, due in part to the continued rebound in economic activity after the height of the COVID-19 pandemic. GHG emissions in 2022 (after accounting for sequestration from the land sector) were 17 percent below 2005 levels. In 2022, the industrial and transportation end-use sectors accounted for 23 percent and 28 percent, respectively, of nationwide GHG emissions while the commercial and residential end-use sectors accounted for 13 percent of nationwide GHG emissions (U.S. Environmental Protection Agency [USEPA] 2025a).

California Emissions Inventory

Based on the California Air Resources Board (CARB) California GHG Inventory for 2000-2023, California produced 360.4 million metric tons of CO_2e in 2023 (CARB 2025a). The largest single source of GHG in California is transportation, contributing 37.1 percent of the State's total GHG emissions. In the transportation sector, passenger vehicles are the main contributor with 28.3 percent of emissions generated by these vehicles. Heavy-duty vehicles account for approximately 6.4 percent and the remaining two percent is from other sources of transportation (e.g., aviation, ships, and rail). Industrial sources are the second-largest source of the state's GHG emissions, contributing 18.6 percent of the State's GHG emissions (CARB 2025a). Emissions from this sector are primarily produced from refineries, oil and gas extraction, cement plans, and general fuel use. The electric power sector contributed 15.9 percent of the State's GHG emissions, with emissions from in-state power generation and imported electricity being the primary sources. Residential and commercial fuel combustion (e.g., natural gas and other fuels for space heating, cooking, and hot water or steam generation) account for 12 percent of the State's GHG emissions. The agriculture sector contributes 8.1 percent of the State's GHG emissions, with the major emissions sources being enteric fermentation and manure management from livestock, crop production, and fuel combustion for agriculture activities. The remaining 8 percent is due high GWP gases (5.8 percent) and waste (2.4 percent). High GWP gases include ozone depleting substance substitutes, SF_6 emissions from electricity transmission and distribution, and gases emitted by the semiconductor manufacturing process. Waste sources include landfills and commercial-scale composting.

c. Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Long-term trends have found that each of the past four decades has been warmer than all the previous decades in the instrumental record and the decade from 2011 through 2020 has been the warmest. The observed global mean surface temperature (GMST) for the decade from 2011 to 2020 was approximately 1.09°C (0.95°C to 1.20°C) higher than the average GMST over the period from 1850 to 1900. Due to past and current activities, anthropogenic GHG emissions are increasing global mean surface temperature at a rate of 0.2°C per decade. In addition to these findings, the latest IPCC report states that "human-induced climate change is already affecting many weather and climate extremes in every region across the globe" (IPCC 2021). These climate change impacts include climate change sea level rise, increased weather extremes, and substantial ice loss in the Arctic over the past three decades.

According to *California's Fourth Climate Change Assessment*, statewide temperatures from 1986 to 2016 were approximately 0.6 to 1.1°C higher than those recorded from 1901 to 1960. Potential impacts of climate change in California may include reduced water supply from snowpack, sea level rise, more extreme heat days per year, more large forest fires, and more drought years (State of California 2018). In addition to statewide projections, *California's Fourth Climate Change Assessment* includes regional reports that summarize climate impacts and adaptation solutions for nine regions of the state and regionally specific climate change case studies (State of California 2018). However, while there is growing scientific consensus about the possible effects of climate change at a global and statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. A summary follows of some of the potential effects that could be experienced in California and the StanCOG region as a result of climate change.

Public Health

Climate change is expected to cause a number of impacts which could negatively affect public health in the StanCOG region. As temperatures increase, the Central Valley is set to experience an increased number of extreme heat days, which may lead to increases in the number of heat-related deaths and illnesses (State of California 2018). An increase in the frequency and severity of wildfires may contribute to worsening air quality and cause additional illnesses such as asthma. Higher temperatures could also lead to increased air pollution formation and potentially accelerate the spread of certain diseases and pests. These adverse impacts may also disproportionately burden vulnerable populations.

Air Quality

Scientists project that the annual average maximum daily temperatures in California could rise by 2.4 to 3.2°C in the next 50 years and by 3.1 to 4.9°C in the next century (State of California 2018). Higher temperatures are conducive to air pollution formation, and rising temperatures could therefore result in worsened air quality in California. As a result, climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. In addition, as temperatures have increased in recent years, the area burned by wildfires throughout the state has increased, and wildfires have occurred at higher elevations in

the Sierra Nevada Mountains (State of California 2018). If higher temperatures continue to be accompanied by an increase in the incidence and extent of large wildfires, air quality could worsen. Severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state.

Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of streamflow and precipitation) indicates a history of naturally varying hydrologic conditions in California and the western United States, including recurring and extended droughts. However, recent research indicates that hydroclimate variability has increased, with larger swings between wet and dry conditions occurring in recent decades. Uncertainty remains regarding the overall impact of climate change on future precipitation trends and water supplies, although observations indicate that precipitation variability has intensified, with more frequent extreme wet and dry years influenced in part by atmospheric rivers (California Department of Water Resources 2022). This increasing variability complicates the analysis of future water demand, particularly where the relationship between climate change and water demand remains uncertain.

The average early spring snowpack in the western U.S., including the Sierra Nevada Mountains, decreased by about 10 percent during the last century. During the same period, sea level rose over 0.15 meters along the central and southern California coasts (State of California 2018). The Sierra snowpack provides the majority of California's water supply as snow that accumulates during wet winters is released slowly during the dry months of spring and summer. A warmer climate is predicted to reduce the fraction of precipitation that falls as snow and the amount of snowfall at lower elevations, thereby reducing the total snowpack (State of California 2018). Projections indicate that average spring snowpack in the Sierra Nevada and other mountain catchments in central and northern California will decline by approximately 66 percent from its historical average by 2050 (State of California 2018).

Agriculture

California has a roughly $60 billion annual agricultural industry that produces nearly half of the country's vegetables and over three quarters of the country's fruits and nuts (California Department of Food and Agriculture 2025). Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent, which would increase water demand as hotter conditions lead to the loss of soil moisture. In addition, crop yield could be threatened by water-induced stress and extreme heat waves, and plants may be susceptible to new and changing pest and disease outbreaks (State of California 2018). Temperature increases could also change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (California Climate Change Center 2006).

Ecosystems and Wildlife

Climate change and the potential resultant changes in weather patterns could have ecological effects at the global and local scale. Rising temperatures could have four major impacts on plants and animals: timing of ecological events; geographic distribution and range of species; species composition and the incidence of nonnative species within communities; and ecosystem processes, such as carbon cycling and storage (Parmesan 2006; State of California 2018).

4.8.2 Regulatory Setting

The following regulations address both climate change and GHG emissions.

a. Federal Laws, Regulations, and Policies

There is no overarching federal law specifically related to climate change or the reduction of GHG emissions. Additionally, in March 2025, the current administration announced that the U.S. Environmental Protection Agency (USEPA) will undertake 31 actions, focusing primarily on reconsidering actions adopted by previous administrations, including numerous actions and regulations related to climate change and the reduction of GHG emissions (USEPA 2025b). These include, but are not limited to, reconsideration of regulations on power plants, the Mandatory Reporting Rule, the Endangerment Finding, and fuel economy standards, among others.

On February 12, 2026, USEPA finalized a rule rescinding the 2009 GHG Endangerment Finding and repealing all GHG emission standards for light-duty, medium-duty, and heavy-duty vehicles and engines under CAA Section 202(a); the rule was published in the Federal Register on February 18, 2026, and became effective on April 20, 2026 (USEPA 2025c). This action removes federal GHG emission standards for on-road vehicles and engines and associated regulatory provisions (including those in 40 CFR Part 600), while not affecting requirements related to criteria pollutants, Corporate Average Fuel Economy (CAFE) standards, or fuel economy labeling, and is currently subject to ongoing legal challenges that may influence its implementation.

Federal Fuel Economy and Emissions Standards

Corporate Average Fuel Economy Standards

The Energy Policy and Conservation Act of 1975 established CAFE standards, which are federal regulations administered by the National Highway Traffic Safety Administration that set fuel economy requirements for new passenger cars and light trucks sold in the United States. In 2024, National Highway Traffic Safety Administration finalized CAFE standards for model years 2027 through 2031, which are projected to achieve an industry-wide fleet average of approximately 49 miles per gallon for passenger cars and light trucks.

On February 12, 2026, USEPA rescinded the 2009 GHG Endangerment Finding and repealing all GHG emission standards for light-duty, medium-duty, and heavy-duty vehicles and engines under CAA Section 202(a); the rule was published on February 18, 2026, and became effective on April 20, 2026 (USEPA 2025c). This action removes federal GHG-related regulatory provisions, including those in 40 CFR part 600, while leaving CAFE standards and fuel economy labeling requirements administered by National Highway Traffic Safety Administration unaffected; however, the rule is subject to ongoing legal challenges that may influence its implementation.

Federal Motor Vehicle GHG Emissions Standards

The federal motor vehicle GHG emission standards were adopted by USEPA under Section 202(a) of the CAA following the 2009 Endangerment Finding, which determined that GHG emissions from motor vehicles contribute to air pollution that may endanger public health and welfare.

As mentioned above, on February 12, 2026, USEPA rescinded the 2009 Endangerment Finding and repealing all federal GHG emission standards for light-, medium-, and heavy-duty vehicles and engines; the rule was published in the Federal Register on February 18, 2026, and became effective on April 20, 2026 (USEPA 2025c). This action removes the federal regulatory basis for GHG emission

standards under CAA Section 202(a) and eliminates associated compliance obligations for manufacturers, although the rule is currently subject to ongoing legal challenges that may affect its implementation.

Accordingly, federal motor vehicle GHG emission standards are no longer in effect as of the rule's effective date; however, regulatory conditions may continue to evolve pending the outcome of litigation and related federal actions.

Executive Order 14260

Issued on April 8, 2025, Executive Order 14260 challenges state-level climate and energy regulations that are deemed to exceed constitutional authority. It directs the Attorney General to identify and pursue legal action against state laws that impose retroactive fines, carbon caps, or other climate-related claims. The order specifically targets policies in states such as California, New York, and Vermont that regulate emissions or energy infrastructure in ways that may affect interstate commerce. It asserts federal primacy over energy regulation and seeks to prevent states from influencing national energy policy through environmental justice or environmental, social, and governance frameworks.

b. State Laws, Regulations, and Policies

CARB is responsible for the coordination and oversight of state and regional GHG emissions reduction programs in California. There are numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below.

Executive Order S-3-05

Executive Order S-3-05, among other things, established the following GHG emission reduction goals for California: reduction to 2000 levels by 2010; to 1990 levels by 2020; and to 80 percent below 1990 levels by 2050.

Assembly Bill 1493 and Advanced Clean Cars

Assembly Bill (AB) 1493 (Chapter 200, Statutes of 2002), known as the "Pavley bill," amended Health and Safety Code Sections 42823 and 43018.5 requiring CARB to develop and adopt regulations that achieve maximum feasible and cost-effective reduction of GHG emissions from passenger vehicles, light-duty trucks and other vehicles used for noncommercial personal transportation in California.

Implementation of new regulations prescribed by AB 1493 required that the State of California apply for a waiver under the federal Clean Air Act. Although USEPA initially denied the waiver in 2008, USEPA approved a waiver in June 2009, and in September 2009, CARB approved amendments to its initially adopted regulations to apply the Pavley standards that reduce GHG emissions to new passenger vehicles in model years 2009 through 2016. In 2012, CARB approved the Low-Emission Vehicle III GHG regulation, which requires further reductions in passenger GHG for 2017 and subsequent vehicle model years. According to CARB, implementation of the Pavley regulations is expected to reduce fuel consumption while also reducing GHG emissions.

In 2022, CARB approved the Advanced Clean Cars II rule regulating model years from 2026 to 2035. The rule establishes a year-by-year roadmap so that by 2035, 100 percent of new cars and light trucks sold in California would be zero-emission vehicles, including plug-in hybrid electric vehicles. The regulation realizes and codifies the light-duty vehicle goals set out in Governor Newsom's Executive Order N-79-20. By 2040, CARB anticipates that the rule would reduce GHG emissions from

light-duty vehicles by 50 percent for a cumulative total of 395 MMT CO2e from 2026 through 2040. USEPA granted CARB its California's Clean Air Act waiver request or the Advanced Clean Cars rule on December 18, 2024. However, Public Law 119-16 enacted on June 12, 2025, disapproves of this regulation under the Congressional Review Act, retroactively revoking the state's waiver issued by USEPA under the Clean Air Act to implement the Advanced Clean Cars II rule. The implications of this law on the State's capability to enforce its ACC II rule are uncertain at this time, as the California Attorney filed a lawsuit challenging P.L. No. 119-16 on June 12, 2025. Whether this action will be successful is unknown, as is the possibility that a federal judge will issue a stay to halt the implementation of the ACC II rule during the legal process.

Advanced Clean Trucks and Low-NOx Regulation

The Advanced Clean Trucks (ACT) rule is a CARB regulation that requires medium and heavy-duty truck manufacturers to gradually increase the percentage of zero-emission vehicles they sell in the state. Effective in March 2021, the rule mandates that by 2035, 55 percent of Class 2b-3 truck sales, 75 percent of Class 4-8 straight truck sales, and 40 percent of truck tractor sales must be zero-emission vehicles. The goal is to accelerate the transition to zero-emission trucks. USEPA granted the waiver request under the CAA to enact the more stringent fuel economy components of the ACT rule on April 6, 2023. However, Public Law 119-15 enacted on June 12, 2025, disapproves of this regulation under the Congressional Review Act, retroactively revoking the state's waiver issued by USEPA under the Clean Air Act to implement the Advanced Clean Trucks regulation.

The Heavy-Duty Low-NO_x Omnibus Regulation was adopted by CARB in 2021 (effective December 22, 2021; amended in May 2024), and mandates steep reductions in NO_x and PM emissions from new medium- and heavy-duty diesel and Otto-cycle engines starting with model year 2024. By full rollout, the regulation is projected to eliminate approximately 17–23 tons/day of NO_x by 2031. However, Public Law 119-17 enacted on June 12, 2025, disapproves of this regulation under the Congressional Review Act, retroactively revoking the state's waiver issued by USEPA under the Clean Air Act to implement the low-NO_x regulation.

The implications of these laws on the State's capability to enforce its ACT and Low NOx rules are uncertain at this time, as the California Attorney filed a lawsuit challenging P.L. Nos. 119-15 and 17 on June 12, 2025. Whether this action will be successful is unknown, as is the possibility that a federal judge will issue a stay to halt the implementation of the ACT and Low NOx rules during the legal process.

Advanced Clean Fleets

CARB adopted the Advanced Clean Fleets (ACF) Regulation in 2023, which included updated requirements for drayage trucks operating at seaports and intermodal railyards. Beginning January 1, 2024, only zero-emission drayage trucks can be newly registered in CARB's Truck Regulation Upload, Compliance, and Reporting System. Existing legacy trucks must meet annual operational and useful life requirements to remain in service, with non-compliant vehicles removed from the registry starting in 2025. By 2035, all drayage trucks operating in California must be zero-emission, supporting statewide goals to reduce diesel particulate matter, NOx, and greenhouse gas emissions, particularly in communities disproportionately impacted by freight-related pollution.

On January 23, 2025, CARB withdrew its request for a Clean Air act waiver for the ACF Regulation. CARB is not enforcing the federal and private fleets portions of the ACF that require a Clean Air Act waiver but is enforcing portions of the ACF Regulation that do not require a Clean Air Act waiver, such as the state and local government fleets portion.

Assembly Bill 1007

AB 1007 (Chapter 371, Statutes of 2005) required the California Energy Commission to prepare a State plan to increase the use of alternative fuels in California. The California Energy Commission prepared the State Alternative Fuels Plan in partnership with CARB and in consultation with other State, federal and local agencies (United States Department of Energy 2007). The State Alternative Fuels Plan presents strategies and actions California must take to increase the use of alternative non- petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The State Alternative Fuels Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Assembly Bill 32

The California Global Warming Solutions Act of 2006, AB 32, outlines California's major legislative initiative for reducing GHG emissions. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main state strategies for reducing GHG emissions to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 target of 431 MMT CO2e, which was achieved in 2016. CARB approved the Scoping Plan on December 11, 2008, which included GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among others (CARB 2008). Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since the Scoping Plan's approval.

CARB approved the 2013 Scoping Plan update in May 2014 (CARB 2014). The update defined the CARB's climate change priorities for the next five years, set the groundwork to reach post-2020 statewide goals, and highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the state's longer term GHG reduction strategies with other state policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use (CARB 2014).

Senate Bill 32

On September 8, 2016, the governor signed Senate Bill (SB) 32 into law, extending the California Global Warming Solutions Act of 2006, by requiring the state to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation, such as SB 1383 and SB 100 (discussed later). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with statewide per capita goals of six MT CO2e by 2030 and two MT CO2e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county,

sub-regional, or regional level), but not for specific individual projects because they include all emissions sectors in the state (CARB 2017).

Assembly Bill 1279

AB 1279, the California Climate Crisis Act, was passed on September 16, 2022, and declares the State would achieve net zero GHG emissions as soon as possible, but no later than 2045, and to achieve and maintain net negative GHG emissions thereafter. In addition, the bill states that the State would reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045.

In response to the passage of AB 1279 and the identification of the 2045 GHG reduction target, CARB published the Final 2022 Climate Change Scoping Plan in November 2022 (CARB 2022). The 2022 Scoping Plan builds upon the framework established by the 2008 Climate Change Scoping Plan and previous updates while identifying new, technologically feasible, cost-effective, and equity focused path to achieve California's climate target. The 2022 Scoping Plan includes policies to achieve a significant reduction in fossil fuel combustion, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

The 2022 Scoping Plan assesses the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan, addresses recent legislation and direction from Governor Gavin Newsom, extends and expands upon these earlier plans, and implements a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045, as well as taking an additional step of adding carbon neutrality as a science-based guide for California's climate work. As stated in the 2022 Scoping Plan, "The plan outlines how carbon neutrality can be achieved by taking bold steps to reduce GHGs to meet the anthropogenic emissions target and by expanding actions to capture and store carbon through the state's natural and working lands and using a variety of mechanical approaches" (CARB 2022). Specifically, the 2022 Update:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045, and a reduction in anthropogenic emissions by 85 percent below 1990 levels.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as driving principles throughout the document.
- Incorporates the contribution of natural and working lands to the State's GHG emissions, as well as their role in achieving carbon neutrality.
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits of taking action.
- Identifies key implementation actions to ensure success.

In addition to reducing emissions from transportation, energy, and industrial sectors, the 2022 Scoping Plan includes emissions and carbon sequestration in natural and working lands and explores how natural and working lands contribute to long-term climate goals. Under the Scoping Plan Scenario, California's 2030 emissions are anticipated to be 48 percent below 1990 levels, representing an acceleration of the current SB 32 target. Cap-and-Trade regulation continues to play a large factor in the reduction of near-term emissions for meeting the accelerated 2030 reduction target. Every sector of the economy will need to begin to transition in this decade to meet the GHG emissions reduction goals and achieve carbon neutrality no later than 2045. The 2022 Scoping Plan approaches decarbonization from two perspectives, managing a phasedown of existing energy sources and technologies, as well as increasing, developing, and deploying alternative clean energy sources and technology.

Executive Order B-55-18

On September 10, 2018, the governor issued Executive Order B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets. The 2022 Scoping Plan Update assesses progress towards achieving the SB 32 target and layout out a path to achieve carbon neutrality. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

Executive Order S-01-07

Executive Order S-01-07 (17 CCR 95480 et seq.) required the state to achieve a 10 percent or greater reduction by 2020 in the average fuel carbon intensity for transportation fuels in California regulated by CARB. CARB identified the Low Carbon Fuel Standard as a discrete early action item under AB 32. The 2020 target was achieved in 2016.

In 2018, CARB approved amendments to the Low Carbon Fuel Standard regulation (CARB 2018), which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

Executive Order B-16-12

Executive Order B-16-12 orders State entities under the direction of the Governor including CARB, the Energy Commission, and the California 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, including:

- Infrastructure to support up to one million zero emission vehicles by 2020,
- Widespread use of zero emission vehicles for public transportation and freight transport by 2020,
- Over 1.5 million zero emission vehicles on California roads by 2025,
- Annual displacement of at least 1.5 billion gallons of petroleum fuels by 2025, and
- A reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels by 2050.

Executive Order N-19-19

Executive Order N-19-19 was signed on September 20, 2019 and is intended to require the redoubling of the state's efforts to reduce GHG emissions and mitigate the impacts of climate change while building a sustainable, inclusive economy. The Executive Order includes four main directives which include investment, transportation, state buildings and operations, and zero emissions vehicles.

California Renewables Portfolio Standard Program

Senate Bill 1078 (Chapter 516, Statutes of 2002) established California's initial Renewables Portfolio Standard (RPS), requiring retail sellers of electricity—including investor-owned utilities and community choice aggregators—to procure 20 percent of their electricity from renewable sources by 2017. The legislation also mandated annual increases in renewable procurement of at least one percent.

This goal was later accelerated by Senate Bill 107 (2006), which moved the 20 percent target forward to 2010. California successfully met this revised target and has continued to expand its RPS program through subsequent legislation. The RPS has since evolved to require 33 percent renewable electricity by 2020 (SB 2 [1X]), 50 percent by 2030 (SB 350 of 2015), and 60 percent by 2030 with a goal of 100 percent carbon-free electricity by 2045 (SB 100 of 2018).

The RPS program is jointly implemented by the CPUC and CEC and has been instrumental in driving the development of solar, wind, geothermal, and other renewable energy resources statewide.

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard Program. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 50 percent by 2026, 60 percent by 2030, and 100 percent by 2045.

Senate Bill 375

The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the state's ability to achieve significant GHG reductions from changes to land use patterns and improved transportation networks. SB 375 directs CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. Metropolitan Planning Organizations are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the Metropolitan Planning Organization's Regional Transportation Plan (RTP). On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. StanCOG's updated reduction target is 16 percent per capita GHG emissions reduction from 2005 levels by 2035 (CARB 2025b).

StanCOG's previous (2022) RTP/SCS reduced per capita GHG emissions to meet the target set by CARB of 16 percent reduction from 2005 levels by 2035. This targets applies to the entire StanCOG region for all on-road light duty trucks and passenger vehicles emissions, and not to individual cities or sub-regions. StanCOG, through the proposed 2026 RTP/SCS, must continue to meet the 2035 target. SB 375 specifically states that nothing in the law changes local governments' local land use authorities.

The proposed 2026 RTP/SCS provides a regional policy foundation that local governments may build upon if they so choose. The proposed 2026 RTP/SCS includes and accommodates the growth projections for the region. SB 375 also requires that forecasted development patterns for the region be consistent with the eight-year regional housing needs as allocated to member jurisdictions through the Regional Housing Needs Allocation process under State housing law.

In addition, this EIR lays the groundwork for the streamlined environmental review of qualifying development projects. Qualifying projects that meet statutory criteria and are consistent with the proposed 2026 RTP/SCS are eligible for streamlined environmental review pursuant to CEQA under SB 375 and other laws.

Assembly Bill 197

AB 197 of 2016 (Chapter 250, Statutes of 2016) expands CARB membership to include two nonvoting members from the Legislature; creates a Joint Legislative Committee on Climate Change Policies to make recommendations to the Legislature concerning climate change policies; provides for annual reporting of GHG emissions from sectors covered by the AB 32 Scoping Plan as well as evaluations of regulatory requirements and other programs that may affect GHG emissions trends; and specifies that the adoption of GHG emissions reduction rules and regulations shall consider the social costs. In addition, Scoping Plan updates are required to identify the range of potential GHG emissions reductions and the cost-effectiveness for each emissions reduction measure, compliance mechanism and incentive.

Executive Order N-79-20

Executive Order N-79-20 established a Statewide goal that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035 and a further goal of the State that 100 percent of medium- and heavy-duty vehicles in the State be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks.

Executive Order N-82-20

Executive Order N-82-20 established a goal of conserving at least 30 percent of California's lands and coastal waters by 2030 and directed state agencies to create a Natural and Working Lands Climate Smart Strategy to advance the State's carbon neutrality goal and builds climate resilience.

Senate Bill 1383

Adopted in September 2016, SB 1383 requires CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. The bill requires the California Department of Resources Recycling and Recovery (CalRecycle), in consultation with CARB, to adopt regulations that achieve:

- 50-percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020; and
- 75-percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2025.

The bill also mandates various state and local agencies develop further strategies to reduce emissions generated by specific industries such as agriculture. The stated goal is to achieve the following reduction targets by 2030:

- Methane – 40 percent below 2013 levels
- Hydrofluorocarbons – 40 percent below 2013 levels
- Anthropogenic black carbon – 50 percent below 2013 levels

California Building Energy Efficiency Standards

The California Code of Regulations Title 24 is referred to as the Building Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy efficiency standards for residential and non-residential buildings to reduce California's energy demand. New construction and major renovations must demonstrate their compliance with the current Energy Code through submittal and approval of a Title 24 Compliance Report to the local building permit review authority and the CEC.

Future land use projects would be subject to the 2025 California Building Energy Efficiency Standards, codified in Title 24, Part 6 of the California Code of Regulations, which take effect on January 1, 2026. These standards are designed to reduce energy consumption in residential and non-residential buildings, support California's climate goals, and improve indoor environmental quality.

Key updates to the 2025 standards include expanded requirements for heat pump technologies, electric readiness for future electrification, enhanced ventilation and indoor air quality measures, and battery storage system readiness for homes with larger electrical service capacities. These measures are expected to reduce building energy demand, lower greenhouse gas emissions, and support integration of distributed energy resources.

AB 130 of 2025 imposes a moratorium on changes to California building codes affecting residential units, including both state and local amendments, through 2031, with limited exemptions. Essentially, AB 306 would prohibit CEC or any other adopting agency from considering, approving, or adopting any proposed building standards affecting residential units, unless a certain condition is met, including that the CEC deems those changes necessary as emergency standards to protect health and safety. The 2025 Energy Code became effective on January 1, 2026, and the 2031 Energy Code cycle is anticipated to be unaffected.

California Green Building Standards Code

The 2026 California Green Building Standards Code (CALGreen), codified in Title 24, Part 11 of the California Code of Regulations, and effective in 2025, establishes mandatory minimum environmental performance standards for newly constructed residential and non-residential buildings statewide. These standards are enforced by local jurisdictions and address key sustainability areas including energy efficiency, water conservation, material resource efficiency, and indoor environmental quality.

CALGreen also includes voluntary tiers (Appendices A4 and A5) that provide enhanced environmental performance options. These voluntary measures are intended as model provisions for jurisdictions considering above-code ordinances (also known as "reach codes") or for builders seeking additional compliance flexibility under the California Energy Code.

California State Transportation Agency Climate Action Plan for Transportation Infrastructure

The Climate Action Plan for Transportation Infrastructure (CAPTI) was adopted in July 2021 (California State Transportation Agency 2025). CAPTI details how the state recommends investing billions of discretionary transportation dollars annually to aggressively combat and adapt to climate change while supporting public health, safety and equity. CAPTI builds on executive orders signed by Governor Gavin Newsom in 2019 and 2020 targeted at reducing GHG emissions in transportation, which account for more than 40 percent of all emissions, to reach the state's ambitious climate goals.

Throughout 2024, the California State Transportation Agency engaged with public stakeholders to develop new strategies which informed an updated CAPTI 2.0, adopted in January 2025 as an update to the original CAPTI (California State Transportation Agency 2025). CAPTI 2.0 builds on the original plan and introduces four new strategies, which include the following:

- S1. Transforming the Future of the State Highway System
- S2. Reducing GHG Impacts of Transportation Investments
- S3. Delivering Equitable Outcomes
- S4. Improving Transparency and Accountability

Each strategy includes specific actions, for a total of 14 new actions necessary for further implementation of the CAPTI framework to align transportation infrastructure investments with California's climate goals. Such changes would help advance a slate of projects that meet climate goals, ensure that these projects are prioritized for state funding, and promote project construction and operations that minimize emissions and impacts from climate change (California State Transportation Agency 2025).

c. Local Laws, Regulations, and Policies

Local Climate Action Plans and GHG Reduction Strategies

Two of the nine member jurisdictions in the StanCOG region – the City of Hughson and City of Oakdale – have adopted Climate Action Plans (CAPs) that set emission reduction goals and outline policies to achieve GHG reductions consistent with AB 32 (City of Hughson 2013; City of Oakdale 2013). These CAPs address a range of emission sources, including transportation, building energy use, and municipal operations such as water supply and conveyance, wastewater treatment, and solid waste management.

Across the StanCOG region, transportation and energy consumption represent the primary sources of GHG emissions. To address these sources, policies contained in adopted CAPs and General Plans establish a framework to reduce emissions through improved land use planning, transportation system enhancements, and energy conservation measures. Transportation-related policies are intended to reduce vehicle miles traveled (VMT) by promoting alternative modes of travel, including bicycling, walking, and public transit, as well as by supporting transit-oriented development patterns. In addition, policies aimed at reducing energy-related emissions encourage increased energy efficiency in both residential and nonresidential development, implementation of building retrofit programs, and reduced reliance on fossil fuels through the promotion of renewable energy systems.

The remaining member jurisdictions, including the cities of Modesto, Ceres, Turlock, Riverbank, Newman, Patterson, and Waterford, have not adopted standalone CAPs. For these jurisdictions, climate change considerations and GHG reduction strategies are incorporated within General Plans and other planning documents. Stanislaus County and cities within the County have adopted policies within their General Plans to reduce overall energy consumption, improve energy efficiency, and encourage the use of renewable energy. These policies are further discussed in Section 4.6, *Energy*.

General Plans prepared by each of the member jurisdictions include policies that support GHG emissions reductions and climate change mitigation. These policies include measures to increase waste diversion, support the development of pedestrian and bicycle infrastructure, and improve land use patterns to reduce reliance on automobile travel. In some jurisdictions, including the cities of Patterson, Riverbank, and Turlock, General Plans include specific goals, policies, and implementation measures that address GHG emissions from transportation, energy use, and other sectors.

4.8.3 Impact Analysis

a. Methodology and Significance Thresholds

Methodology

Mobile Source Emissions Modeling

GHG emissions from on-road mobile sources were calculated using the emission factors, fleet mix, and vehicle trip and population estimates from CARB's EMFAC2021 model and regional VMT from StanCOG's Regional Travel Demand Model (as further described in Section 4.14, *Transportation*), shown in Table 4.8-1. EMFAC2021 reflects CARB's most current assumptions regarding vehicle regulations and fleet turnover. Following guidance from CARB, adjustments were made to emission factors to account for emissions impacts from recent federal actions affecting California motor vehicle standards— including Advanced Clean Cars II, Advanced Clean Trucks (ACT), Zero-Emission Airport Shuttle requirements, Heavy-Duty Vehicle and Engine Warranty and Maintenance Provisions (Warranty Phase 1), and the Heavy-Duty Omnibus regulation (EMFAC 2021 v. 1.0.2). Although these federal actions are subject to ongoing legal proceedings, use of the latest available CARB-released EMFAC model and associated adjustments are appropriate for CEQA analysis as it provides the most conservative analysis approach. Detailed methodologies and calculations are provided in Appendix F.

Table 4.8-1 Proposed 2026 RTP/SCS Total Daily VMT

Year	Total Daily VMT
2005 Baseline (SB 375 Baseline)	9,129,097
2023 Baseline	11,736,343
2030 with Proposed 2026 RTP/SCS	11,949,978
2035 with Proposed 2026 RTP/SCS	12,249,388
2045 with Proposed 2026 RTP/SCS	12,686,997
2049 with Proposed 2026 RTP/SCS	13,012,130

[1] Regional VMT only includes vehicle miles traveled within the StanCOG region.
VMT = vehicle miles traveled
Source: Appendix F

Projected emissions from all vehicle types on the StanCOG transportation network for the year 2049 under proposed 2026 RTP/SCS conditions were compared with emissions estimated for baseline year 2023. The proposed 2026 RTP/SCS scenario was also compared with emissions estimated for year 2049 without implementation of the proposed 2026 RTP/SCS for informational purposes.

Total transportation related GHG emissions were evaluated using daily regional VMT with emissions reported in terms of CO_2e, which captures vehicle miles traveled on trips that travel within the StanCOG region. For the purposes of evaluating consistency with the SB 32 target, 2005 daily regional VMT (which captures trips within the region only) was utilized. This is needed to back-calculate estimated 1990 emissions levels pursuant to CARB's guidance to assume 1990 emissions levels are roughly equivalent to a 15 percent reduction from baseline 2005 emissions levels (CARB 2008). In addition, for the SB 32 consistency analysis, emissions were calculated in terms of CO_2e, which represents a mass-based metric that aggregates all GHGs based on their global warming potential into a single comparable unit. Using CO_2e allows emissions of different gases (e.g., CO_2, methane, nitrous oxide) to be evaluated collectively in a manner consistent with state inventory and reduction targets. The estimated project-related CO_2e emissions were then compared to baseline statewide emissions levels (1990) and the SB 32 target year (2030) to evaluate consistency with California's legislatively mandated goal of reducing GHG emissions to 40 percent below 1990 levels by 2030. In this context, the CO_2e estimates serve as a proxy for assessing the project's incremental contribution to statewide emissions and the associated percent change over time between the 1990 baseline and 2030 target scenario.

SB 375 Analysis

To determine whether the proposed 2026 RTP/SCS would allow StanCOG to meet its SB 375 reduction targets, per capita CO_2e emissions were calculated by multiplying the emission factors by the VMT from passenger vehicles and dividing by the region's population. For the purposes of this analysis, the year 2005 is used as the baseline year per the requirements of SB 375.

StanCOG calculated 2005 emissions using EMFAC2011. EMFAC2011 was used to calculate SB 375-based baseline conditions because it was CARB's latest approved model version at the time of SB 375 target development. Subsequent evaluations of the SB 375 targets require Metropolitan Planning Organizations to utilize the same model version (EMFAC2011) for consistency, or to create an adjustment factor for emissions in 2005 and future years estimated using a different model version. StanCOG calculated the 2035 per capita GHG emissions using EMFAC2014 and created an adjustment factor to account for the two versions of EMFAC used. StanCOG elected to use EMFAC2014 to estimate future emissions as this model version incorporated several changes, new data, and new methodology for calculating motor vehicle emissions compared to EMFAC2011. While a newer EMFAC model was used than the one applied for 2005 emissions, the adjustment factor accounts for potential differences between EMFAC2011 and EMFAC2014 model results.

The EMFAC model generates an output of CO_2e emissions, which were used as the overall indicator of GHG emissions associated with passenger vehicles. The CO_2e emissions associated with vehicle starts are accounted for in the EMFAC model based on the distribution of vehicle starts by vehicle classification, vehicle technology class, and operating mode. EMFAC adds these vehicle starts to the running emissions to compute total on-road mobile source emissions.

Consistency with SB 32, the 2022 Scoping Plan, and AB 1279

Meeting the goals of SB 375 does not guarantee consistency with SB 32, AB 1279, and the 2022 Scoping Plan. As described above, SB 375 is only concerned with VMT from specific passenger

vehicle categories. For an analysis regarding SB 32 and AB 1279, the full fleet needs to be accounted for because these policies pertain to all mobile emissions as well as land use emissions. To determine that a project would not conflict with the State's ability to achieve the SB 32 target or the AB 1279 target, the 2026 RTP/SCS would need to achieve substantial progress toward achieving the target reductions. Mobile source emissions were calculated to determine regionwide GHG emissions with implementation of the 2026 RTP/SCS. If implementation of the 2026 RTP/SCS would achieve substantial progress toward the emissions reduction targets established by SB 32 and AB 1279, then impacts related to these policies would not be considered significant.

The State Legislature has codified targets of reducing emissions to 40 percent below 1990 emissions levels by 2030 (SB 32) and 85 percent below 1990 emissions levels by 2045 (AB 1279). The 2022 Scoping Plan Update was developed to demonstrate how the State will achieve the 2045 target and stay on track to meet the 2030 SB 32 target. The plan also identifies a path to achieve carbon neutrality by 2045.

While state and regional regulators of energy and transportation systems, along with the State's Cap-and-Trade program, are designed to be set at limits to achieve most of the reductions needed to attain the State's long-term targets, local governments can do their fair share toward meeting the State's targets by siting and approving projects that accommodate planned population growth and projects in ways that are GHG-efficient. The Association of Environmental Professionals (AEP) Climate Change Committee recommends that CEQA GHG analyses evaluate project emissions in light of the trajectory of state climate change legislation and assess their "substantial progress" toward achieving long-term reduction targets identified in available plans, legislation, or executive orders (AEP 2016).

Consistent with AEP Climate Change Committee recommendations, GHG impacts are analyzed using a threshold based on the State's 2030 and 2045 targets, which evaluates whether the project would impede "substantial progress" toward meeting the reduction goals identified in SB 32, and AB 1279. Because SB 32 is considered an interim target toward meeting the 2045 State goals, consistency with SB 32 is considered to be contributing substantial progress toward meeting the State's long-term 2045 goals.

Significance Thresholds

Appendix G of the CEQA Guidelines identifies the following two general criteria for determining whether a project's impacts would have a significant impact related to GHG emissions. Specific criteria under each general criterion have been developed for this EIR.

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. An increase that exceeds the following threshold would be considered a significant impact:
    a. A net increase in GHG emissions by 2049 compared to baseline conditions.
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Any conflict with the following thresholds would be considered a significant impact:
    a. Conflict with regional SB 375 per capita passenger vehicle CO_2 emission reduction targets of 16 percent by 2035 from 2005 levels;
    b. Conflict with state's ability to achieve SB 32 GHG reduction target, which aims to reduce statewide emissions to 40 percent below 1990 levels by 2030;

c. Conflict with state's ability to achieve AB 1279 net zero greenhouse gas emissions goal as soon as possible, but no later than 2045, and to achieve and maintain net negative greenhouse gas emissions thereafter, and to ensure that by 2045, statewide anthropogenic greenhouse gas emissions are reduced to at least 85 percent below the 1990 levels; and/or
d. Conflict with applicable local GHG emission reduction plans.

The San Joaquin Valley Air Pollution Control District has not adopted GHG significance thresholds that are applicable to evaluating the impacts of the proposed 2026 RTP/SCS in light of the State's post-2020 GHG emission reduction targets. In the absence of applicable District-adopted thresholds, this section uses the project-specific thresholds of significance listed above for each GHG impact criterion in Appendix G.

b. Project Impacts and Mitigation Measures

The following section discusses impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2026 RTP/SCS. Due to the programmatic nature of the proposed 2026 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement projects and future projects under the land use scenario envisioned by the proposed 2026 RTP/SCS could result in the impacts as described in the following section.

Threshold 1:	Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. An increase that exceeds the following threshold would be considered a significant impact: a. A net increase in GHG emissions by 2049 compared to baseline conditions

Impact GHG-1 CONSTRUCTION OF THE TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD GENERATE GHG EMISSIONS THAT MAY HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Construction activities associated with transportation improvement projects and future land use projects envisioned by the proposed 2026 RTP/SCS would generate temporary short-term GHG emissions primarily due to the operation of construction equipment and truck trips. GHG emissions from construction can vary depending on the level of activity, the specific operations taking place, the equipment being operated, and other factors. However, because such emissions are dependent on the characteristics of individual development projects, construction-related emissions are speculative at the RTP/SCS level. At the program-level of analysis, it is not feasible to quantify the amount of emissions expected from implementation of the proposed 2026 RTP/SCS. This is due to the variability in the extent of construction based on site conditions throughout the StanCOG region and the lack of project details needed to conduct such an analysis. Therefore, this analysis includes a qualitative analysis of potential GHG emissions from construction activity associated with projected land use development and proposed transportation projects.

Construction activity tends to be temporary in nature and would be expected to occur throughout the planning period of the proposed 2026 RTP/SCS. During construction activities, GHG emissions would be emitted from vehicular travel to and from the worksites and the operation of construction equipment such as graders, backhoes, and generators. Site preparation and grading typically generate the greatest amount of emissions due to the intensive use of grading equipment and soil

hauling. The level of GHG emissions from the construction of any one project or of all projects combined would be primarily dependent on the particular type, size, quantity, engine type, fuel type, and fuel efficiency of the equipment and the duration of their operation at the construction site or in the region. Construction activities generally result in annual GHG emissions that represent a small proportion of total annual GHG emissions from operational sources such as transportation and land use emissions. For example, the Southern California Association of Governments noted in their 2020-2045 RTP/SCS PEIR that total construction-related emissions typically account for less than 0.3 percent of total GHG emissions for the entire region (Southern California Association of Governments 2020).

Construction activities generally result in annual GHG emissions that represent a small proportion of total annual GHG emissions. Nonetheless, construction activities would still result in GHG emissions would still result in GHG emissions exceeding the 2023 baseline, which would constitute a significant impact. The following mitigation measures would be required.

Mitigation Measures

For all transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measure developed for the proposed 2026 RTP/SCS where applicable for transportation projects generating construction-related GHG emissions. Cities and the County can and should implement this measure, where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project-specific environmental documents may adjust this mitigation measure as necessary to respond to site-specific conditions. Implementation of Mitigation Measures AQ-2(b) and AQ-2(c) in Section 4.3, *Air Quality*, would also reduce construction GHG emissions from the proposed 2026 RTP/SCS.

GHG-1 Construction GHG Reduction Measures

The implementing agency shall incorporate the most recent GHG reduction measures and/or technologies for reducing GHG emissions measures for off-road construction vehicles during construction. The measures shall be noted on all construction plans, and the project sponsor shall perform periodic site inspections. Current GHG-reducing measures include the following:

- Off road diesel construction equipment meeting the most stringent CARB emissions standards for off-road heavy-duty diesel engines must be used (e.g., as of 2026, this would be Tier 4 emission standards). Where the use of the most stringent CARB emissions standards for off-road heavy-duty diesel engines is not feasible, the next lower tier shall be used; where the use of the next lower tier is not feasible, the next lowest tier shall be used.
- Use of on-road heavy-duty trucks that meet CARB's most stringent or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation;
- All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the five-minute idling limit;
- Substitute gasoline-powered in place of diesel-powered equipment, where feasible;
- Use of alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel, in place of diesel-powered equipment for 15 percent of the fleet, to the extent electric powered equipment is not feasible;
- Use of materials sourced from local suppliers;
- Recycling of at least 75 percent of construction waste materials; and

- Implementing agencies shall incentivize that construction workers carpool, and/or use electric vehicles to commute to and from the project site.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

Significance After Mitigation

Implementation of Mitigation Measure GHG-1 would reduce short-term construction emissions from individual projects and thus reduce the severity of impacts by requiring best practices for exhaust emissions via readily available, lower-emitting diesel equipment, and/or equipment powered by alternative cleaner fuels (e.g., propane) or electricity, as well as on-road trucks using particulate exhaust filters. Implementation of Mitigation Measures AQ-2(b) and AQ-2(c) would also reduce GHG emissions from the proposed 2026 RTP/SCS. However, these mitigation measures may not be feasible or effective for all projects. Therefore, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 1:	Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment? An increase that exceeds the following threshold would be considered a significant impact: b. A net increase in GHG emissions by 2049 compared to baseline conditions

Impact GHG-2 PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD RESULT IN A NET INCREASE IN GHG EMISSIONS BY 2049 COMPARED TO THE BASELINE CONDITIONS AND WOULD THEREFORE HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Transportation-Related Emissions

Table 4.8-2 compares the total transportation-related emissions from all vehicle classes for baseline (2023) conditions and with implementation of the proposed 2026 RTP/SCS. As presented in Table 4.8-2, implementation of the proposed 2026 RTP/SCS would result in a net reduction in per capita emissions of 1 MT of CO_2e per person per year and a net reduction in total emissions of 441,749 MT of CO_2e per year, compared to baseline (2023) conditions. The estimated reduction in total mobile source emissions is primarily due to stricter fuel efficiency and vehicle emissions standards such as the CAFE standards that will phase in over the planning period as reflected in EMFAC2021 emission factors. In addition, the estimated reduction in per capita mobile source emissions is also the result of slower growth in VMT as compared to forecast population growth, due to the improved circulation networks and multimodal transportation initiatives outlined in the proposed 2026 RTP/SCS, which would reduce per capita VMT.

Because the proposed 2026 RTP/SCS would result in a net decrease in overall transportation-related GHG emissions in the StanCOG region, operational activities under the plan would not generate GHG emissions that may have a significant impact on the environment, and impacts would be less than significant.

Table 4.8-2 Proposed 2026 RTP/SCS Net Change in Transportation-Related Emissions (2023-2049)

Scenario	Total Emissions (MT of CO_2e/year)	Per Capita Emissions (MT of CO_2e/person/year)[1]
Baseline (2023)	2,032,339	3.7
2049 with Proposed 2026 RTP/SCS	1,590,590	2.6
Net Change from 2023 Baseline	**(441,749)**	**(1.0)**
Threshold of Significance	> 0	> 0
Threshold Exceeded?	No	No

( ) denotes a negative number.

MT = metric tons; CO_2e = carbon dioxide equivalent

[1] The baseline (2023) population of the StanCOG region is 551,297 persons, and the future (2049) population is forecast to be 602,220 persons.

Source: Appendix F

The estimated reduction in total mobile source emissions is, in part, due to stricter fuel efficiency and vehicle emissions standards that will phase in over the planning period as reflected in EMFAC2021 emission factors.[1] In addition, the estimated reduction in per capita mobile source emissions is also the result of slower growth in VMT as compared to forecast population growth, due to the improved circulation networks and multimodal transportation initiatives outlined in the proposed 2026 RTP/SCS, which would reduce per capita VMT. The proposed 2026 RTP/SCS would also result in a slight net reduction in VMT, and associated emissions as compared to the future "No Project" scenario due to implementation of strategies and proposed RTP/SCS projects. Because the proposed 2026 RTP/SCS would result in a net decrease in overall transportation-related emissions in the StanCOG region, operational activities for transportation projects under the plan would not generate GHG emissions that may have a significant impact on the environment, and impacts would be less than significant.

Other Land Use Development Emissions

In addition to the transportation-related GHG emissions shown in Table 4.8-2, land use projects envisioned by the land use scenario in the proposed 2026 RTP/SCS would also result in GHG emissions due to sources such as electricity and natural gas consumption. Residential, commercial, agricultural, and other land uses would result in GHG emissions; however, data is not available to quantify impacts from such sources. For instance, agricultural machinery and processes have unique emission factors, and GHG emissions must be calculated using precise information regarding specific processes. Furthermore, emissions from land use projects cannot be feasibly quantified at this time because details about future land use projects and their timing are unknown at this time. Therefore, because future land use projects would represent new sources of GHG emissions, it can be conservatively estimated that total GHG emissions from the land use scenario envisioned by the proposed 2026 RTP/SCS would increase over the planning period. Although per capita emissions associated with electricity and natural gas consumption, water and wastewater conveyance and treatment, and solid waste disposal are anticipated to decline, primarily as a result of increasingly stringent iterations of State building code standards (specifically, the California Energy Code and the

[1] Following guidance from CARB, adjustments were made to emission factors to account for emissions impacts from recent federal actions rescinding U.S. EPA approval of California motor vehicle standards— including Advanced Clean Cars II, Advanced Clean Trucks (ACT), Zero-Emission Airport Shuttle requirements, Heavy-Duty Vehicle and Engine Warranty and Maintenance Provisions (Warranty Phase 1), and the Heavy-Duty Omnibus regulation.

California Green Building Standards Code), total emissions may increase due to population growth and future land use projects. As a result, impacts of land use projects implementing the proposed 2026 RTP/SCS would be significant.

Mitigation Measures

Cities and the County can and should implement the following mitigation measure, where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

GHG-2 Land Use Project Energy Consumption and Water Use Reduction Measures

The cities and the County, when processing discretionary land use projects, shall implement the following measures as applicable and feasible to the project. The cities and the County may also incorporate these measures into their local planning regulations.

Measures to reduce GHG emissions for land use projects include, but are not limited to:

- Require new residential and commercial construction to install solar energy systems or be solar-ready
- Require new residential and commercial development to install low flow water fixtures
- Require new residential and commercial development to install water-efficient drought-tolerant landscaping, including the use of compost and mulch
- Require new development to exceed the applicable Title 24 energy-efficiency requirements
- Require new residential and commercial development to offer information on recycling, composting, and disposal of household hazardous waste and e-waste
- Require new development to implement circulation design elements in parking lots for non-residential uses to reduce vehicle queuing and improve the pedestrian environment

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for land use projects are cities and the County. This mitigation measure can and should be applied during project permitting and environmental review and implemented during project operation, as applicable.

Significance After Mitigation

If implementing agencies adopt and require the mitigation described above, impacts would be reduced because energy, water use, solid waste generation, and VMT related GHG emissions from land use projects would be reduced. However, implementation of project-level GHG-reducing measures may not be feasible and cannot be guaranteed on a project-by-project basis. Therefore, this impact would remain significant and unavoidable. No additional feasible mitigation measures are available that would ensure no net increase in GHG emissions compared to baseline conditions.

Threshold 2:	Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? Any conflict with the following thresholds would be considered a significant impact: a. Conflict with regional SB 375 per capita passenger vehicle CO_2 emission reduction targets of 16 percent by 2035 from 2005 levels

Impact GHG-3 THE TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD CONFLICT WITH REGIONAL SB 375 PER CAPITA PASSENGER VEHICLE CO_2 EMISSION REDUCTION TARGETS OF 16 PERCENT BY 2035 FROM 2005 LEVELS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

One of the goals of SB 375 is to reach the per capita GHG emissions reduction targets for passenger vehicles set by CARB through an integrated land use, transportation, and housing plan. Achievement of this goal is an objective of the proposed 2026 RTP/SCS. The target from CARB, analyzed in this EIR, is identified as a 16 percent reduction in per capita passenger vehicle emissions from 2005 levels by 2035.[2] Table 4.8-3 presents the percent change in per capita passenger vehicle emissions for 2035 as compared to the 2005 baseline. The per capita transportation-related emissions from passenger vehicles include off-model adjustments that represent a reasonable level effect of the transportation programs included in the proposed 2026 RTP/SCS.

Table 4.8-3 Per Capita Passenger Vehicle CO_2 Emissions Comparison

	Percent Change in Per Capita CO_2 Emissions (lbs/day)		
	2005 Baseline (per SB 375)	2035	2049
Per Capita Passenger Vehicle Emissions[1]	15.47	12.14	10.17
Percent Change from in Per Capita GHG Emissions from 2005		-21.6%	-34.2%
SB 375 Target		-16%	n/a[2]
SB 375 Target Met?		Yes	n/a[2]

CO_2 = carbon dioxide; lbs = pounds; SB = Senate Bill

Source: Appendix F

[1]Per capita passenger vehicle emissions for 2035 and 2049 derived from reduction percentages provided by StanCOG

[2]SB 375 targets have not been adopted for post-2035 years.

As shown in Table 4.8-3, implementation of the proposed 2026 RTP/SCS in the year 2035 would result in a decrease of per capita passenger vehicle CO_2 emissions of 34.2 percent compared to 2005 levels. Therefore, implementation of the proposed 2026 RTP/SCS would achieve the SB 375 GHG reduction target for StanCOG of 16 percent by 2035, and the proposed 2026 RTP/SCS would therefore be consistent with SB 375. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

[2] The SB 375 target for 2020 is not utilized herein as a threshold of significance because the 2026 RTP/SCS would apply only to future transportation and land use planning from the year of adoption (anticipated to be 2025) forward.

Threshold 3:	**Would the project** conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? Any conflict with the following thresholds would be considered a significant impact: b. Conflict with state's ability to achieve SB 32 GHG reduction target, which aims to reduce statewide emissions to 40 percent below 1990 levels by 2030 c. Conflict with state's ability to achieve AB 1279 net zero greenhouse gas emissions goal as soon as possible, but no later than 2045, and to achieve and maintain net negative greenhouse gas emissions thereafter, and to ensure that by 2045, statewide anthropogenic greenhouse gas emissions are reduced to at least 85 percent below the 1990 levels; and/or d. Conflict with applicable local GHG reduction plans

Impact GHG-4 IMPLEMENTATION OF THE PROPOSED 2026 RTP/SCS WOULD CONFLICT WITH THE STATE'S ABILITY TO ACHIEVE SB 32 AND AB 1279, AND APPLICABLE LOCAL GHG REDUCTION PLAN TARGETS AND GOALS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

SB 32 and AB 1279

The SB 375 targets remain an important supporting component of CARB's 2017 Scoping Plan. However, the 2017 Scoping Plan has been superseded by the 2022 Scoping Plan, which establishes a framework for achieving the 2045 target codified by AB 1279. In addition, the 2017 Plan states, "Stronger SB 375 GHG reduction targets [adopted in 2018] will enable the State to make significant progress toward this goal, but alone will not provide all of the VMT growth reductions that will be needed. There is a gap between what SB 375 can provide and what is needed to meet the State's 2030 and 2050 goals" (CARB 2017). Therefore, consistency with the SB 375 target does not necessarily equate to consistency with SB 32 and the 2017 Scoping Plan. Accordingly, the SB 375 target does not equate to consistency with AB 1279 and the 2022 Scoping Plan.

This analysis conservatively assumes that to be consistent with State targets, the 2026 RTP/SCS would be required to achieve the same proportional GHG reductions as the State by the year 2045 (i.e., an 85 percent reduction in anthropogenic GHG emissions below 1990 levels), as well as achieving the interim 2030 target (i.e., a 40 percent reduction in GHG emissions below 1990 levels). As shown in Table 4.8-4 GHG emissions in 2030 would increase by two percent as compared to 1990 levels, which is not sufficient to achieve the 2030 target of a 40 percent reduction below 1990 levels. GHG emissions in 2045 would decrease by 9 percent as compared to 1990 levels, which is not sufficient to achieve the 2045 target of an 85 percent reduction below 1990 levels.

It should be noted that the regional 2030 and 2045 GHG emissions shown in Table 4.8-4 do not account for the TDM, TSM, zero emission vehicles and EV charging infrastructure, nor the telecommuting strategies, which would reduce the on-road transportation GHG emissions further. However, implementation of these strategies would not be enough to achieve the SB 32 or AB 1279 reduction targets. Therefore, although the projects, policies, and land use patterns identified in the 2026 RTP/SCS are designed to align transportation and land use planning to reduce transportation related GHG emissions, the 2026 RTP/SCS would conflict with the State's ability to achieve the SB 32 and AB 1279 GHG emissions reduction goals. As a result, impacts related to conflicts with SB 32 and AB 1279 would be significant.

Table 4.8-4 2030 and 2045 GHG Emissions Compared to 1990 Levels[3]

Scenario	CO_2e Emissions (MT/year)	% Difference in Emissions Compared to 1990 Baseline
1990 Baseline[1]	1,116,462	--
2030 with 2049 RTP/SCS	1,134,307	2%
2045 with 2049 RTP/SCS	1,013,163	(9%)

[1] 1990 Baseline from the 2022 RTP/SCS.

() denotes a negative value.

CO_2 = carbon dioxide; MT = metric ton

Source: Appendix F

2022 Scoping Plan

The proposed 2026 RTP/SCS would implement a suite of transportation improvement projects and facilitate a land use scenario that is consistent with the transportation and land use strategies of the 2022 Scoping Plan, which establishes a pathway to achieve carbon neutrality by 2045 through deep reductions in VMT, accelerated deployment of zero-emission technologies, and increased use of low-carbon mobility options. Consistent with the 2022 Scoping Plan, the land use scenario envisioned by the proposed 2026 RTP/SCS concentrates forecasted population and employment growth within already urbanized areas to support infill development, reduce automobile dependence, and limit growth in VMT. Active transportation projects would implement design policies that prioritize transit, biking, and walking throughout the StanCOG region, including but not limited to the cities of Ceres, Hughson, and Patterson. These projects would improve the safety, connectivity, and attractiveness of active transportation facilities through the addition of sidewalks, trails, bike lanes, crosswalks, intersection improvements, and signage. In addition, the proposed 2026 RTP/SCS includes transit projects designed to maintain, enhance, and expand public transit services provided by agencies in the StanCOG region, including Ceres Area Transit, Modesto Area Express, Stanislaus County and Bus Line Service of Turlock. Proposed projects include new transportation services, such as the addition of new bus rapid transit (BRT) and express routes, passenger rail expansion, and bus stop enhancements throughout the county. Collectively, these investments would expand access to low-carbon and zero-emission transportation options, reduce reliance on single-occupant vehicle travel, and support the 2022 Scoping Plan's strategies for transforming the transportation sector, including increased transit use, VMT reduction, and transition to zero-emission vehicles. Therefore, the 2026 RTP/SCS is consistent with the transportation strategies of the 2022 Scoping Plan.

As demonstrated in this analysis, the proposed plan would not reduce GHG emissions to achieve carbon neutrality or an 85 percent reduction in anthropogenic GHG emissions by 2045, or at a magnitude consistent with the SB 32 target and, therefore would not align with the emissions trajectory contemplated by the 2022 Scoping Plan for achieving the State's long-term statutory climate goals. Since the plan would not achieve an 85 percent reduction in GHG emissions from 1990 levels by 2045, the 2026 RTP/SCS would conflict with the State's ability to achieve the 2022 Scoping Plan's goals, resulting in a significant impact.

[3] CARB's EMFAC2021 off-model adjustment factors have been applied to remove the emissions benefits previously attributed to California's Advanced Clean Trucks, Heavy-Duty Omnibus, Warranty Phase 1, and Zero-Emission Airport Shuttle rules. Because these rules were expected to reduce truck and vehicle emissions over time, removing their benefits results in higher future-year regional emissions inventories than would have been reported under prior RTP analyses that relied on the unadjusted EMFAC2021 assumptions.

Local Climate Action Plans

Two of StanCOG's member jurisdictions (the cities of Hughson and Oakdale) have adopted CAPs that set goals and targets for the reduction of GHG emissions, and outline policies to help achieve those goals (City of Hughson 2013; City of Oakdale 2013).

The CAPs developed by the cities of Hughson and Oakdale had been adopted prior to enaction of SB 32, and thus present strategies intended to comply with the GHG emissions reduction goals recommended for local governments in the AB 32 Scoping Plan, which was aimed at reducing GHG emissions to 1990 levels by 2020 in accordance with AB 32. These CAPs are also intended to make progress toward the State's 2030 target of reducing GHG emissions by 40 percent below 1990 levels, as codified by SB 32 in 2017. As discussed previously, the proposed 2026 RTP/SCS was determined to be inconsistent with the SB 32 target. Therefore, it would also conflict with the goals of local CAPs designed to meet the same State goals, and impacts would be significant.

Conclusion

The proposed 2026 RTP/SCS would facilitate infill and transit oriented land use development as well as transit and alternative transportation projects, which would improve the transportation network in the StanCOG planning region and encourage the use of transportation modes other than passenger vehicles. Furthermore, by achieving its SB 375 target, the 2026 RTP/SCS contributes transportation-related GHG emission reductions towards meeting the State's GHG reduction target for 2030 under SB 32 and 2045 under AB 1279.

However, the expected GHG emissions in the StanCOG region in 2045 would not be consistent with the State's SB 32 target of 40 percent below 1990 levels by 2030, or with the State's AB 1279 GHG carbon neutrality reduction target and 85 percent reduction in anthropogenic GHG emissions for 2045. Therefore, the 2026 RTP/SCS would conflict with the state's ability to achieve SB 32 and AB 1279 GHG reduction targets. As such, this impact is potentially significant.

Mitigation Measures

For all transportation projects under their jurisdiction, implementing agencies shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the proposed 2026 RTP/SCS where applicable for transportation projects generating construction GHG emissions. The County of Stanislaus and cities in the StanCOG region can and should implement these measures where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

Implementation of Mitigation Measure GHG-2 would also reduce GHG emission from land use projects. Implementation of Mitigation Measure AQ-3(b) in Section 4.3, *Air Quality*, and Mitigation Measures T-2(a) and T-2(b) in Section 4.14, *Transportation*, would further reduce GHG emissions from the proposed 2026 RTP/SCS.

GHG-4(a) Transportation-Related GHG Reduction Measures

The implementing agency shall incorporate the most recent GHG reduction measures and/or technologies for reducing VMT and associated transportation related GHG emissions. GHG-reducing mitigation measures include the following:

- Installation of electric vehicle charging stations beyond those required by State and local codes

- Utilization of electric vehicles and/or alternatively fueled vehicles in company fleet
- Provision of dedicated parking for carpools, vanpool, and clean air vehicles
- Provision of vanpool and/or shuttle service for employees
- Implementation of reduced parking minimum requirements
- Implementation of maximum parking limits
- Provision of bicycle parking facilities beyond those required by State and local codes
- Provision of a bicycle-share program
- Expansion of bicycle routes/lanes along the project site frontage
- Provision of new or improved transit amenities (e.g., covered turnouts, bicycle racks, covered benches, signage, lighting) if project site is located along an existing transit route
- Expansion of existing transit routes
- Provision of transit subsidies
- Expansion of sidewalk infrastructure along the project site frontage
- Provision of safe, pedestrian-friendly, and interconnected sidewalks and streetscapes
- Provision of employee lockers and showers
- Provision of on-site services that reduce the need for off-site travel (e.g., childcare facilities, automatic teller machines, postal machines, food services)
- Provision of alternative work schedule options, such as telework or reduced schedule (e.g., 9/80 or 10/40 schedules), for employees
- Implementation of transportation demand management programs to educate and incentivize residents and/or employees to use transit, smart commute, and alternative transportation options

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. This mitigation measure shall, or can and should, be applied during permitting and environmental review, and implemented during operation where appropriate.

GHG-4(b) Land Use Project Energy Consumption and Water Use Reduction Measures

For land use projects under their jurisdiction, the cities and counties in the StanCOG region can and should implement measures to reduce energy consumption, water use, solid waste generation, and VMT, all of which contribute to GHG emissions. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

- Require new commercial construction to install solar energy systems or be solar-ready
- Require new residential and commercial development to install low flow water fixtures
- Require new residential and commercial development to install water-efficient drought-tolerant landscaping, including the use of compost and mulch
- Require new development to exceed the applicable Title 24 energy-efficiency requirements
- Encourage new development to be fully electric

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during project operation, as applicable.

Significance After Mitigation

If implementing agencies adopt and require the mitigation described above, impacts would be reduced because GHG emissions from transportation and land use projects would be reduced. However, implementation of project-level GHG-reducing measures cannot be guaranteed on a project-by-project basis. Additionally, it is speculative at this time to forecast whether project-level GHG emission reductions would be sufficient to achieve a region wide reduction in GHG emissions to achieve SB 32 and AB 1279 targets. Therefore, this impact would remain significant and unavoidable. No additional feasible mitigation measures are available that would reduce emissions to trajectories consistent with SB 32 and AB 1279 GHG reduction targets and goals.

4.8.4 Cumulative Impacts

The impacts of GHG emissions are, by definition, cumulative impacts, as they add to the global accumulation of greenhouse gases in the atmosphere. The cumulative impact analysis area for GHG emissions consists of the StanCOG region, adjoining counties, and the entire State of California. The entire state is included in the analysis area because GHG emissions from the StanCOG region and adjoining counties would influence the ability for the State to achieve its GHG reduction targets.

As discussed under Impact GHG-1, construction activities associated with transportation improvement projects and future land use projects implementing the proposed 2026 RTP/SCS would generate temporary GHG emissions. The temporary construction GHG emissions would occur concurrently with ongoing GHG emissions in the cumulative impact analysis area, such as GHG emissions ongoing agricultural activities in surrounding Valley counties such as San Joaquin County, and Merced County, resulting in a significant cumulative impact. As described under Impact GHG-1, construction-related GHG emissions associated with buildout under the proposed 2026 RTP/SCS would be significant even after implementation of Mitigation Measures GHG-1, AQ-2(b) and AQ-2(c). Therefore, the contribution of the proposed 2026 RTP/SCS construction emissions to the cumulative impact of total GHG emissions would be cumulatively considerable, pre- and post-mitigation.

As discussed under Impacts GHG-2 and GHG-4, the transportation projects and land use projects under the land use scenario implementing the proposed 2026 RTP/SCS would also generate operational GHG emissions. Overall, implementation of the proposed 2026 RTP/SCS would reduce total regionwide transportation-related emissions; however, land use emissions may increase compared to baseline conditions and contribute to significant cumulative GHG impacts. Implementation of Mitigation Measure GHG-2 would reduce GHG emissions from land use projects; however, impacts would remain significant and unavoidable. Therefore, the contribution of land use project emissions to the cumulative impact of total GHG emissions would be cumulatively considerable, pre- and post-mitigation.

As discussed under Impact GHG-3, the proposed 2026 RTP/SCS would not conflict with SB 375 because per capita emissions reductions would exceed the regional target of a 16 percent reduction by 2035 compared to 2005 levels, and therefore would not contribute to a significant cumulative impact related to conflict with SB 375. However, as discussed under Impact GHG-4 reductions

achieved by the proposed 2026 RTP/SCS would not be sufficient to achieve the 2030 target of a 40 percent reduction in overall emissions set forth by SB 32, and would also be inconsistent with AB 1279's carbon neutrality and 85 percent reduction in anthropogenic emissions 2045 targets. Other ongoing land uses and operation of future development in the cumulative impact analysis area would also generate GHG emissions likely exceeding SB 32 and AB 1279 targets, resulting in significant cumulative impacts. Implementation of Mitigation Measures AQ-3(b), GHG-2, GHG-4, T-2(a) and T-2(b) would reduce the proposed 2026 RTP/SCS impacts related to consistency with state GHG reduction targets; however, emissions would remain in exceedance of applicable significance thresholds. Therefore, the proposed 2026 RTP/SCS would have a cumulatively considerable contribution to the cumulative impact of inconsistency with state GHG reduction targets, both pre- and post- mitigation.

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4.9 Hazards and Hazardous Materials

This section analyzes impacts related to hazardous materials and airport safety hazards in the StanCOG region. Impacts related to exposure to excessive aviation related noise are discussed in detail in Section 4.12, *Noise*, impairment or interference of emergency response or evacuation plans are discussed in detail in Section 4.14, *Transportation*. Impacts related to wildfire are discussed in Section 4.16, *Wildfire*.

4.9.1 Setting

a. Physical Setting

Hazardous Materials and Waste

The term "hazardous material" is defined in the State of California's Health and Safety Code (HSC), Chapter 6.95, Section 25501(o) as:

> Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment,

Hazardous waste is hazardous material generated, intentionally or unintentionally, as a byproduct of some process or condition. Hazardous wastes are defined in California HSC Section 25141(b) as wastes that:

> …because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness [or] pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

According to the U.S. Environmental Protection Agency (USEPA) waste may be considered hazardous if it is specifically listed as known hazardous waste or if it meets the one or more of the following characteristics of a hazardous waste:

- **Toxicity**. Poisonous, harmful when ingested or absorbed.
- **Ignitability.** Capable of being ignited by open flame, liquids with flash points1 below 60 degrees Celsius.
- **Corrosivity.** Capable of corroding other materials, aqueous wastes with a pH of 2 or less or greater than or equal to 12.5.
- **Reactivity.** May be unstable under normal conditions, may react with water, may give off toxic gases or may be capable of detonation or explosion under normal conditions or when heated.

Generation and Disposal of Hazardous Materials and Waste

Many chemicals used in household cleaning, construction, light and heavy industry, dry cleaning, landscaping, and automotive maintenance and repair are considered to generate hazardous materials and waste. Additionally, in some cases, past industrial or commercial uses on a site may have resulted in spills or leaks of hazardous materials and petroleum that have caused contamination of the underlying soil and groundwater. Federal and state laws require that soils and groundwater having concentrations of contaminants that are higher than certain acceptable levels are handled and disposed as hazardous waste during excavation, transportation, and disposal. The California Code of Regulations (CCR), Title 22, Sections 66261.20-24 contains technical descriptions of characteristics that would cause a soil to be classified as a hazardous waste. Hazardous materials require special methods of disposal, storage, and treatment, and the release of hazardous materials requires an immediate response to protect human health and safety, and the environment. Improper disposal can harm the environment and people who work in the waste management industry.

Businesses that handle or generate hazardous materials in the StanCOG region are monitored by USEPA; the Stanislaus County Department of Environmental Resources; the Central Valley Regional Water Quality Control Board (RWQCB); the Stanislaus County Environmental Health Department (EHD); Local Enforcement Agency programs; and San Joaquin Valley Air Pollution Control District (SJVAPCD). Generators of hazardous waste fall into two categories: large-quantity generators (LQG) and small-quantity generators (SQG). An LQG is defined as a person or facility generating more than 2,200 pounds of hazardous waste per month. An SQG is defined as generating greater than 100 kilograms (kg) and less than 1,000 kg (2,200 pounds) of hazardous waste per month. LQGs include industrial and commercial facilities, such as manufacturing companies, petroleum refining facilities and other heavy industrial businesses.

LQGs must comply with federal and state requirements for managing hazardous waste. LQGs need an USEPA identification number that is used to monitor and track hazardous waste activities. SQGs include facilities such as service stations, automotive repair, dry cleaners, and medical offices. The regulatory requirements for SQGs are less stringent than the requirements for LQGs; however, SQGs must also obtain an U.S. USEPA identification number, which must be used for traceability on all hazardous waste documentation. Pursuant to federal law (40 CFR 262.41-43), all such generators must register with USEPA for record-keeping and reporting.

Transportation of Hazardous Materials and Waste

Hazardous materials, hazardous wastes, medical waste and petroleum products are a subset of the goods routinely shipped along the transportation corridors in the StanCOG region. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by the California Environmental Protection Agency (CalEPA) Department of Toxic Substances Control (DTSC). DTSC maintains a list of active registered hazardous waste transporters throughout California, and the California Department of Public Health regulates the haulers of hazardous waste. There are 23 active registered hazardous waste transporters in the StanCOG region (DTSC 2022a). Transportation of hazardous materials and wastes in the StanCOG region occurs through a variety of modes, such as, but not limited to: truck, rail, air, and pipeline, which are described further below.

Transportation of hazardous materials by truck is regulated by the DOT. The DOTs Federal Motor Carrier Safety Administration identifies several highways in the StanCOG region as a Hazardous Materials Route in its National Hazardous Materials Route Registry. The heaviest traveled highways and roads that have been identified as Hazardous Materials Routes include sections of State Highways 99, 108, 120, and 132, State Route 33, and Interstate 5 (DOT 2026). There are no county or city roads within the StanCOG region that are designated as Hazardous Materials Routes.

According to the USDOT Pipeline and Hazardous Materials Safety Administration and Office of Hazardous Materials Safety, hazardous materials traffic in the U.S. now exceeds 800,000 shipments per day and results in more than 3.1 billion tons of hazardous materials annually (FHWA 2021). Considering the primary use of roads compared to rail and pipelines in the StanCOG region, trucks are likely responsible for transporting most hazardous materials. According to the DOT, truck transport consistently accounts for the largest share of reportable incidents each year.

The transport of hazardous materials by rail is also regulated by DOT. Freight railroads have employee safety training requirements and operating procedures that govern the handling and movement of hazardous goods, including crude oil. Federal regulations and self-imposed safety practices dictate train speeds, equipment and infrastructure inspections, and procedures for how to handle and secure trains carrying hazardous materials. The freight rail industry provides instruction to local public safety officials at the Transportation Technology Center's Security and Emergency Response Training Center, a 52 square mile training facility where cargo trucks and freight trains are routinely used in large-scale hazardous response trainings. Individual railroads conduct additional local training for first responders. Freight railroads also work with State emergency planning committees and local first responders to develop municipal emergency response plans. In accordance with a February 2014 agreement between the DOT and Association of American Railroads (AAR), railroads have developed an inventory of emergency response resources and provided the DOT with information on the deployment of those resources. This information is available upon request to appropriate emergency responders. A list of the rail facilities in the StanCOG region is provided in Section 4.12, *Noise*.

Pipelines, primarily underground, are used to transport a variety of potentially hazardous substances, including natural gas, crude oil, and other petroleum products throughout the StanCOG region. For example, Pacific Gas & Electric maintains and operates a natural gas pipeline that is roughly parallel to Interstate 5 through most of the State, and Kinder Morgan operates several petroleum product pipelines parallel to State Route 99 in the central portion of the county, among others. Pipelines in the County run through both urban areas and agricultural areas, primarily along locally important roads with few exceptions. The majority of pipelines are either sections of larger lines or lie within the Modesto-Riverbank-Oakdale urban area (NPMS 2026). The American Petroleum Institute recommends setbacks of 50 feet from petroleum and hazardous liquids lines for new homes, businesses, and places of public assembly. It also recommends 25 feet for garden sheds, septic tanks, and water wells; and 10 feet for mailboxes and yard lights (Transportation Research Board 2004). The Transportation Research Board (2004) encourages the use of zoning regulations to minimize casualties in the event of a catastrophic pipeline rupture. Possible land use techniques include, for example, establishing setbacks; regulating or prohibiting certain types of structures and uses near transmission pipelines; and encouraging, through site and community planning, other types of activities and facilities, such as mini-storage businesses, linear parks and recreational paths, within or in the vicinity of pipeline rights-of-way.

There are no major shipping ports or marine oil terminals in the StanCOG region, and transport by ship on the open sea or rivers is generally not a mode for hazardous materials or waste transport in the region. However, the StanCOG region does contain marinas, boat storage facilities and other similar boat-based service businesses where petroleum products, paints, cleaning solvents and other substances used in the daily operation and maintenance of boats may be stored and handled.

Potential for Hazardous Materials and Hazardous Materials Sites

Many activities in the StanCOG region involve the use of hazardous materials. The use of hazardous materials is commonplace in commercial, industrial, and manufacturing activities, and many businesses within the StanCOG region are permitted to handle and transport hazardous materials. There are historic and existing land uses that have generated hazardous waste as part of daily business operations. LQGs and SQGs include such commercial uses as painters, dry cleaners and photographers, and industrial uses such as automotive service stations, sheet metal works, metal scrap yards, truck yards, cement and lime warehouses, coal yards, battery manufacture and Pacific Gas & Electric substations. In addition, older structures may contain building materials that are considered hazardous, such as asbestos and lead-based paint. In general, these historic and current uses and building materials are located throughout the StanCOG region.

California Government Code Section 65962.5 requires the California Environmental Protection Agency (CalEPA) to prepare an annual Hazardous Waste and Substances List, commonly referred to as the Cortese List. The addition or inclusion of a site on the Cortese List has bearing on the local permitting process and compliance with CEQA. For example, projects proposed at a site on the Cortese List are not eligible for categorical exemptions to CEQA per Section 15300.2(e) of the *CEQA Guidelines*. The Cortese List is not maintained as a centralized list, however, and a variety of governmental data sources identify sites where hazardous substances may have been released or may have created a hazardous condition on-site. These include:

- DTSC Active Transporter County Search Report (2026a);
- DTSC EnviroStor database (DTSC 2026b) (Cortese List) for tracking hazardous waste facilities and site with known contamination or sites where there may be reasons to investigate further;
- State Water Resources Control Board's (SWRCB) GeoTracker database (SWRCB 2026) of records for sites that require cleanup, such as leaking underground storage tank (UST) sites, Department of Defense sites, landfill sites and Cleanup Program sites;
- The DOT's Hazardous Materials Incident Report System database (DOT 2026), which is maintained by the U.S. USEPA and contains data on hazardous material spill incidents;
- California Department of Resources Recycling and Recovery's (CalRecycle) Solid Waste Inventory System database (CalRecycle 2026) of active and closed solid waste sites;
- The USEPA Envirofacts database (USEPA 2026) of Resource Conservation and Recovery Act (RCRA) sites, as well as other hazardous sites, such as superfund and brownfield sites; and
- The USACE list of Formerly Used Defense Sites for California (USACE 2011).

All the databases listed above have identified sites within the StanCOG region. Nine sites in the StanCOG region are identified on the USACE list of Formerly Used Defense Sites for California (USACE 2026). According to CalRecycle's Solid Waste Inventory System database, there is one active landfill (Fink Road Landfill), 31 other recycling, transfer, and compost sites, and an additional 21 sites that are closed or inactive. None are currently on the list of sites that are violating minimum

standards, 26 are operating without permits or are under notification of permit expiration (CalRecycle 2026).

For some databases, such as the DTSC's EnviroStor database and the U.S. USEPA Envirofacts database, the list of identified sites is too exhaustive to provide in its entirety for purposes of this EIR because it is not necessary for programmatic impact analysis. For example, the EnviroStor identifies hundreds of sites in the StanCOG region, including closed sites that have been fully remediated; sites where contamination is contained but land use restrictions are in place; and sites under evaluation, active remediation, and monitoring. Among these sites are superfund sites, state response hazardous sites, contaminated soil sites, and school cleanup sites and leaking UST sites. The USEPA Envirofacts database also identifies hundreds of RCRA sites in the region, including some that are also listed in the EnviroStor database. Examples of some of the RCRA sites identified in the region include gas stations, dry cleaners, automotive repair shops, pharmacies, automobile dealerships, paint stores, trucking companies, agricultural operations, and heavy industrial sites (USEPA 2026). The SWRCB GeoTracker database also identifies many leaking UST sites, some have been which remediated and cleaned, and some of which have yet to be cleaned. For purposes of this EIR, it is more important to note that many sites on the Cortese list exist throughout the StanCOG region, typically within proximity to the transportation network and more densely populated areas in the region.

To address the potential for documented and undocumented hazards on a site, the American Society for Testing and Materials has developed widely accepted practice standards for the preliminary evaluation of site hazards (E-1527-13) (ASTM 2021). Phase I Environmental Site Assessments (ESAs) include an on-site visit to determine current conditions; an evaluation of possible risks posed by neighboring properties; interviews with persons knowledgeable about the site's history; an examination of local planning files to check prior land uses and permits granted; file searches with appropriate agencies having oversight authority relative to water quality and/or soil contamination; examination of historic aerial photography of the site and adjacent properties; a review of current topographic maps to determine drainage patterns; and an examination of chain-of-title for environmental lines and/or activity and land use limitations. If a Phase I ESA indicates the presence, or potential presence of contamination, a site-specific Phase II ESA is generally conducted to test soil and/or groundwater. Based on the outcome of a Phase II ESA, remediation of contaminated sites under federal and state regulations may be required prior to development. Phase I ESAs can also be used to identify the potential for presence of hazardous building materials in situations where older structures intended for demolition could contain lead-based paint, asbestos containing materials, mercury, or polychlorinated biphenyls.

Naturally Occurring Asbestos

Asbestos is not a formal mineralogical term, but rather a commercial and industrial term historically applied to a group of silica-containing minerals that form long, very thin mineral fibers (termed amphiboles), which generally form in bundles, that were once widely used in commercial products. Naturally occurring asbestos includes minerals in their natural state, such as in bedrock or soils. Naturally occurring asbestos, which was identified as a toxic air contaminant by CARB in 1986, is of concern due to potential exposures to the tiny fibers that can become airborne if asbestos-bearing rocks are disturbed by natural erosion or human activities, such as road building, excavations, and other ground-disturbing activities. Once disturbed, microscopic fibers can become lodged in the lungs, which can potentially lead to serious health problems. The StanCOG region contains ultramafic rocks, such as serpentinite, which can contain asbestos fibers. Naturally occurring

asbestos sites are most concentrated in the western area of the County (USGS 2011). In general, naturally occurring asbestos fibers do not pose a threat unless disturbed and introduced into the air as fugitive dust.

Schools

Children are particularly susceptible to long-term effects from emissions of hazardous materials. Therefore, locations where children spend extended periods of time, such as schools, are particularly sensitive to hazardous air emissions and accidental release associated with the handling of extremely hazardous materials, substances, or wastes. The Stanislaus County Office of Education (SCOE) oversees 25 school districts, compromised of 16 elementary school districts and nine unified districts. There are approximately 107,200 students enrolled in SCOE districts, and school districts range from small to large.

Airports

Potential hazards in relationship to airport operations are generally regulated by the Federal Aviation Administration (FAA), with local planning and evaluation of proposed projects (in terms of a proposed project's compatibility in relationship to air and ground operations and the safety of the public) under the authority of the applicable airport land use commission (ALUC) through an airport land use compatibility plan (ALUCP). The ALUC with authority in the StanCOG region is the Stanislaus County Airport Land Use Commission and the applicable ALUCP in the StanCOG region is discussed in Section 4.10.2 below. There are five airports in the StanCOG region: Modesto City-County Airport (Harry Sham Field); Oakdale Municipal Airport; Turlock Airpark; Crows Landing Air Facility; and Patterson Airport. Two of the airports are publicly owned and open to public use, the Modesto City-County Airport and the Oakdale Municipal Airport, while other airports are privately owned. Heliports exist at major area hospitals in Modesto, Oak Valley, and Turlock and there are two small private heliports used for crop dusting. A further description of aviation facilities is provided in Section 4.12, *Noise*.

4.9.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

USEPA is the lead agency responsible for enforcing federal regulations that affect public health or the environment. The primary federal laws and regulations include the RCRA of 1976 and the Hazardous and Solid Waste Amendments enacted in 1984; the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA); and the Superfund Act and Reauthorization Act of 1986 (SARA). Federal statutes pertaining to hazardous materials and wastes are contained in the CFR Title 40 - Protection of the Environment.

Toxic Substances Control Act

The Toxic Substances Control Act of 1976 (15 U.S. Code Section 2601 et seq.) grants USEPA the authority to develop reporting, record-keeping, and testing requirements for, as well as restrictions on, the manufacture, use, and sale of chemical substances. Pursuant to Title II of the Toxic Substances Control Act, the USEPA adopted the Asbestos Model Accreditation Plan in 1994. The Model Accreditation Plan requires that all persons who inspect for asbestos-containing materials or design or conduct response actions with respect to friable asbestos obtain accreditation by

completing a prescribed training course and passing an exam. Section 403 of the Toxic Substances Act establishes standards for lead-based paint hazards in paint, dust, and soil.

Resource Conservation and Recovery Act

RCRA Subtitle C regulates the generation, transportation, treatment, storage and disposal of hazardous waste by LQGs (1,000 kilograms per month or more) through comprehensive life cycle or "cradle to grave" tracking requirements. The requirements include maintaining inspection logs of hazardous waste storage locations, records of quantities being generated and stored, and manifests of pick-ups and deliveries to licensed treatment/storage/disposal facilities. RCRA also identifies standards for treatment, storage, and disposal, which is codified in 40 CFR 260.

Comprehensive Environmental Response Compensation and Liability Act

Congress enacted CERCLA, setting up what has become known as the Superfund program, in 1980 to establish prohibitions and requirements concerning closed and abandoned hazardous waste sites; provide for liability of persons responsible for releases of hazardous waste at these sites; and establish a trust fund to provide for cleanup when no responsible party can be identified. Generally, CERCLA authorizes two kinds of response actions:

- Short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response.
- Long-term remedial response actions that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening.

Superfund Amendments and Reauthorization Act

SARA amended the CERCLA in 1986, emphasizing the importance of permanent remedies and innovative treatment technologies to clean up hazardous waste sites; requiring Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations; providing new enforcement authorities and settlement tools; increasing involvement of the states in every phase of the Superfund program; increasing the focus on human health problems posed by hazardous waste sites; encouraging greater citizen participation in making decisions on how sites should be cleaned up; and increasing the size of the trust fund to $8.5 billion.

Hazardous Materials Transportation Act

The transportation of hazardous materials is regulated by the Hazardous Materials Transportation Act (49 CFR Section 101 et seq.), which is administered by the Research and Special Programs Administration of U.S. DOT. The Hazardous Materials Transportation Act governs the safe transportation of hazardous materials by all modes. The DOT regulations that govern the transportation of hazardous materials are applicable to any person who transports, ships, causes to be transported or shipped, or who is involved in any way with the manufacture or testing of hazardous materials packaging or containers. The DOT regulations govern every aspect of the movement, including packaging, handling, labeling, marking, placarding, operational standards, and highway routing.

Emergency Planning Community Right-to-Know Act

The Emergency Planning Community Right-to-Know Act, or the SARA Title III, was enacted in October 1986. SARA Title III requires any infrastructure at the State and local levels to plan for chemical emergencies, including identifying potential chemical threats. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. Emergency Planning Community Right-to-Know Act Sections 301–312 are administered by USEPA's Office of Emergency Management. USEPA's Office of Information Analysis and Access implements the act's Section 313 program. In California, SARA Title III is implemented through the California Accidental Release Prevention Program (CalARP).

Federal Disaster Mitigation Act

The Disaster Mitigation Act of 2000 provided a new set of mitigation plan requirements that encourage state and local jurisdictions to coordinate disaster mitigation planning and implementation. States are encouraged to complete a "Standard" or an "Enhanced" Natural Mitigation Plan. "Enhanced" plans demonstrate increased coordination of mitigation activities at the state level and, if completed and approved, increase the amount of funding through the Hazard Mitigation Grant Program.

Code of Federal Regulations, Title 14, Part 77

The primary role of the Federal Aviation Administration (FAA) is to promote aviation safety and control the use of airspace. Public use airports that are subject to the FAA's grant assurances must comply with specific FAA design criteria, standards, and regulations. Land use safety compatibility guidance from the FAA is limited to the immediate vicinity of the runway, the runway protection zones at each end of the runway, and the protection of navigable airspace. 14 CFR 77, Safe Efficient Use and Preservation of the Navigable Airspace, establishes the federal review process for determining whether proposed development activities in the vicinity of an airport have the potential to result in a hazard to air navigation. 14 CFR Part 77 identifies standards for determining whether a proposed project would represent an obstruction "that may affect safe and efficient use of navigable airspace and the operation of planned or existing air navigation and communication facilities." Objects that are identified as obstructions based on these standards are presumed to be hazards until an aeronautical study conducted by the FAA determines otherwise.

b. State Laws, Regulations, and Policies

California Asbestos Regulations

In 1990, CARB issued an Airborne Toxic Control Measure, which prohibited the use of serpentine aggregate for surfacing if the asbestos content was 5 percent or more. In July 2000, CARB adopted amendments to the existing Airborne Toxic Control Measure prohibiting the use or application of serpentine, serpentine-bearing materials, and asbestos-containing ultramafic rock for covering unpaved surfaces unless it has been tested using an approved asbestos bulk test method and determined to have an asbestos content that is less than 0.25 percent. In July 2001, CARB adopted a new Airborne Toxic Control Measure for construction, grading, quarrying, and surface mining operations in areas with serpentine or ultramafic rocks. These regulations are codified in Title 17, Section 93105 of the CCR. The regulations require preparation and implementation of an Asbestos Dust Mitigation Plan for construction or grading activities on sites greater than 1 acre in size with known NOA soils. The air districts enforce this regulation. In October 2000, the Governor's Office of

Planning and Research issued a memorandum providing guidance to lead agencies in analyzing the impacts of NOA on the environment through the CEQA review process. In November 2000, the California Department of Real Estate added a section to subdivision forms that includes questions related to NOA on property proposed for development. In 2004, as part of its school-site review program, DTSC's School Property Evaluation and Cleanup Division released interim guidance on evaluating NOA at school sites. In addition, California Health and Safety Code Section 19827.5 prohibits issuance of demolition permits by local and State agencies without assessment of the potential for the structure to contain asbestos.

Title 8, California Code of Regulations

The California Division of Occupational Safety and Health Administration lead standard for construction activities is implemented under Title 8 of the CCR. The standard applies to any construction activity that may release lead dust or fumes, including, but not limited to, manual scraping, manual sanding, heat gun applications, power tool cleaning, rivet busting, abrasive blasting, welding, cutting, or torch burning of lead-based coatings. Unless otherwise determined by approved testing methods, all paints and other surface coatings are assumed to contain lead at prescribed concentrations, depending on the application date of the paint or coating.

California Accidental Release Prevention Program

The CalARP Program addresses facilities that contain specified hazardous materials, known as "regulated substances," that, if involved in an accidental release, could result in adverse off-site consequences. The CalARP Program defines regulated substances as chemicals that pose a threat to public health and safety or the environment because they are highly toxic, flammable, or explosive.

California Unified Program Administration

The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections and enforcement activities of six environmental and emergency response programs, as listed below:

- Hazardous Materials Release Response Plans and Inventories (Business Plans);
- CalARP Program;
- Underground Storage Tank Program;
- Aboveground Petroleum Storage Act Program;
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs; and
- California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements

The state agency partners involved in the Unified Program have the responsibility of setting program element standards, working with CalEPA on ensuring program consistency and providing technical assistance to the Certified Unified Program Agencies. The following state agencies are involved with the Unified Program:

- CalEPA is directly responsible for coordinating the administration of the Unified Program. The Secretary of the CalEPA certifies Certified Unified Program Agencies
- DTSC provides technical assistance and evaluation for the hazardous waste generator program including onsite treatment (tiered permitting)

- OES is responsible for providing technical assistance and evaluation of the Hazardous Material Release Response Plan (Business Plan) Program and the CalARP Programs
- The Office of the State Fire Marshal is responsible for ensuring the implementation of the Hazardous Material Management Plans and the Hazardous Material Inventory Statement Programs. These programs tie in closely with the Business Plan Program
- SWRCB provides technical assistance and evaluation for the UST program in addition to handling the oversight and enforcement for the aboveground storage tank program

The Certified Unified Program Agency (CUPA) for the SJCOG region is the San Joaquin County EHD. The EHD is responsible for implementing the federal and state laws and regulations pertaining to the handling of hazardous wastes and hazardous materials.

California Land Environmental Restoration and Reuse Act

The California Land Environmental Restoration and Reuse Act of 2001 established California Human Health Screening Levels (CHHSLs) as a tool to assist in the evaluation of contaminated sites for potential adverse threats to human health. The CHHSLs were developed by the Office of Environmental Health Hazard Assessment, an agency under the umbrella of CalEPA. The thresholds of concern used to develop the CHHSLs are an excess lifetime cancer risk of one in 1 million and a hazard quotient of 1.0 for non-cancer health effects. The CHHSLs were developed using standard exposure assumptions and chemical toxicity values published by USEPA and CalEPA. The CHHSLs can be used to screen sites for potential human health concerns where releases of hazardous chemicals to soils have occurred. Under most circumstances, the presence of a chemical in soil, soil gas, or indoor air at concentrations below the corresponding CHHSLs can be assumed to not pose a significant health risk to people who may live (residential CHHSLs) or work (commercial/ industrial CHHSLs) at the site.

California Multi-Hazard Mitigation Plan

The State Hazard Mitigation Plan represents the state's primary hazard mitigation guidance document - providing an updated analysis of the state's historical and current hazards, hazard mitigation goals and objectives, and hazard mitigation strategies and actions. The plan represents the state's overall commitment to supporting a comprehensive mitigation strategy to reduce or eliminate potential risks and impacts of disasters in order to promote faster recovery after disasters and, overall, a more resilient state. State Hazard Mitigation Plans are required to meet the Elements outlined in the Federal Emergency Management Agency's State Mitigation Plan Review Guide (revised March 2015, effective March 2016).

OES is responsible for the development and maintenance of the State's plan for hazard mitigation. The State's multi-hazard mitigation plan was last approved by the Federal Emergency Management Agency as an Enhanced State Mitigation Plan in 2018. The plan is designed to reduce the effects of disasters caused by natural, technological, accidental, and adversarial/human-caused hazards. The State Hazard Mitigation Plan sets the mitigation priorities, strategies, and actions for the state. The plan also describes how risk assessment and mitigation strategy information is coordinated and linked from local mitigation plans into the State Hazard Mitigation Plan and provides a resource for local planners of risk information that may affect their planning area. The State of California is required to review and revise its mitigation plan and resubmit for Federal Emergency Management Agency approval at least every five years to ensure continued funding eligibility for certain federal grant programs.

California Public Resources Code 21151.4

Pursuant to Public Resources Code Section 21151.4, projects that can be reasonably anticipated to produce hazardous air emissions or handle extremely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school must consult with the potentially affected school district and provide written notification not less than 30 days prior to the proposed certification or adoption of an environmental document. Where a school district proposes property acquisition or the construction of a school, the environmental document must address existing environmental hazards, and written findings must be prepared regarding existing pollutant sources.

California Education Code

Sections 17071.13, 17072.13, 17210, 17210.1, 17213.1-3 and 17268 of the California Education Code became effective January 1, 2000. Together, they establish requirements for assessments and approvals regarding toxic and hazardous materials that school districts must follow before receiving final site approval from the DOE and funds under the School Facilities Program. These requirements are consistent with those described above for certification or adoption of an environmental document under Public Resources Code Section 21151.4. California Education Code Section 17213(b) establishes requirements for assessments and approvals that address the potential for existing contamination on the site, and whether nearby land uses might reasonably be anticipated to emit hazardous air emissions or handle hazardous materials. Assessment of existing contamination is conducted in coordination with DTSC's School Property Evaluation and Cleanup Division, which is responsible for assessing, investigating, and cleaning up proposed school sites. This Division ensures that selected properties are free of contamination or, if the properties were previously contaminated, that they have been cleaned up to a level that protects the students and staff who will occupy a new school.

Carpenter-Presley-Tanner Hazardous Substances Account Act

The Carpenter-Presley-Tanner Hazardous Substance Account Act imposes liability for hazardous substances removal or remedial actions and requires the State Attorney General to recover from the liable person, as defined, certain costs incurred by the DTSC or any of the state's nine RWCQBs, upon the request of the DTSC or Regional Water Quality Control Board. The act authorizes, except as specified, a party found liable for any costs or expenditures recoverable under the act for those actions to establish, as specified, that only a portion of those costs or expenditures are attributable to the party, and requires the party to pay only for that portion. If each party does not establish its liability, the act requires a court to apportion those costs or expenditures, as specified, among the defendants and the remaining portion of the judgment is required to be paid from the Toxic Substances Control Account. Existing law authorizes the money deposited in the Toxic Substances Control Account in the General Fund to be appropriated to the DTSC for specified purposes, including the payment of the costs incurred by the state for those actions.

Lempert-Keene-Seastrand Oil Spill Prevention and Response Act

The Lempert-Keene-Seastrand Oil Spill Prevention and Response Act of 1990 granted the Office of Spill Prevention and Response the authority to direct prevention, removal, abatement, response, containment, and cleanup efforts regarding all aspects of any oil spill in marine waters of California. The Office of Spill Prevention and Response implements the California Oil Spill Contingency Plan, consistent with the National Contingency Plan, which pays special attention to marine oil spills and impacts to environmentally- and ecologically sensitive areas. In 2014, the Office of Spill Prevention

and Response program was expanded to cover all statewide surface waters at risk of oil spills from any source, including pipelines and the increasing shipments of oil transported by railroads.

Local Community Rail Security Act

The Local Community Rail Security Act of 2006 (Public Utilities Code Sections 7665-7667) requires all rail operators to provide security risk assessments to California Public Utilities Commission, the Director of Homeland Security and the Catastrophic Event Memorandum Account that describe the following:

- Location and function of each rail facility;
- Types of cargo stored at or typically moved through the facility;
- Hazardous cargo stored at or moved through the facility;
- Frequency of hazardous movements or storage;
- Description of sabotage-terrorism countermeasures;
- Employee training programs;
- Emergency response procedures; and
- Emergency response communication protocols

c. Local Laws, Regulations, and Policies

San Joaquin Valley Air Pollution Control District

The SJVAPCD attains and maintains air quality conditions in the San Joaquin Valley Air Basin, which comprises the San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and western Kern County counties. SJVAPCD is responsible for air monitoring, permitting, enforcement, long-range air quality planning, regulatory development, education, and public information activities related to air pollution, as required by the Clean Air Act and California Clean Air Act. Projects in the San Joaquin Valley Air Basin are subject to SJVAPCD's rules and regulations, including rules pertaining to asbestos and toxic air contaminants. SJVAPCD Rule 4002, National Emission Standards for Hazardous Air Pollutants, sets emissions standards for stationary source emissions, including asbestos emission from building demolition.

Stanislaus County Hazardous Materials Disclosure Program

The Stanislaus County Hazardous Materials Disclosure Program is designed to identify, track, and regulate the use, storage, and disposal of hazardous materials to protect public health, safety, and the environment. The program requires businesses that handle hazardous materials above specified thresholds to prepare and maintain a Hazardous Materials Business Plan, which includes information on material inventories, site conditions, and emergency response procedures (Stanislaus County 2020)

Stanislaus County General Plan

The Stanislaus County General Plan Safety Element (Chapter 5) includes goals to minimize the impacts of man-made or natural disasters, hazardous materials, or other safety concerns. Relevant goals to the proposed 2026 RTP/SCS include the following (Stanislaus County 2015):

Goal 2: Minimize the effects of hazardous conditions that might cause loss of life and property.

City of Ceres General Plan

The City of Ceres's Health and Safety Element of the General Plan identifies the natural and human-caused hazards affecting the community and establishes policies to protect public health, safety, and quality of life. The Element addresses a wide range of issues including environmental justice, climate change, seismic and geologic hazards, flooding, hazardous materials, fire hazards, noise, and emergency management. It emphasizes both preventative planning and coordinated emergency response to minimize risks to people, property, and environmental resources. Policies relevant to the proposed 2026 RTP/SCS EIR include the following (City of Ceres 2018):

Policy 5.1.1. Hazardous Materials Standards. Ensure that the use and disposal of hazardous materials in the city comply with local, State, and federal safety standards. Ensure that industrial facilities are constructed and operated in accordance with current safety and environmental protection standards and best practices.

Policy 5.1.4. Hazardous Materials Projects. Review all proposed development projects that would manufacture, use, or transport hazardous materials to ensure compliance with the County's Hazardous Materials Disclosure Program.

Policy 5.1.9. Hazardous Use Siting. Review development proposals for uses involving hazardous materials storage, maintenance, use, and disposal to ensure that the proposed development would not pose significant safety risks to sensitive uses (such as schools, hospitals, nursing homes, and residences).

Policy 5.1.10. Coordinated Emergency Response. Work with other agencies, including the City of Modesto and Stanislaus County, to ensure an adequate countywide response capability for hazardous materials emergencies. Provide for safe and efficient hazardous waste emergency response and contaminated site cleanup.

City of Modesto General Plan

The City of Modesto's Community Facilities and Services Element of the General Plan includes goals that aim to improve public safety and provision of City services. Relevant goals to the proposed 2026 RTP/SCS include the following (City of Modesto 2019):

Goal VI.K: Provide responsive fire and life safety protection to the community through control of hostile fire, fire prevention, emergency medical services, emergency preparedness, and mitigation of hazardous materials incidents.

City of Turlock General Plan

The City of Turlock's Safety Element of the General Plan identifies the natural and manmade hazards that exist within the city and seeks to mitigate their potential impacts through both preventative and response measures. Relevant goals to the proposed 2026 RTP/SCS EIR include the following (City of Turlock 2012):

Guiding Policy 10.1-a: Protect Lives and Property. Prevent loss of lives, injury, illness, and property damage due to hazardous materials and wastes.

Guiding Policy 10.1-b: Protect Natural Resources. Protect soils, surface water, and groundwater from contamination from hazardous materials.

Guiding Policy 10.1-c: Coordinate Efforts to Minimize Risks. Cooperate with State agencies and the Stanislaus County Environmental Resources Department efforts to identify hazardous materials users, implement hazardous materials plans, provide safe waste disposal sites, and minimize risks associated with hazardous cargoes, agricultural spraying, and electromagnetic fields.

Guiding Policy 10.1-d: Incorporate Safety Considerations Into Land Use Policies. Coordinate land use policies with concerns about potential hazards.

Guiding Policy 10.4-a: Protect from Hazards. Continue to protect people and property from natural and manmade hazards.

Other City General Plans

Local planning policies related to hazards and hazardous materials are established in each jurisdiction's general plan, generally in the Safety Element or equivalent chapter. Safety Elements are required to address geologic hazards, fire hazards, dam failure, evacuation routes, flooding, and emergency response among other issues. For emergency services, some of the relevant policies may include coordinating with other agencies that are responsible for planning medical facilities to meet the health care needs of residents in the region, retaining hospitals, evaluating medical facility proposals, providing emergency response services, and participating in mutual-aid agreements. Incorporated cities within the County each have a General Plan which includes a Safety Element or equivalent chapter. For projects within the municipal area of these cities these Plans would supersede the elements of the County General Plan. Outlined below are the goals for Stanislaus County and major cities within the StanCOG region as representative of local planning regarding hazards.

Local Hazard Mitigation Plans

Local jurisdictions develop, adopt, and update hazard mitigation plans to establish guiding principles for reducing hazard risk, as well as specific mitigation actions to eliminate or reduce identified vulnerabilities. Stanislaus County OES's Local Hazard Mitigation Plan (LHPM) was last updated in July 2022. The LHPM recognized earthquakes, floods, dam inundations, landslides and wildfire as the local natural hazards. The LHMP also states mitigation strategies and actions that serve as the long-term blueprint for reducing potential losses. Activities such as issuing building permits, repairing roads and training first responders are examples of specific actions which can be taken to prevent or minimize damage. Such activities have been identified for each hazard in the LHMP (Stanislaus County OES 2022).

Airport Land Use Compatibility Plan

There are three public-use airports included in the Stanislaus County ALUCP: Modesto City-County Airport, Oakdale Municipal Airport, and Crows Landing Airport (Stanislaus County 2018). The ALUCP establishes areas of influence within which airport operations are likely to affect land uses or land uses could affect airport operations. The goals of the ALUCP are to protect residents from the negative environmental noise, safety and traffic impacts that can potentially be induced by airports. Safety and noise criteria are identified in the ALUCP so that land use conflicts with airport operations are minimized. Prior to amending a general plan, a local agency must refer the proposed action to the ALUC (Pub. Util. Code Sec. 21676, et seq.) County and city general plans must be consistent with the ALUCP (Government Code Section 65302.2).

4.9.3 Impact Analysis

a. Methodology and Significance Thresholds

The methodology used for the following evaluation is based on a review of documents and publicly available information about hazardous and potentially hazardous conditions in the StanCOG region to determine the potential for implementation of the proposed to result in an increased health or safety hazard to people or the environment. This includes city and county planning documents, and hazardous materials database information maintained by various State and federal agencies, such as DTSC and SWRCB. Due to the large area of the StanCOG region and the programmatic nature of impact analyses, known sites of current or former contamination were not evaluated in detail, and physical surveys were not conducted. Rather, this program-level analysis is based on hazards typically associated with certain transportation projects and land use projects, and an overall understanding of the key safety concerns that could result from implementation of the proposed 2026 RTP/SCS.

The evaluation of hazards and hazardous materials impacts reasonably assumes that the construction and development under the proposed 2026 RTP/SCS would adhere to the latest federal, State, and local regulations, and conform to the latest required standards in the industry, as appropriate for individual projects.

Appendix G of the *CEQA Guidelines* identifies criteria for determining whether a project's impacts would have a significant impact to hazards and hazardous materials:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
2. 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;
3. Emit hazardous emissions or handles hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school;
4. Be located on a site which is included on a list of hazardous materials compiled by the Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
5. 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, result in a safety hazard or excessive noise for people residing or working in the project area;
6. Impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan; and/or
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Impacts related to impairment or interference of emergency response or evacuation plans (Threshold 6) are discussed in detail in Section 4.14, *Transportation*, under Impact TRA-4. Impacts related to exposure to wildland fires (Threshold 7), are discussed in detail Section 4.16, *Wildfire*, under Impact W-1.

b. Project Impacts and Mitigation Measures

The following section discusses potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2026 RTP/SCS. Due to the programmatic nature of the proposed 2026 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the proposed 2026 RTP/SCS could result in the impacts as described in the following section.

Threshold 1:	Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
Threshold 2:	Would the project 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?

Impact HAZ-1 TRANSPORTATION IMPROVEMENT PROJECTS AND LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2026 RTP/SCS MAY FACILITATE THE ROUTINE TRANSPORT, USE, OR DISPOSAL OF HAZARDOUS MATERIAL, AND MAY RESULT IN REASONABLY FORESEEABLE UPSET AND ACCIDENT CONDITIONS INVOLVING THE RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Land use and transportation projects associated with implementation of the 2022 RTP/SCS would temporarily increase the regional transport, use, storage and disposal of hazardous materials and petroleum products commonly used at construction sites, such as diesel fuel, lubricants, paints and solvents and asphalt and cement products containing strong basic or acidic chemicals. Hazardous waste generated during construction may consist of welding materials, fuel and lubricant containers, paint and solvent containers and discarded asphalt and cement products.

Construction associated with implementation of the proposed 2026 RTP/SCS could result in impacts related to use of hazardous materials and disturbance of potentially hazardous materials, including asbestos. However, the most likely incidents involving construction-related hazardous materials are generally associated with minor spills or drips. Small fuel or oil spills are possible but would have a negligible impact on public health. All hazardous materials would be stored, handled, and disposed of according to the manufacturers' recommendations and spills would be cleaned up in accordance with applicable regulations. Hazardous materials spills or releases, including petroleum products such as gasoline, diesel, and hydraulic fluid, regardless of quantity spilled, must be immediately reported if the spill has entered or threatens to enter a water of the State, including a stream, lake, wetland, or storm drain, or has caused injury to a person or threatens injury to public health. Immediate notification must be made to the local emergency response agency, or 911, and the OES Warning Center. For non-petroleum products, additional reporting may be required if the release exceeds federal reportable quantity thresholds over a release period of 24 hours as detailed in HSC Section 25359.4 and in 40 CFR 302.4.

DOT has identified several highways within the StanCOG region as hazardous material routes (DOT 2022). Additionally, trucks transporting hazardous material would also have to use local collector and arterial streets to access individual project sites in the StanCOG region. Transportation projects would also require the temporary storage and use of hazardous materials at locations along project roads. Thus, trucks transporting hazardous materials for project construction would use many of the same freeways, arterials, and local streets as other traffic. This would create a risk of accidents and

associated release of hazardous materials for other drivers and for people along these routes, as well as truck drivers. Although the transportation of hazardous materials could result in accidental spills, leaks, toxic releases, fire, or explosion, the DOT prescribes strict regulations for the safe transportation of hazardous materials, as described in Title 49 of the CFR and the Hazardous Materials Transportation Act. These standard accident and hazardous materials recovery training and procedures are enforced by the state and followed by private state-licensed, certified, and bonded transportation companies and contractors.

The construction of some land use and transportation projects included in the proposed 2026 RTP/SCS that require demolition of existing structures, particularly older structures, would have the potential to expose workers and the public to asbestos containing materials or dust containing asbestos. Construction could also occur in areas of naturally occurring asbestos, which could expose construction workers to asbestos. HSC Section 19827.5 requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. Mandatory compliance with asbestos abatement and disposal regulations and requirements, including SJVAPCD Rule 7050, would minimize the risk of exposure.

Land use projects facilitated by the proposed 2026 RTP/SCS would increase population, jobs, and households and a variety of land uses including residential, commercial, and industrial. Specific uses such as dry cleaners, gas stations, and certain industrial uses would involve routine transport, use, and disposal of hazardous materials such as household hazardous wastes (e.g., paints, cleaning supplies, solvents, and petroleum products) and commercial and industrial hazardous waste. The operation of businesses facilitated by land use projects included in the proposed 2026 RTP/SCS that use, create, or dispose of hazardous materials would be regulated and monitored by federal, state, and local regulations that provide a high level of protection to the public and the environment from the hazardous materials manufactured within, transported to, and disposed within the StanCOG region. Use of hazardous materials at these businesses would also require permits and monitoring to avoid hazardous waste release through the local CUPA. During operation, businesses that store hazardous materials could potentially experience accidents or upset conditions that result from their routine use. These businesses would be required to prepare spill prevention, containment, and countermeasures plans (pursuant to 40 CFR 112) or, for smaller quantities, a spill prevention and response plan. These plans identify best management practices for spill and release prevention and provide procedures and responsibilities for rapidly, effectively, and safely cleaning up and disposing of any spills or releases. Oversight is provided by the CUPA. Pursuant to the requirements and liabilities of applicable regulations, the routine use or accidental spill of hazardous materials at business and industrial uses facilitated by the land use projects included in the proposed 2026 RTP/SCS would not pose a substantial hazard to the public or the environment. Disposal of hazardous waste generated by these businesses would be subject to compliance with DTSC and CalEPA regulations.

Transportation projects included in the proposed 2026 RTP/SCS include a variety of transportation modifications such as new travel lanes, auxiliary lanes, roadway widening, increased transit service and expansion, and other maintenance and rehabilitation projects. The projects may increase the capacity of roadways to transport hazardous materials. Roadway projects in the proposed 2026 RTP/SCS would also improve road safety, as well as pedestrian and bicycle safety, thereby potentially reducing transportation-related hazardous materials risks because fewer accidents would occur on safer roads. Based on the requirements of Title 49 CFR 171–180, construction and

operation of transportation projects would provide for the safe transport and disposal of hazardous waste.

The proposed 2026 RTP/SCS encourages infill development and increased population and employment density near public transit stops, including rail. There could also be increased urbanization along transportation corridors. Thus, the number of people potentially exposed to hazardous conditions could increase as a result of land use projects included in the proposed 2026 RTP/SCS. Although exposure to hazardous conditions could increase, the routine transport, use, and storage of potentially hazardous materials such as fuels, lubricants, solvents, and oils would be required to be conducted in accordance with all applicable State and federal laws, such as the Hazardous Materials Transportation Act, Resource Conservation and Recovery Act, the California Hazardous Material Management Act, and the CCR, Title 22. As described in Section 4.9.2, Regulatory Setting, the DOT regulates the transport of hazardous materials by all modes, including rail and highway under the regulations of the Hazardous Materials Transportation Act. The Local Community Rail Security Act of 2006 requires all rail operators to provide security risk assessments to California Public Utilities Commission, which includes emergency response procedures and communication protocols. Mandatory implementation of additional federal, state, and local requirements such as Cal ARP Program and the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act would minimize potential exposure to the public and the environment from accidental releases. Therefore, although population density would increase in proximity to major transportation corridors that are used to transport hazardous and flammable materials, the increased risk of hazards from routine transport or accidental upsets during transport would be minimal.

In conclusion, both planned land use projects and transportation projects could increase the routine transport, use, storage, and disposal of hazardous wastes in the StanCOG region. The planned land use projects and transportation projects could also increase the potential for unintentional upset and accident conditions. Because of the existing federal, state, and local regulations and oversight in place that would effectively reduce the inherent hazard associated with routine transport, use, storage and disposal activities, and regulations that effectively reduce the potential for individual projects to create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions, impacts would be less than significant.

Mitigation Measures

Mitigation measures are not required because this impact would be less than significant, as jurisdictions are required to follow the protection policies and ordinances as described above.

Threshold 3:	Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

Impact HAZ-2 TRANSPORTATION IMPROVEMENT PROJECTS AND THE LAND USE SCENARIO ENVISIONED IN THE PROPOSED 2026 RTP/SCS WOULD NOT EMIT HAZARDOUS EMISSIONS OR HANDLE HAZARDOUS OR ACUTELY HAZARDOUS MATERIALS, SUBSTANCES OR WASTE WITHIN ONE-QUARTER MILE OF AN EXISTING OR PROPOSED SCHOOL. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As discussed in Impact HAZ-1, the land use projects included in the proposed 2026 RTP/SCS could include uses such as dry cleaners, gas stations, and certain industrial uses that would involve routine handling of hazardous materials and waste. Therefore, the proposed 2026 RTP/SCS could increase

the amounts of hazardous materials handled within 0.25 mile of schools, depending on the specific location of land uses relative to schools in the region. There are over 107,200 students enrolled in SCOE schools county-wide. Certain industrial uses, such as chemical plants, may also generate hazardous emissions as byproducts, typically in the form of air emissions.

Any new commercial or industrial operations in proximity to existing schools would be required to comply with regulations related to the routine use, storage, and transport of hazardous materials. Land uses that would generate emissions or involve the handling of extremely hazardous materials, substances, or waste within one-quarter mile of an existing school must notify the affected school district pursuant to Public Resources Code Section 21151.4. As discussed in detail above, compliance with existing regulations would reduce the exposure to potential hazards associated with these land uses.

For new schools that may be developed to address the population distribution changes resulting from the land use scenario included in the proposed 2026 RTP/SCS, the California Education Code, as discussed in Section 4.9.2, *Regulatory Setting*, would ensure that school sites would be free of contamination or cleaned up to a level that would protect students and staff that would occupy a new school site. Therefore, hazardous emissions and handling impacts on schools related to land use projects included in the proposed 2026 RTP/SCS would be less than significant.

The transportation projects included in the proposed 2026 RTP/SCS could increase the capacity to transport hazardous materials on roads within the StanCOG region, including within 0.25 mile of schools. However, all materials must be used, stored, and disposed of in accordance with applicable federal, state, and local laws, which would effectively reduce the potential impacts associated with hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or potential future school. Transportation projects in the proposed 2026 RTP/SCS may also improve road safety, thereby reducing the potential for accidents in proximity of schools related to hazardous materials. Therefore, the hazardous materials impacts related to existing and proposed schools from implementation of the transportation projects included in the proposed 2026 RTP/SCS would be less than significant.

Mitigation Measures

Mitigation measures are not required because this impact would be less than significant, as jurisdictions are required to follow the protection policies and ordinances as described above.

Threshold 4:	Would the project be located on a site that is included on a list of hazardous material 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?

Impact HAZ-3 THE PROPOSED 2026 RTP/SCS INCLUDES TRANSPORTATION IMPROVEMENT PROJECTS AND A LAND USE SCENARIO THAT COULD OCCUR ON SITES ON THE LIST OF HAZARDOUS MATERIAL SITES COMPILED BY GOVERNMENT CODE SECTION 65962.5, WHICH HAS THE POTENTIAL TO CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR ENVIRONMENT. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Throughout the StanCOG region there are many sites where historical releases of hazardous materials or wastes have occurred; these are listed in environmental databases pursuant to Government Code Section 65962.5. As described In Section 4.9.1.a, there are hundreds of documented sites of contamination in some stage of DTSC or SWRCB oversight in the region. These sites range from small releases that have had localized effects on private property and have already been remediated to large scale releases from long-term historical industrial practices that have had

wider ranging effects on groundwater. Specific sites of documented contamination are not evaluated in this analysis because this is a programmatic level document. Because the precise timing of future land use developments is unknown, an evaluation of the potential for specific sites of known contamination within the StanCOG region to be affected by land use projects included in the proposed 2026 RTP/SCS cannot be conducted. However, land use can be used to generally characterize the potential for release of hazardous materials (i.e., hazardous materials releases are more likely to have occurred in areas that currently or historically supported industrial uses). In addition, construction activities that disturb subsurface materials could encounter previously unidentified contamination from past practices or placement of undocumented fill or even unauthorized disposal of hazardous wastes. Encountering these hazardous materials could expose workers, the public or the environment to adverse effects depending on the volume, materials involved, and concentrations.

Development on identified hazard sites within the StanCOG region would be preceded by investigation, remediation and cleanup under the supervision of the RWQCB, DTSC, or the applicable hazardous materials division (e.g., local oversight or Stanislaus County Department of Environmental Resources) before construction activities could begin. The agency responsible for oversight would determine the types of remediation and cleanup required and could include excavation and off-haul of contaminated soils, installation of vapor barriers beneath habitable structures, continuous monitoring wells onsite with annual reporting requirements, or other mechanisms to ensure the site does not pose a health risk to workers or future occupants. In addition, in many instances implementing and/or permitting agencies require submittal of a Phase I ESA prior to approval or implementation of a project. These studies include research in a variety of government databases to determine whether the site has had prior underground tanks or other industrial uses that could result in hazardous materials on or below the ground surface. However, with the exceptions for streamlining projects in transit priority areas and siting public schools, there are no general regulatory requirements to conduct a Phase I ESA, or subsequent investigation of potential contamination. Therefore, because it cannot be assumed these practices would occur for every project with the potential to result in hazards to the public or environment, the impacts related to land use projects included in the proposed 2026 RTP/SCS are potentially significant.

Development on sites listed in environmental databases pursuant to Government Code Section 65962.5 would be required to undertake remediation procedures prior to grading and development under the supervision of the applicable agency, depending upon the nature of any identified contamination. Nevertheless, the impacts of transportation projects included in the proposed 2026 RTP/SCS would be significant because there could be significant hazard to the public or the environment related to projects located on sites listed pursuant to Government Code Section 65962.5. The following mitigation measures would reduce this impact.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and other transportation project sponsor agencies can and should implement, the following mitigation measures where applicable for transportation projects that would result in impacts that would potentially be located in areas with existing contamination. The County and cities in the StanCOG region can and should implement these measures, where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

HAZ-3 Site Remediation

If an individual project included in the proposed 2026 RTP/SCS is located on or near a hazardous materials and/or waste site pursuant to Government Code Section 65962.5, the implementing agency shall prepare a Phase I ESA in accordance with the American Society for Testing and Materials' E-1527-05 standard. For work requiring any demolition or renovation, the Phase I ESA shall make recommendations for any hazardous building materials survey work that shall be done. All recommendations included in a Phase I ESA prepared for a site shall be implemented. If a Phase I ESA indicates the presence or likely presence of contamination, the implementing agency shall require a Phase II ESA, and recommendations of the Phase II ESA shall be fully implemented. Examples of typical recommendations provided in Phase I/II ESAs include removal of contaminated soil in accordance with a soil management plan approved by the local environmental health department; covering stockpiles of contaminated soil to prevent fugitive dust emissions; capturing groundwater encountered during construction in a holding tank for additional testing and characterization and disposal based on its characterization; and development of a health and safety plan for construction workers.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction, as applicable.

Significance After Mitigation

Implementation of Mitigation Measure HAZ-3 would reduce site-related hazardous materials impacts to less than significant because project sites with hazardous material contamination on the list compiled by the Government Code Section 65962.5 would be identified prior to commencement of project construction. Additionally, prior to commencement of construction, measures to remediate contamination, such as containment and disposal of contaminated soil pursuant to federal and state regulations would be required. However, it cannot be guaranteed that all future project level impacts can be mitigated to a less than significant level. There are no other feasible potential mitigation measures. Therefore, impacts would remain significant and unavoidable.

Threshold 5:	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?

Impact HAZ-4 TRANSPORTATION IMPROVEMENT PROJECTS AND THE LAND USE SCENARIO ENVISIONED IN THE PROPOSED 2026 RTP/SCS LOCATED WITHIN AN AIRPORT LAND USE PLAN OR WITHIN TWO MILES OF A PUBLIC OR PUBLIC USE AIRPORT WOULD NOT RESULT IN A SAFETY HAZARD OR EXCESSIVE NOISE FOR PEOPLE RESIDING OR WORKING IN THE PROJECT AREA. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The land use scenario and transportation projects included in the proposed 2026 RTP/SCS may be located at or near a public use airport or a private airstrip. Impacts associated with development at or near existing airports are largely dependent upon site- and project-specific information that is not currently available and would be provided in the future as projects within the proposed 2026 RTP/SCS undergo project level environmental review. However, any development and subsequent

planning decisions in proximity to airports would be subject to review under the State Aeronautics Act provided under Public Utilities Code Section 21167 et seq. Specific projects that may affect navigable airspace are also subject to FAA review, as outlined under 14 CFR Parts 77.5, 77.7, and 77.9. Additionally, the proposed 2026 RTP/SCS would not change existing land use designations or zoning, and land use development would be subject to existing zoning regulations, including height restrictions and restrictions on residential development within the identified noise contours of an airport that exist in any General Plan that features an airport within its service area. Because there are existing federal, State, and local regulations and oversight in place that would effectively reduce the inherent hazard associated with development near airports to an acceptable and safe level, the impacts of the proposed 2026 RTP/SCS would be less than significant.

Mitigation Measures

Mitigation measures are not required because this impact would be less than significant, as jurisdictions are required to follow the protection policies and ordinances as described above.

4.9.4 Cumulative Impacts

The cumulative impact analysis area for the hazards and hazardous materials analysis consists of the StanCOG region and adjoining counties. Information regarding these adjoining counties can be found in Chapter 3, *Environmental Setting, 3.3.4 Approach for Cumulative Analysi*s. Future development in this region relative to exposure to hazards is considered in the analysis. This cumulative extent is used to evaluate potential impacts from the increase of hazards and hazardous materials within the context of regional development.

The potential impacts related to hazards and hazardous materials are generally related to site specific and project specific characteristics and conditions; however, hazardous sites or releases can occur across multiple adjoining property or jurisdictions. Although the transport of hazardous materials may occur on rail or on roadways, such as SR 99, that traverse both the StanCOG region and adjacent counties, there are existing federal, state, and local regulations and oversight in place that would effectively reduce the inherent hazard associated with routine transport of such materials. Regulations and oversight, as outlined above in Section 4.9.2, would also effectively reduce the potential for individual projects to create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions, within the StanCOG region as well as adjoining counties.

Land use development envisioned as part of the proposed 2026 RTP/SCS could result in the development of sites listed in environmental databases pursuant to Government Code Section 65962.5. Cumulative impacts related to hazards and hazardous materials would be significant due to existing and potential development on contaminated sites throughout the StanCOG region. The proposed 2026 RTP/SCS would contribute to this significant cumulative impact by enabling future development and transportation projects; however, compliance with Mitigation Measure HAZ-3 would reduce the project's impact, but not to less-than-significant levels. Therefore, the project's contribution to cumulative hazards and hazardous materials impacts would remain cumulatively considerable with mitigation.

Several potential hazards impacts would be site-specific, such as airport hazards and emergency response. Impacts related to airport hazards depend on the characteristics and design of individual projects and their location relative to distance and location of nearby airports. Existing regulations place limitations on the types of development that can be permitted within various aircraft zones surrounding an airport, such as building height restrictions or prohibiting residential occupancy.

Mandatory compliance with these regulations would prevent substantial hazards related to airports. Cumulative impacts would be less than significant. Emergency response plans are generally specific to a particular city or county or parts thereof. For example, in the event of an imminent emergency in Stanislaus County, emergency response is typically from police, ambulance and fire departments local to the county, and not from areas outside of the Stanislaus region. Thus, the cumulative impacts related to conflicts with emergency response plans would be less than significant.

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4.10 Hydrology and Water Quality

This section describes the environmental and regulatory setting as well as water quality, groundwater supply, drainage, runoff, flooding, and dam inundation impacts of development facilitated by the proposed 2026 RTP/SCS in the StanCOG region.

4.10.1 Setting

Hydrological Setting

The StanCOG region (Stanislaus County and all cities within the County) is located in the San Joaquin Valley, which typically has cool, wet winters and warm, dry summers. The County receives an average of approximately 12 inches of precipitation per year, with the majority falling from November through April. Precipitation is higher in the eastern part of the County, near to the Sierra Nevadas, averaging 17 inches a year at the station in Knight's Ferry (Western Regional Climate Center 2021).

The StanCOG region is contained entirely within the San Joaquin River Hydrologic Region (HR), which includes all or part of 15 counties, four groundwater basins, and eleven subbasins. The HR stretches from the Sierra Nevadas in the east to the Coastal Range in the west. It's northern border roughly follows the Cosumnes River to Folsom Lake and then lies between the Cosumnes and South Fork American Rivers. Fresno County marks the southern extent of the HR (California Department of Water Resources [DWR] 2021). The San Joaquin Valley is a broad alluvial plain which comprises the southernmost portion of the Great Valley Geomorphic Province of California. The Great Valley is a broad structural trough bounded by the tilted block of the Sierra Nevada on the east, the uplifted Klamath Mountains to the north, and the complexly folded and faulted Coast Ranges on the west (California Geological Survey 2002).

Three major rivers are located in the StanCOG region: the San Joaquin, Stanislaus, and Tuolumne. The San Joaquin River originates in the Sierra Nevada mountains in Fresno County and runs northwest through the Central Valley where it converges with the Sacramento River in the Sacramento-San Joaquin Delta. The Stanislaus River is a tributary to the San Joaquin River and originates in the central Sierra Nevada range. It divides San Joaquin and Stanislaus Counties. The Tuolumne River is another tributary to the San Joaquin River, originating in Yosemite National Park at the crest of the Sierra Nevada and running southwest through the central portion of the StanCOG region. There are several major water storage reservoirs within the StanCOG region, including the Modesto, Woodward, Turlock, and La Grange reservoirs, as well as numerous dams that divert water from the creeks and streams throughout the StanCOG Region, primarily for agricultural use.

There are four groundwater Subbasins that lie within the StanCOG region: Eastern San Joaquin Subbasin, Modesto Subbasin, Turlock Subbasin, and the Delta-Mendota Subbasin. All extend outside the region area, but the Modesto Subbasin lies almost entirely within the region with only a tiny portion extending into Tuolumne County (DWR 2021). The Delta-Mendota lies primarily to the south and extends through large portions of Merced and Fresno Counties as well as stretching into San Joaquin and Madera counties. Hydrographic data through 2018 indicates that groundwater levels have remained fairly stable in the Modesto area since then, but levels throughout the rest of the Modesto Subbasin continue to decline at various rates (Stanislaus and Tuolumne Rivers Groundwater Basin Association 2024).

Water Agencies and Management Regions

The StanCOG region lies within the Central Valley Regional Water Quality Control Board (RWQCB) boundaries. RWQCB is the primary agency responsible for overseeing water quality issues in the region.

The Eastern Stanislaus Regional Water Management Group is the largest Integrated Regional Water Management (IRWM)[1] agency in the StanCOG region and covers virtually all of the Modesto and Turlock Subbasin areas. The Delta-Mendota Subbasin is part of the Westside-San Joaquin Regional Water Management Group IRWM region, which extends outside the borders of the StanCOG region. The northern part of the StanCOG region has no IRWM agencies.

Water Supply

Supply Sources

The StanCOG region relies on the conjunctive use of surface water and groundwater to meet a variety of water demands. Conjunctive use of water, in general, refers to injecting surface water into groundwater aquifers or storing stormwater and runoff in ponds where it can infiltrate aquifers. Water supply within the StanCOG region is discussed under Section 4.17, *Effects Considered Less Than Significant*, and only groundwater management as it relates to the impact analysis of this section is discussed here.

Groundwater is the major source of water for urban areas. The cities of Modesto, Oakdale, and Riverbank and the communities of Salida, Empire, and Waterford use groundwater as their primary potable water supply (MSGSP 2020). Groundwater is also the major source of agricultural irrigation water for the StanCOG region.

Regional Usage

The four Subbasins within the StanCOG region were all deemed high priority by DWR during the priority assignment phase of the beginnings of Sustainable Groundwater Management Act (SGMA) implementation (see Section 4.10.2, *Regulatory Setting*). The Delta-Mendota and Eastern San Joaquin Subbasins were deemed in critical overdraft and required to form Groundwater Sustainability Agencies (GSAs) and submit Groundwater Sustainability Plans (GSPs) for approval to DWR. The Northern-Central Delta Mendota GSA is part of the larger Delta-Mendota Subbasin groundwater planning and adopted their GSA in 2019; the Eastside San Joaquin Groundwater Authority became one of the member agencies of the Eastern San Joaquin Groundwater Authority, covering much of the Subbasin, and their joint GSP was last updated in 2024. Both plans have been deemed 'Incomplete' by DWR and are in the process of revision. The Modesto and Turlock Subbasins were not deemed in critical overdraft, but are still high priority, and as such joint GSAs have formed for both Subbasins and both have submitted draft GSPs that are awaiting DWR review. Table 4.10-1 below gives estimated groundwater pumping amounts from the four subbasins from 2015.

[1] IRWM regions serve to coordinate regional water project funding applications and planning and serve as a primary source of budgetary planning for multi-jurisdictional water infrastructure projects.

Table 4.10-1 Groundwater Pumping in Stanislaus County (2015)

Groundwater Subbasin	Agricultural Pumping (AFY)	Municipal Domestic Pumping (AFY)	Rural Domestic Pumping (AFY)	Water Budget (AFY)
Eastern San Joaquin	66,315	0	770	67,085
Modesto	170,892	45,968	5,870	222,730
Turlock	405,274	38,199	6,058	449,531
Delta-Mendota	233,864	5,644	1,467	240,975
Total				**980,321**

Source: Stanislaus County 2017

Although the use of the four Subbasins in the StanCOG region has been managed, all four subbasins have experienced severe depletions during drought conditions in the region. Future concerns include an increased groundwater demand to supply the growing agricultural population. Demands have also increased due to limited surface water deliveries for the western portion of the StanCOG region during continued drought.

Water Quality

Water quality is a concern due to its potential impact on human health, enterprise, organisms, and ecosystem conditions. Quality is determined by factors such as native condition of surface water and groundwater, and by the amount and sources of contamination (natural and human induced).

Surface Water

A major source of pollution to surface waters is polluted storm water and both urban and agricultural runoff discharges. Urban runoff pollutants are generally collected by stormwater conveyance systems and often discharge from point sources such as outflow pipes into local water bodies and surface waters without any form of treatment. Agricultural runoff can both percolate directly into groundwater over large areas as nonpoint discharge or similarly be collected and conveyed into discharge infrastructure. Common pollutants impairing surface waters from agricultural or urban stormwater runoff can include pesticides, fertilizers, green waste, animal waste, human waste, petroleum hydrocarbons (gasoline, motor oil), trash, and other constituents.

Under Section 303(d) of the Clean Water Act, States are required to develop and update a list of all water bodies under their jurisdiction which fail to meet water quality standards even after point sources of pollution have utilized the minimum levels of pollution control (see Section 4.10.2, *Regulatory Setting,* below). These are referred to as '303(d) impaired' bodies. There are numerous 303(d) impaired water bodies within Stanislaus County, as depicted in Table 4.10-2 below.

Table 4.10-2 303(d) Impaired Waterbodies in Stanislaus County

Water Body	Impairment Constituent
Del Puerto Creek (Stanislaus County)	Bifenthrin; Boron; Chlorpyrifos; Chromium; Cyfluthrin; Cyhalothrin (Lambda); DDE; Dieldrin; Diuron; Esfenvalerate/Fenvalerate; Indicator Bacteria; Nickel; pH; Pyrethroids; Salinity; Specific Conductivity; Total Dissolved Solids; Toxicity
Delta Waterways (southern portion)	Chlorpyrifos; DDT; Diazinon; Electrical Conductivity; Group A Pesticides; Invasive Species; Mercury; Toxicity
Dry Creek (tributary to Tuolumne River at Modesto, E Stanislaus County)	Bifenthrin; Chlorpyrifos; Cyfluthrin; Cyhalothrin (Lambda); Indicator Bacteria; Oxygen, Dissolved; Pyrethroids; Toxicity
Duck Creek (San Joaquin County)	Chlorpyrifos; Indicator Bacteria; Lead; Mercury; Oxygen, Dissolved; Toxicity

Water Body	Impairment Constituent
Grayson Drain (at outfall)	Indicator Bacteria; Toxicity
Harding Drain	Chlorpyrifos; DDE; Hexachlorobenzene (HCB); Indicator Bacteria; Lindane (gamma-HCH); alpha-BHC
Hospital Creek (San Joaquin and Stanislaus Counties)	Boron; Chlorpyrifos; DDE; DDT; Dieldrin; Diuron; Indicator Bacteria; Lead; Methyl Parathion; Nickel; Pyrethroids; Salinity; Specific Conductivity; Total Dissolved Solids; Toxicity; pH
Ingram Creek (Hospital Creek to Hwy 33)	Arsenic; Bifenthrin; Boron; Chlorpyrifos; Cyfluthrin; Cyhalothrin (Lambda); DDE; DDT; Diazinon; Diuron; Dimethoate; Esfenvalerate/Fenvalerate; Imidacloprid; Indicator Bacteria; Metolachlor; Nitrate/Nitrite; Oxygen, Dissolved; Pyrethroids; Specific Conductivity; Total Dissolved Solids; Toxicity
Ingram Creek (San Joaquin River to Hospital Creek)	Chlorpyrifos; DDE; Dieldrin; Indicator Bacteria; Pyrethroids; Salinity; Toxicity
Littlejohns Creek	Chlorpyrifos; Indicator Bacteria; Oxygen, Dissolved; Toxicity
Lone Tree Creek	Ammonia; BOD; Benthic Community Effects; Chlorpyrifos; Diuron; Indicator Bacteria; Oxygen, Dissolved; Toxicity
Merced River, Lower (McSwain Reservoir to San Joaquin River)	Group A Pesticides; Mercury; Oxygen, Dissolved; Temperature, Water; Toxicity
Modesto Reservoir	Mercury
Newman Wasteway	DDE; Indicator Bacteria; Oxygen, Dissolved; Salinity
Orestimba Creek (above Kilburn Road)	Azinphos-methyl; Bifenthrin; Chlorpyrifos; Cyhalothrin (Lambda); DDE; DDT; Diazinon; Dieldrin; Dimethoate; Esfenvalerate/Fenvalerate; Indicator Bacteria; Oxygen, Dissolved; Pyrethroids; Selenium; Specific Conductivity; Total Dissolved Solids; Toxicity
Orestimba Creek (below Kilburn Road)	Azinphos-methyl; Bifenthrin; Chlorpyrifos; Chromium; Cyhalothrin (Lambda); DDD; DDE; DDT; Dieldrin; Dimethoate; Esfenvalerate/Fenvalerate; Imidacloprid; Indicator Bacteria; Nickel; Oxygen, Dissolved; Pyrethroids; Specific Conductivity; Total Dissolved Solids; Toxicity
Ramona Lake	Boron; Oxygen, Dissolved; Specific Conductivity; Total Dissolved Solids; Toxicity; pH
Rock Creek (Stanislaus County)	Indicator Bacteria; Oxygen, Dissolved
San Joaquin River (Mendota Pool to Bear Creek)	DDT; Group A Pesticides; pH; Toxicity
San Joaquin River (Mud Slough to Merced River)	Boron; Chlorpyrifos; DDT; Diazinon; Electrical Conductivity; Group A Pesticides; Indicator Bacteria; Mercury; Selenium; Temperature, Water; Toxicity
San Joaquin River (Merced River to Tuolumne River)	DDE; DDT; Electrical Conductivity; Group A Pesticides; Mercury; Specific Conductivity; Temperature, Water; Total Dissolved Solids; Toxicity; alpha-BHC
San Joaquin River (Tuolumne River to Stanislaus River)	DDT; Electrical Conductivity; Group A Pesticides; Mercury; Temperature, Water; Toxicity
Stanislaus River, Lower	Group A Pesticides; Mercury; Temperature, Water; Toxicity
Tuolumne River, Lower (Don Pedro Reservoir to San Joaquin River)	Group A Pesticides; Mercury; Temperature, Water; Toxicity
Turlock Lake	Mercury
Westley Wasteway (Stanislaus County)	Chlorpyrifos; Dimethoate; Indicator Bacteria
Woodward Reservoir	Mercury

Source: State Water Resources Control Board (SWRCB) 2024 303(d) List Database

Surface water quality is impaired from anthropogenic pollution primarily in the valley floor area of the western County and major point sources of contamination include municipal wastewater, oil field wastewater, winery discharges, and solid waste sites, while the primary non-point source of pollutants is agricultural runoff (RWQCB 2019). To address surface water quality impairments, the RWQCB has prescribed total maximum daily loads (TMDLs) in the Central Valley for diazinon and chlorpyrifos concentrations and nitrates/nitrates, which are contaminants associated with agricultural pesticides, as well as numerous TMDLs throughout the greater San Joaquin River watershed including TMDLs for mercury and methylmercury, dissolved oxygen, salinity, and boron (RWQCB 2019).

Groundwater

Water quality in the regional groundwater basins has degraded over the years from continual pumping and use. This is particularly true in areas where the water table has been substantially lowered. Additional factors that contribute to the decline of groundwater quality include percolation of agricultural runoff contaminated with fertilizers and pesticides into the water table, percolation of water from public and private sewage treatment systems, and percolation of contaminated urban runoff.

The entire San Joaquin Valley is underlain by the San Joaquin aquifer. Groundwater quality on the east and west sides of the San Joaquin River is vastly different. On the east side of the San Joaquin River, the water table depth varies from less than 20 feet around Turlock to greater than 200 feet elsewhere (DWR 2025). Specific constituents of concern for groundwater quality in the Modesto area includes total dissolved solids, pesticides, nitrate, and volatile organic compounds (Stanislaus and Tuolumne Rivers Groundwater Basin Association 2024). The Turlock Subbasin has experienced increased salinity levels due to an upward migration of saline brine originating from a confined saline aquifer (Turlock Subbasin Groundwater Sustainability Agency 2021). In addition, constituents such as perchloroethylene, pesticides, ethylene dibromide, uranium, nitrates, manganese, and iron have been found in a few water supply wells within the Turlock Subbasin. Some of these constituents are naturally occurring, such as manganese and uranium, while others are products of agricultural contamination.

To the west of the San Joaquin River, including throughout the Delta- Mendota Subbasin, high natural salinity in the groundwater caused by recharge from the Coast Range mountains has been exacerbated by ongoing agricultural irrigation and groundwater depletion (Northern and Central Delta Mendota Groundwater Sustainability Agency 2019). The high water table and poorly-draining soils restrict groundwater movement, causing salinity buildup. The major groundwater quality concern is from total dissolved solids and nitrates, but levels of pesticides and other contaminants are also found in the groundwater, as well as naturally occurring selenium and boron in the grasslands and marshes.

Flooding and Dam Inundation

Streams and Floodplains

Flooding can occur as a result of storm events and excessive rainfall. Pursuant to Title 23, California Code of Regulations (23 CCR) Section 112, the Central Valley Flood Protection Board maintains jurisdiction over four regulated streams, including: Dry Creek from Tuolumne River to the Atchison, Topeka and Santa Fe Railroad; Laird Slough; Stanislaus River; and Tuolumne River. According to Stanislaus County Office of Emergency Services' (OES) Multi-Jurisdictional Hazard Mitigation Plan,

existing dams on the Tuolumne and Stanislaus rivers substantially reduce the risk of flooding on surrounding lands (OES 2022). However, major flooding tends to occur along the San Joaquin River and isolated stretches of the Tuolumne River, as well as on Orestimba, Salado, and Sand Creeks (Stanislaus County 2016). Figure 4.10-1 shows the 100- and 500-year floodplains in the StanCOG region.

Dam Inundation

Inundation can result from dam failure, which refers to the breakdown, collapse or other failure of a dam structure characterized by the uncontrolled release of impounded water. The most common cause of dam failure is prolonged rainfall that produces flooding, although other causes include natural events such as earthquakes or landslides. DWR maintains inundation maps that depict the potential severity of flooding from dam failure. In Stanislaus County the DWR has categorized flooding damage as being Extremely High from Modesto Reservoir and the ConAgra Settling Ponds, High from Turlock Lake and Woodward, and Significant from Modesto Effluent Storage.

According to the Multi-Jurisdictional Hazard Mitigation Plan (OES 2022), dams outside the StanCOG region that pose a risk of inundation in Stanislaus County include Don Pedro and New Exchequer. Inundation modeling indicates that if any of these dams were to fail, flooded areas would extend into Stanislaus County and maximum water elevation in areas could reach over 110 feet above mean sea level (amsl). The failure of any of the aforementioned dams would have severe consequences that include injury and death, limited transportation routes, and a decrease in vital utilities. Dam failure has never occurred in Stanislaus County and the probability for future failure is unlikely (OES 2022).

Urban Stormwater

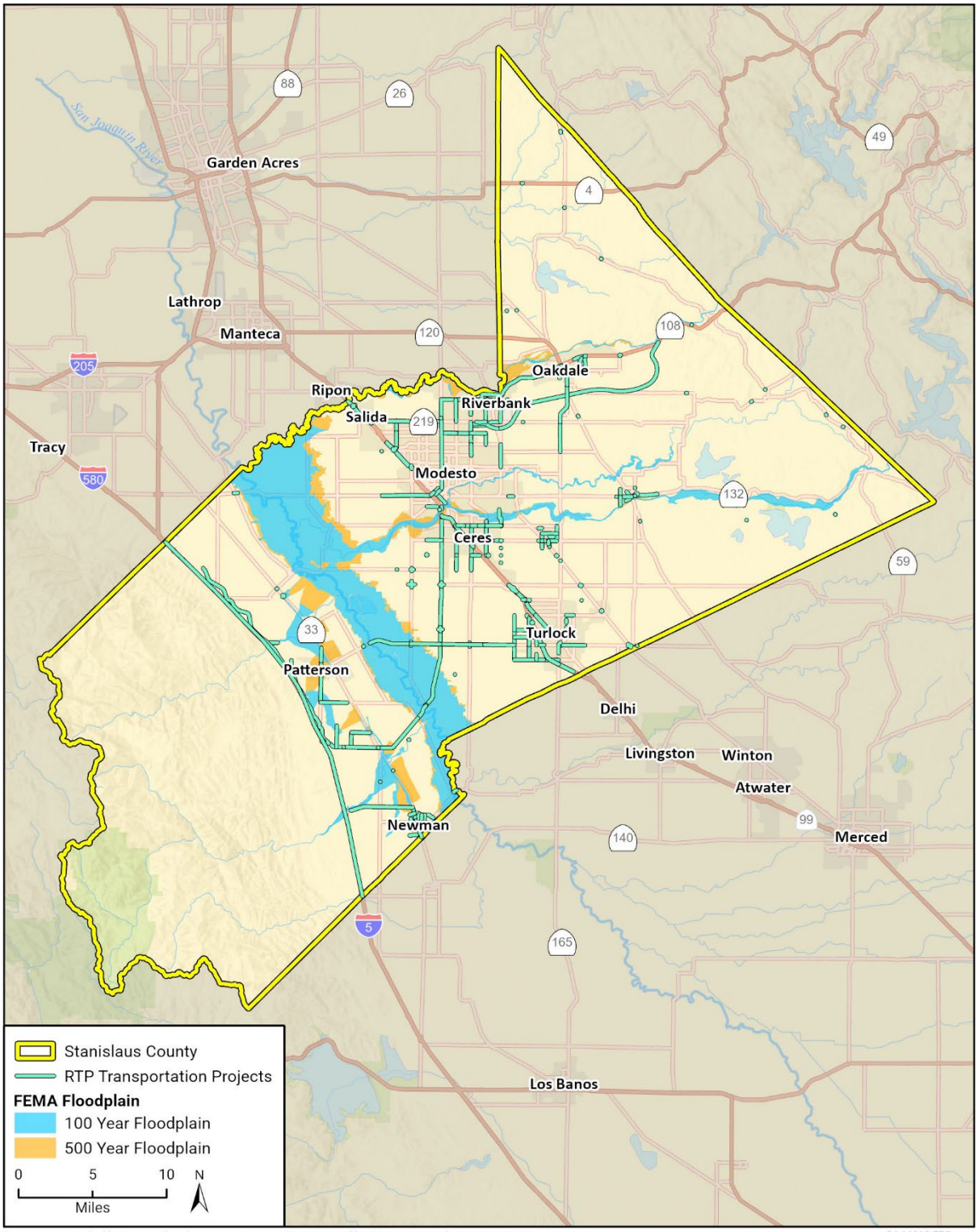
During heavy rains, flooding can also occur on streets and roads within urbanized areas when stormwater cannot permeate into the soil due to impermeable surfaces such as asphalt pavement or building footprints. Flooding can also occur when stormwater drainage systems are overwhelmed due to unanticipated rain events, insufficient size, or damage, and clogging from lack of maintenance. Flooding can also occur alongside or on major road systems such as highways due to similar issues of impermeable surfaces and/or insufficient drainage.

Tsunami and Seiche

Tsunamis are high sea waves that are caused by earthquake, submarine landslide, or other disturbances. Stanislaus County is an inland region separated from the ocean by the Coast Range and, as such, is not at risk of flooding from a tsunami.

A seiche is a temporary disturbance or oscillation in the water level of a lake or partially enclosed body of water, usually caused by changes in atmospheric pressure. In the Modesto, Turlock, and Woodward Reservoirs, an earthquake of sufficient magnitude could cause a seiche, or standing wave, in which case people using a reservoir for recreation would be at risk. Although an earthquake could generate a seiche in these reservoirs, potential inundation would remain localized to low-lying areas along the perimeter of the reservoirs. Additionally, personnel at the reservoirs are trained to handle water-related emergencies, and no privately-owned residences are located along the shorelines of these reservoirs (Stanislaus County 2016).

Figure 4.10-1 Stanislaus County 100 and 500 Year Flood Zones



Basemap provided by Esri and its licensors © 2026. Map created by Rincon Consultants, Inc., 2026.
Additional data provided by CPAD, 2025; FEMA, 2025.

24-16018 EPS.aprx
EIRFig X FEMA Flood Hazards Portrait

4.10.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

Clean Water Act

Congress enacted the Clean Water Act (CWA), 33 U.S.C. Section 1251 et seq., formerly the Federal Water Pollution Control Act of 1972, with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and non-point source discharges to surface water. Point source discharges are regulated by the National Pollutant Elimination System (NPDES) permit process (CWA Section 402). NPDES permitting authority is administered by the SWRCB and nine Regional Water Quality Control Boards (RWQCBs). Section 401 of the CWA requires that any activity that would result in a discharge into waters of the U.S. be certified by the applicable RWQCB. This certification ensures that the proposed activity does not violate state water quality standards. Section 404 of the CWA authorizes the U.S. Army Corps of Engineers to regulate the discharge of dredged or fill material to the waters of the U.S. and adjacent wetlands. Discharges to waters of the U.S. must be avoided where possible, and minimized and mitigated where avoidance is not possible. Section 303(d) of the CWA requires states to establish total maximum daily load programs for streams, lakes, and coastal waters that do not meet certain water quality standards.

Section 10 of the Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act, administered by the U.S. Army Corps of Engineers, requires permits for all structures (such as riprap) and activities (such as dredging) in navigable waters of the United States.

National Flood Insurance Act/Flood Disaster Protection Act

The National Flood Insurance Act of 1968 (42 U.S.C. Section 4001 et seq.) made national flood insurance available for the first time. The Flood Disaster Protection Act of 1973 (42 U.S.C. Section 4001 et seq.) made the purchase of flood insurance mandatory for the protection of property located in Special Flood Hazard Areas. These laws are relevant because they led to mapping of floodplains and to local management of floodplain areas according to guidelines that include prohibiting or restricting development in flood hazard zones.

Floodplain Management (Executive Order 11988)

Executive Order 11988, issued in coordination with the National Environmental Policy Act of 1969, the National Flood Insurance Act of 1968, and the Flood Disaster Protection Act of 1973, directs federal executive agencies to avoid, wherever practicable, the short- and long-term adverse impacts associated with the occupancy and modification of floodplains, and to prevent direct or indirect support of floodplain development. This applies to agencies involved in acquiring, managing, or disposing of federal lands and facilities; funding or undertaking construction projects; and conducting programs that affect land use, such as water resource planning, regulation, and licensing. Agencies must evaluate the potential effects of their actions in floodplains, ensure that planning and budgeting reflect flood hazard considerations, and implement procedures that align with floodplain management policies.

Federal Emergency Management Agency Levee Inventory System

FEMA administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones. FEMA's minimum level of flood protection for new development is the 100-year flood event.

FEMA has also developed requirements and procedures for evaluating earthen levee systems and mapping the areas affected by those systems. Levee systems are evaluated for their ability to provide protection from 100-year flood events and the results of this evaluation are documented in the FEMA Levee Inventory System. Levee systems must meet minimum standards and must be maintained according to an officially adopted maintenance plan. Other FEMA levee system evaluation criteria include structural design and interior drainage. There are multiple levee districts in Tulare County with levees monitored by FEMA.

b. State Laws, Regulations, and Policies

Porter Cologne Water Quality Control Act

The Porter Cologne Water Quality Control Act of 1967 (Water Code Section 13000 et seq.) requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect state waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The Water Quality Control Plan, or Basin Plan, protects designated beneficial uses of state waters through the issuance of Waste Discharge Requirements (WDRs) and through the development of total maximum daily loads. Anyone proposing to discharge waste that would affect the quality of the waters of the State must obtain WDR authorization from the RWQCB or SWRCB as appropriate, in compliance with Porter-Cologne.

Sustainable Groundwater Management Act

SGMA, mentioned above under "Water Supply," establishes a structure for the local management of California's groundwater resources, towards the goal of facilitating sustainable groundwater management, or the management and use of groundwater in a manner that can be maintained over a 50-year planning and implementation horizon without causing undesirable (i.e., unsustainable) results. SGMA establishes the key elements, presented below, which facilitate sustainable groundwater management including consideration to historical overdraft conditions.

1. Requires the establishment of a GSA for each groundwater basin in the state, subject to DWR approval, with the GSA for each respective groundwater basin or subbasin consisting of one or more local agencies with management authority over the basin(s).
2. If the DWR does not approve of a proposed GSA, or if no agency steps forward or is formed to fulfill the role of GSA, this role defaults to the DWR which then assumes the GSA responsibilities, including development of a GSP for the affected basin(s).
3. Requires all groundwater basins designated by the DWR as Medium- or High Priority to prepare and implement a GSP to achieve and maintain sustainable groundwater conditions for the applicable basin according to a SGMA-established timeline, which depends upon the priority ranking of the basin. In the StanGOG region, groundwater basins are all designated as High Priority.

4. Provides for the proposed revisions, by local agencies, to the boundaries of a DWR Bulletin 118 basin, including the establishment of new subbasins.
5. Provides authority for DWR to adopt regulations to evaluate GSPs and review the GSPs for compliance every 5 years.
6. Requires DWR to establish Best Management Practices (BMPs) and technical measures for GSAs to develop and implement GSPs.

Along with mandating the formation of GSAs, SGMA provided the newly formed GSAs a set of tools to assist with groundwater management, including the ability to conduct investigations, levy fees, determine a basin's sustainable yield, and measure and limit groundwater extraction within their area. However, none of the GSPs approved to-date include actions beyond public outreach/education, conducting investigations, and levying fees; some propose voluntary extraction measurement programs and clearly envision mandatory measurement programs being implemented in regional and local codes, but none dictate groundwater limits. Such action would have to be preceded by the determination of a basins' sustainable yield through exercising of GSA statutory investigative powers and would have to be implemented through the promulgation of regulations in a traditional legislative process. Three major GSPs exist within the StanCOG region. The most recent iterations of Modesto GSP and Turlock GSP were both approved in 2025. As of 2026, the Delta Mendota GSP remains in correspondence following state intervention in the region. In general, adopted GSPs call for increased data-gathering, including through expanded use of voluntary metering of individual wells. Many local governments already require metering on new wells, and where this is the case, many GSAs are beginning to collect that information as part of their investigative power. SGMA requires GSAs to update their GSPs every five years once approved.

Antidegradation Policy

California's antidegradation policy, formally known as the Statement of Policy with Respect to Maintaining High Quality Waters in California, restricts degradation of surface and groundwaters. It protects waters where existing water quality is higher than necessary for the protection of beneficial uses. Any actions with the potential to adversely affect water quality must be consistent with the maximum benefit to the people of the State; not unreasonably affect present and anticipated beneficial use of the water; and not result in water quality less than prescribed in water quality plans and policies.

Cobey-Alquist Floodplain Management Act

The Cobey-Alquist Floodplain Management Act (Water Code Section 8400 et seq.) gives support to the National Flood Insurance Program by encouraging local governments to plan, adopt, and enforce land use regulations for floodplain management, to protect people and property from flooding hazards. The Act also identifies requirements that jurisdictions must meet to receive state financial assistance for flood control.

California Department of Transportation Stormwater Permit

The *National Pollutant Discharge Elimination System Statewide Stormwater Permit And Waste Discharge Requirements For State Of California Department Of Transportation* (Caltrans MS4 Permit), Order No. 2022-0033-DWQ, regulates stormwater and non-stormwater discharges from Caltrans properties and facilities associated with operation and maintenance of the state highway system. It contains four basic requirements:

- Caltrans must comply with the requirements of the Construction Stormwater General Permit;
- Caltrans must implement a year-round program in all parts of the state to effectively control stormwater and non-stormwater discharges;
- Caltrans stormwater discharges must meet water quality standards through implementation of construction and operational BMPs, and other measures deemed necessary by SWRCB and/or other agency having authority in reviewing the stormwater component of the project; and
- Caltrans must comply with the prohibition of discharge of trash to surface waters of the State or deposition of trash where it may be discharged into surface waters of the State through compliance with the requirements of Attachment E of the Caltrans Stormwater Permit, with a demonstration of full compliance by December 2, 2030.

The Caltrans MS4 Permit incorporates the requirements of SWRCB Resolution 2015-0019, which amended the *Water Quality Control Plan for Ocean Waters of California and the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California* to include trash-related requirements, referred to in the order as the "Trash Provisions." Implementation of the Trash Provisions includes the following:

- Caltrans must install, operate, and maintain any combination of full capture systems, other treatment controls, and/or institutional controls for all storm drains that capture runoff from Significant Trash Generating Areas (where trash accumulates in substantial amounts). Caltrans must develop and implement monitoring plans that demonstrate such combinations achieve full capture system equivalency.
- Caltrans must coordinate efforts with MS4 permittees subject to NPDES permits that implement the Trash Provisions to install, operate, and maintain full capture systems, other treatment controls, and/or institutional controls in Significant Trash Generating Areas and/or Priority Land Uses.

To comply with the permit, Caltrans developed the Statewide Stormwater Management Plan to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The Statewide Stormwater Management Plan assigns responsibilities within Caltrans for implementing stormwater management procedures and practices, as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The Statewide Stormwater Management Plan describes the Caltrans stormwater management program and the minimum procedures and practices Caltrans uses to reduce pollutants in stormwater and non-stormwater discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. Projects on Caltrans facilities are required to follow the guidelines and procedures outlined in the latest Statewide Stormwater Management Plan and include BMPs in the project design to address stormwater runoff.

California Green Building Standards Code

The California Green Building Standards Code (CalGreen, Cal. Code Regs. Title 24, Part 11) includes mandatory measures for residential and nonresidential development. For example, Section 4.106.2 requires residential projects that disturb less than one acre and are not part of a larger common plan of development to manage stormwater drainage during construction through on-site retention basins, filtration systems, and/or compliance with a stormwater management ordinance. Section 5.106.1 requires newly constructed nonresidential projects and additions of less than one acre to

reduce the pollution of stormwater runoff because of construction through compliance with a local ordinance or implementing BMPs that address soil loss, and good housekeeping to manage equipment, materials, and wastes. Section 5.303 sets measures for indoor water use for non-residential development requiring metering devices to conserve water.

Phase II Municipal Stormwater Permit

The Municipal Stormwater Permitting Program regulates stormwater discharges from MS4s. The NPDES MS4 permits in California are issued in two phases by SWRCB and the RWQCBs. Phase I MS4 permits are issued by the RWQCBs to medium (i.e., serving between 100,000 and 250,000 people) and large (i.e., serving more than 250,000 people) municipalities. Most of these permits are issued to a group of co-permittees encompassing an entire metropolitan area. The Phase II MS4 Permit is issued by the SWRCB and is applicable to smaller municipalities (i.e., populations of less than 100,000 people) and nontraditional small MS4s (e.g., military bases, public campuses, prison, and hospital complexes). The Phase II MS4 Permit (*WDRs for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems [MS4s] General Permit],* Order No. 2013-0001-DWQ, NPDES No. CAS000004, as amended by Order Nos. 2015-0133-EXEC, 2016-0069-EXEC, 2017-0031-DWQ, 2018-0001-EXEC, 2018-0007-EXEC, and ORDER WQ 2019-0009-EXEC) became effective on July 1, 2013, last amended February 8, 2019, and covers Phase II permittees statewide. The Phase I and Phase II MS4 Permits require permittees to develop a stormwater management program and individual dischargers to develop and implement Stormwater Management Plans.

Construction Stormwater General Permit

The *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities*, Order No. 2022-0057-DWQ, NPDES No. CAS000002 (Construction Stormwater General Permit), adopted by SWRCB, regulates construction activities that include clearing, grading, and excavation resulting in soil disturbance of at least one acre of total land area. The Construction Stormwater General Permit authorizes the discharge of stormwater to surface waters from construction activities and requires all developers of land where construction activities will occur over more than one acre to do the following:

- Complete a Risk Assessment to determine pollution prevention requirements pursuant to the three risk levels established in the Construction Stormwater General Permit;
- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the United States;
- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP) that specifies construction BMPs that will reduce pollution in stormwater discharges to the Best Available Technology/Economically Achievable/Best Conventional Pollutant Control Technology standards;
- Perform inspections and maintenance of all BMPs; and
- Conduct stormwater sampling, if required based on risk level.

To obtain coverage under the Construction Stormwater General Permit, a project applicant must electronically file all permit registration documents with SWRCB prior to the start of construction. Permit registration documents must include a Notice of Intent, Risk Assessment, site map, SWPPP, annual fee, and signed certification statement. The SWPPP must contain a visual monitoring program; a chemical monitoring program for “non-visible” pollutants to be implemented if there is a

failure of BMPs; and a sediment monitoring plan if the site discharges directly to a waterbody listed on the 303(d) list for sediment.

Typical BMPs contained in SWPPPs are designed to minimize erosion during construction, stabilize construction areas, control sediment, control discharges from groundwater dewatering, and control pollutants from construction materials. The SWPPP must also include a discussion of the program to inspect and maintain all BMPs.

The Construction Stormwater General Permit also contains post-construction requirements for projects not covered under a Phase I or Phase II MS4 Permit. The Construction Stormwater General Permit requires implementation of operational BMPs and low impact development features to reduce runoff and pollutants in stormwater discharge.

The Construction Stormwater General Permit also includes groundwater dewatering requirements for projects not covered under a De Minimis or Low Threat Discharge Permit. The dewatering requirements mandate dischargers to implement BMPs to control the volume and velocity of dewatering discharges. The Construction Stormwater General Permit also requires testing and treatment, if necessary, of groundwater discharge to verify the discharge meets or exceeds the effluent limitations specified in the permit.

Industrial Stormwater Permit

The *General Permit for Stormwater Discharges Associated with Industrial Activities* (Industrial General Permit; Order No. 2015-0122-DWQ; NPDES No. CAS00001, as amended in 2015 and 2018) regulates operation of industrial facilities in California based on the Standard Industrial Classification Codes specified in the permit. These facilities include, but are not limited to, manufacturing plants, mining facilities, oil and gas facilities, hazardous waste facilities, landfills, wastewater treatment facilities, recycling facilities, and vehicle maintenance shops that have the potential to discharge stormwater runoff into water bodies. To comply with the Industrial General Permit, the operators of these regulated industrial facilities must implement an operational SWPPP that outlines the measures and stormwater BMPs the operator of an industrial facility must implement to reduce stormwater pollution. Operators of facilities regulated by the Industrial General Permit are also required to conduct stormwater monitoring of pollutants including, but not limited to, sediment, metals, oils, and total suspended solids. In addition, the Industrial General Permit requires industrial discharge to comply with TMDL implementation requirements for impaired water bodies. The SWRCB and RWQCBs implement and enforce the Industrial General Permit, which may impact any industrial development under the 2026 RTP/SCS land use scenario.

c. Local Laws, Regulations, and Policies

Stanislaus County General Plan

The Stanislaus County General Plan (Stanislaus County 2016) Conservation and Open Space Element contains goals and policies related to water conservation, water quality improvement, riparian habitat protection, and fish and wildlife protection. Specifically, Goal 2 is in place to protect and replenish groundwater aquifers and recharge systems. The Agricultural Element describes water resources and prioritizes maintaining groundwater quality, conserving water, and soil management in order to maintain low salinity and mineral levels.

The Stanislaus County Code contains numerous chapters on water quality and management, including Chapter 9.36 and 9.37, which address groundwater well construction and groundwater use and export; Chapters 14.12 and 14.14, which address water conservation and LID measures as well as stormwater management, and Chapter 16 which addresses floodplain regulations. Section 9.36.060 requires that groundwater wells be designed and constructed to prevent surface water entry and contamination of groundwater.

City of Ceres General Plan

The City of Ceres puts forth a number of policies within its General Plan intended to preserve and maintain existing hydrologic resources and systems. For example, Policy 4.F.3 seeks to protect surface water and groundwater resources from contamination by pursuing strategies to minimize the pollutant and sediment levels entering the hydrological system through stormwater and other urban runoff. Policy 4.F.4 directs the City to minimize the amount of impervious surface in the area in order to reduce stormwater flows that may have a negative impact on the hydrology of the Tuolumne River and other downstream water bodies. And Policy 6.F.4 requires new development to mitigate increases in stormwater peak flows and/or volume. Mitigation measures, such as low impact development strategies, should take into consideration impacts on adjoining lands in the city and immediately adjacent to the city in unincorporated Stanislaus County (City of Ceres 2018).

City of Modesto General Plan

The City of Modesto has coverage under its own NPDES permit. The City General Plan addresses water-related goals and policies in Chapter VI, Community Facilities and Services. Goal VI.C contains policies to actively engage City planning with the regional GSAs, Goal VI.E includes policies to ensure compliance with NPDES limits and to increase reclaimed water usage and conservation measures, and Goal VI.F collects policies related to stormwater quality and flood control measures. The City Code contains numerous regulations to ensure compliance with the City's Phase I MS4 Permit within Chapter 10.

City of Turlock General Plan

Policy 3.3-y of the City of Turlock General Plan requires stormwater system infrastructure to be designed and constructed as necessary to safely convey, detain, and dispose of current and future stormwater flows, protect water quality, and meet regulatory requirements (City of Turlock 2012). The Turlock Municipal Code collects most of its water quality and conservation regulations in Chapter 6, Sanitation and Health, including Sections 6-5 which collects the general Water Code, Section 6-7, which addresses water conservation requirements, and Section 6-8 which contains stormwater management and runoff control measures.

Other City General Plans

The general plans and local codes for the cities in the County also generally address the protection of water quality and water resources. For example, the City of Oakdale General Plan contains Policy NR-4.6, which regulates stormwater collection and conveyance to ensure pollutants in runoff have been reduced to the maximum extent practicable (City of Oakdale 2013). The Oakdale Municipal Code addresses stormwater management in Chapter 29 and details prohibitions on water waste and conservation regulations in Chapter 35, Article VI.

Additionally, cities in the County aside from the greater Modesto area are also covered under the Statewide Phase II MS4 General Permit, as discussed under State Laws, Regulations, and Policies above, which requires post-construction stormwater management.

4.10.3 Impact Analysis

a. Methodology and Significance Thresholds

Impacts to hydrology and water quality are evaluated based on adherence to local, state, and federal standards; the nature of potential soil disturbance, construction activities, and groundwater dewatering during construction; potential change in land use and operational activities; potential changes in pre- and post-project impervious surface areas and stormwater flows; and compliance with NPDES requirements, including construction and operational BMPs for control of surface runoff and reduction of pollutants in stormwater runoff. For this programmatic analysis, proposed projects are geospatially compared to existing floodplains in the region to determine whether project implementation could pose an environmental risk related to flooding, inundation, or related downstream pollution impacts.

Appendix G of the *CEQA Guidelines* identifies the following criteria for determining whether a project's impacts would have a significant impact related to hydrology and water quality:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality;
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
3. 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:
    a. Result in substantial erosion or siltation on- or off-site;
    b. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
    c. 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; and/or
    d. Impede or redirect flood flows;
4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; and/or
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

b. Project Impacts and Mitigation Measures

The following section discusses potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2026 RTP/SCS. Due to the programmatic nature of the proposed 2026 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement

projects and future projects under the land use scenario envisioned by the proposed 2026 RTP/SCS could result in the impacts as described in the following section.

Threshold 1:	Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Impact HYD-1 IMPLEMENTATION OF PROPOSED TRANSPORTATION PROJECTS AND FUTURE PROJECTS INCLUDED IN THE LAND USE SCENARIO ENVISIONED IN THE PROPOSED 2026 RTP/SCS WOULD NOT VIOLATE WATER QUALITY STANDARDS OR WASTE DISCHARGE REQUIREMENTS, OR OTHERWISE SUBSTANTIALLY DEGRADE SURFACE OR GROUNDWATER QUALITY. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Implementation of proposed transportation and land use projects envisioned in the proposed 2026 RTP/SCS would result in both short-term and long-term impacts to surface and groundwater water quality. For program-level analyses, water-related impacts are often similar among individual projects within project classes (e.g., constructing new roadways, widening existing roadways, etc.). For example, when a new roadway is constructed, it will tend to have a greater impact than the widening of an existing roadway as it would generate runoff and contamination issues where there previously were none, as well as tend to create a larger amount of new impermeable surfaces than a widening project would. Similarly, improvements within built-up urban areas are less likely to generate concerns over water body pollution than improvements outside the urban landscape, as urban areas frequently have better stormwater drainage (and potential treatment) than countryside roadways, where stormwater capture may consist of a ditch or swale along the road.

Groundwater Quality

Groundwater quality can be impaired in a variety of ways, including through drawdown of shallow, nutrient-polluted agricultural runoff near over-pumped wells; overall untreated runoff from agricultural and animal operations that percolates directly into shallow aquifers; percolation of wastes from septic systems; and percolation into the water table from polluted surface water where such interchange occurs. The proposed 2026 RTP/SCS does not feature alterations to the region's agricultural land uses, and the land use proposals feature increased urban density which would not be likely to include septic usage. Therefore, the primary potential impact to regional groundwater quality would be associated with impacts to surface water quality in areas where surface water is directly connected to underlying groundwater supplies. Potential impacts associated with increased overdraft of groundwater are discussed in Impact HYD-2.

Surface Water Quality

Certain transportation improvements would increase overall impervious surface area throughout the StanCOG region. For example, the multiple road and highway widening projects would introduce increased pavement in areas that are currently undeveloped, with corresponding increases in runoff. Construction activities for transportation projects facilitated by the proposed 2026 RTP/SCS may include soil disturbance, excavation, grading, and similar activities with a high potential to generate sediment and other pollutants. Sediment especially would not require stormwater to transport it into the environment; a high wind would be sufficient. Such projects would also serve to encourage increased use of the improved transportation network and facilitate the planned growth of the County population, leading to an increase in operational contamination from transportation use.

Development projects envisioned under the land use scenario could also introduce impervious surfaces, including infill sites, if the infill site is currently unpaved. However, it is likely that most infill sites are already developed, thus minimizing the increase of impervious surfaces. These and other more outlying projects that would increase impervious surfaces may generate adverse impacts to surface water quality. Pollutants and chemicals associated with urban activities would run off new roadway surfaces or other new impervious surfaces flowing into nearby bodies of water during storm events. These pollutants would include but are not limited to heavy metals from auto emissions, oil, grease, debris, and air pollution residues. Such contaminated urban runoff may result in the incremental long-term degradation of water quality.

Most transportation improvement projects would enhance and upgrade existing and outdated stormwater infrastructure, improving runoff quality: such benefits may be outweighed by the increases in current levels of pollutants caused by increase of traffic flows encouraged by better transportation systems. Similarly, any proposed 2026 RTP/SCS projects with landscaping may require fertilizer/pesticide application, which could enter nearby bodies of water and cause adverse effects to water quality.

As discussed under Section 4.10.2, *Regulatory Setting*, the federal CWA requires that coverage under an NPDES permit be obtained for construction projects that would disturb greater than one acre, or that are part of a larger plan of development that itself covers more than one acre. Acquisition of coverage under the Construction General Permit is dependent on the preparation of a SWPPP that contains project specific BMPs to control the discharge of pollutants, including sediment, into the local surface water drainages as well as post-construction measures to ensure continued permit compliance. In addition, all transportation projects for which Caltrans is the sponsor agency would comply with the Caltrans Statewide NPDES permit that regulates all stormwater discharges from Caltrans owned conveyances, maintained facilities and construction activities. Most proposed 2026 RTP/SCS transportation projects, such as state highway widenings and interchange construction, would disturb more than one acre and therefore subject to these regulations.

Coverage under the Statewide Phase II MS4 Permit would be required for all projects and land uses during their operation that discharged to an MS4 system outside the area covered by the City of Modesto's Phase I MS4 Permit. As described above, Stanislaus County and the cities in the County participate in a SWMP established by the SWRCB for the Statewide Phase II MS4 Permit. The Phase II MS4 General Permit requires certain new development and applicable redevelopment projects to incorporate post-construction stormwater control measures into their design that include low-impact development and hydromodification techniques. Stormwater discharges from the project site must be minimized and must be treated at the project site prior to discharge.

In addition, planning and approval of the various future projects envisioned by the proposed 2026 RTP/SCS would require the lead agencies and project sponsors to ensure compliance with existing local jurisdiction requirements, including applicable municipal code sections such as the City of Modesto's stormwater regulations in Chapter 10 of the Municipal Code and the stormwater and water quality regulations of Chapters 9 and 14 of the County Code.

The land use scenario included in the proposed 2026 RTP/SCS would generate new sources of wastewater, which would also be conveyed to wastewater treatment facilities in the region Discharges of treated wastewater, also called effluent, from the treatment plants are regulated as point sources by the RWQCB and must meet water quality effluent limitations established in the NPDES permit issued by the RWQCB for the treatment plant. Thus, although implementation of the proposed 2026 RTP/SCS would increase the volume of point-source wastewater discharges in the

StanCOG region, required compliance and monitoring of effluent prior to discharge from treatment facilities would ensure impacts would be less than significant.

Compliance with the various regulations and restrictions of the multiple types of permits individual projects may fall under, as well as conformity with applicable County or municipal General Plan policies, would serve to reduce impacts from project construction and operational lifespan by requiring measures to prevent runoff and pollutants from leaving a project site wherever it was located within the StanCOG Region, and ensuring all non-point and point source discharges to surface water standards of the applicable NPDES Permits and Water Quality Control Plans such as the Basin Plan. These measures and permit requirements may not serve to eliminate impacts to water quality for certain individual projects; however, permit coverage would ensure that the transportation and land use projects implementing the proposed 2026 RTP/SCS would not violate any water quality standards or waste discharge requirements; therefore, impacts from violation of water quality standards or waste discharge requirements, or other impairment of water quality, would be less than significant.

Mitigation Measures

Mitigation measures are not required because this impact would be less than significant, as jurisdictions are required to follow the protection policies and ordinances as described above.

Threshold 2:	Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Impact HYD-2 TRANSPORTATION AND LAND USE PROJECTS IMPLEMENTING THE PROPOSED 2026 RTP/SCS WOULD SUBSTANTIALLY DECREASE GROUNDWATER SUPPLIES AND INTERFERE WITH GROUNDWATER RECHARGE SUCH THAT IT MAY IMPEDE SUSTAINABLE GROUNDWATER MANAGEMENT OF THE BASIN. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

In undeveloped conditions, natural vegetation can intercept and retain precipitation and limit surface runoff, and runoff that occurs over large areas is often unconcentrated and able to percolate down into the ground and replenish groundwater supplies naturally. When natural areas, including bare dirt, are covered over by impermeable surfaces such as pavement, this natural infiltration is obstructed. Runoff from such areas is concentrated and may increase volumes and flow rate greater than the natural infiltration rate of the surrounding soil, leading to saturated ground which cannot accept any more water and ultimately impair natural recharge due to loss of otherwise rechargeable rainwater to evaporation or discharge to streams that flow to areas unable to assist recharge.

Major proposed 2026 RTP/SCS transportation projects and the land use scenario envisioned by proposed 2026 RTP/SCS could affect groundwater supplies by incrementally reducing groundwater recharge potential. This reduction in groundwater recharge could occur because the impermeable surfaces associated with the proposed improvements would increase surface water runoff at the expense of natural infiltration. The proposed 2026 RTP/SCS encourages infill development within urbanized areas of the StanCOG region, and the land development envisioned could interfere with groundwater recharge by increasing the extent of impervious surfaces already present in this area. Urbanized areas are typically characterized by extensive impervious surfaces such as buildings and paved roads; as such, infill development would have minimal potential to further alter the rates and patterns of groundwater recharge to the overall basin. However, infill as well as any outlying

development on currently unpaved sites would result in a net increase of impervious surfaces in the area and could have associated impacts on site specific runoff and infiltration patterns.

Land Use Projects

As development under the proposed 2026 RTP/SCS occurs, site specific drainage features would be designed to retain, capture, and convey increased runoff in accordance with the city or county design standards and State requirements, such as the post-construction site control features and hydromodification requirements of the Statewide MS4 Permit and the Modesto Phase I MS4 Permit, as discussed under Section 4.10.2, *Regulatory Setting*, and Impact HYD-1, above. Compliance with these standards and regulations typically includes the use of LID features which, as described above, are designed to simulate natural processes of runoff and infiltration to minimize or avoid potential adverse effects associated with new development. Most land use development would not occur on currently permeable surface and uses that did would incorporate design features in order to reduce impacts to recharge; therefore, impacts to groundwater recharge from land use projects implementing the proposed 2026 RTP/SCS would be less than significant.

Transportation Projects

In addition to the development that would occur under the proposed 2026 RTP/SCS, transportation projects could also increase the extent of impervious surfaces. Many of the planned transportation projects, such as the addition of new lanes to existing roads or highways, would have negligible effect on the overall extent of impervious surfaces, as they would occur in areas already characterized by paved surfaces. In addition, transportation improvements often serve to increase infiltration and recharge as outdated (or nonexistent) runoff infrastructure and design is replaced by modern drainage and LID features. As with the infill development discussed above, transportation projects would also be implemented with project specific drainage plans for new features would be designed to retain, capture, and convey runoff in accordance with the city or county design standards, where applicable, and federal and State requirements. As many projects may serve to improve recharge in their area, or would be required to implement design features to reduce impacts to groundwater recharge, impacts to groundwater recharge from transportation projects proposed by the proposed 2026 RTP/SCS would be less than significant.

Groundwater Supply Management

Implementation of transportation and land use projects envisioned in the proposed 2026 RTP/SCS would result in both short-term and long-term impacts to groundwater management throughout the StanCOG region.

Activities would be implemented under California regulations governing use of groundwater, including SGMA, as well as groundwater provisions of applicable local general plans. Taken as a whole, these regulations and plans are intended to reduce groundwater use and subsequent overdraft of groundwater basins.

Regional municipal UWMPs provide strategies for reducing water usage and increasing available supply, such as investing in reclaimed water infrastructure and increasing user education and awareness of conservation practices UWMPs cannot impose any mandatory regulations or limits on water use, and any improvements in future proposals are currently speculative.

As described above, the high-priority basins in the StanCOG region are being managed by the four regional GSAs, each of which is responsible for developing and updating a GSP for its respective basin(s). As discussed in Section 4.10.1, *Setting*, and 4.10.2, *Regulatory Setting*, the GSPs for the basins in the region were all last updated in 2025, with all under periodic review. The GSPs are required to provide mechanisms that allow the sustainable use of groundwater, with growth projections considered.

During grading and general construction activities, water would be needed to suppress fugitive dust generated by construction equipment, for the mixing of concrete or other materials, for cleaning, and for a variety of other uses. Given the current StanCOG region-wide state of overdraft within the areas underlain by the four groundwater subbasins in the study area, and the likelihood that more than one project would be constructed simultaneously in areas with over-drafted basins, the short-term groundwater supply impact of projects implementing the proposed 2026 RTP/SCS would be significant.

Over the long term, the water use of the proposed transportation projects would primarily include irrigation uses for project landscaping components. Such use would be incrementally minor for individual projects. As most transportation improvements involve modification of existing facilities and would not result in a substantial increase in landscaped areas that require irrigation, some projects would not increase operational water use at all. Those projects which incorporate landscaping, including vegetating graded areas for slope stability and maintenance, for use as noise barriers, or as part of stormwater control, such water use may constitute a significant draw on regional supplies by full buildout at 2046 In addition, many of the transportation improvements in the proposed 2026 RTP/SCS involve construction of new facilities including the anticipated train station and airport fire station in Modesto. Thus, a long-term increase in water demand associated with new potable water facilities, restrooms, and landscaped areas might occur for these projects. Although several of the major urbanized areas throughout the StanCOG region currently use, or have the capability to use, reclaimed water for agricultural irrigation, park landscaping, and other uses, in more remote areas, reclaimed water sources are not located within a reasonable distance of landscaping needs. As such, it may not be economically feasible to convey reclaimed water to outlying areas.

For land use projects under the proposed 2026 RTP/SCS, including municipal and industrial projects, measures contained within the Statewide MS4 Permit and/or local General Plans may serve to reduce water use impacts. The Statewide MS4 NPDES Permit would require many projects to incorporate LID strategies such as stormwater reuse and onsite infiltration under Section E.12 (Post Construction Stormwater Management Program). General Plan policies and ordinances at the local and regional level, such as Green Building Codes, would encourage or require consideration of reclaimed water and drought-resistant landscaping, and AB 1881 would apply to most landscaped areas over 2,500 sf. These and similar measures may not apply to every planned improvement under the proposed 2026 RTP/SCS, and increased demands on groundwater supplies from additional land use projects are likely.

Per Assembly Bill 1881, water use efficiency will be a focus of the proposed 2026 RTP/SCS projects in order to meet drought resilience and preparedness. Where feasible, proposed 2026 RTP/SCS projects would enact measures contained either within the Model Landscape Ordinance or stricter local ordinances which will serve, in general, to reduce water usage but cannot eliminate it or reduce it to less than significant over the scale of a currently impacted groundwater subbasin.

Summary

Existing regulatory requirements at the local, State, and federal level include measures to minimize any increases in off-site stormwater runoff by encouraging on-site infiltration, which would minimize the potential reduction in groundwater recharge. Conformity with applicable GSPs and SGMA requirements in specific project areas is discussed under Impact HYD-5. As discussed in Section 4.10.2, *Regulatory Setting*, and further under Impact HYD-5, GSPs in the StanCOG region do not contain regulatory groundwater extraction limits; most require investigations, and some impose fees though local propositions and ordinances. The GSAs in general are part of lager regional management groups and coordination may increase in the future, and the existing GSPs espouse a variety of goals, options, and plans, but at present there is no overarching sustainable management structure for any of the basins.

Due to the current over-drafted state of the basins, the magnitude of change from the current conditions caused by any additional overdraft of groundwater supply would be significant. Therefore, short- and long-term water uses associated with the proposed 2026 RTP/SCS would substantially decrease groundwater supplies and thereby impede sustainable groundwater management. The following mitigation measures would reduce this impact as they are not included in most LID or conservation regulatory schemes that apply within the region.

Mitigation Measures

Transportation project sponsor agencies can and should implement the following mitigation measures for applicable transportation projects. The County and cities in the StanCOG region can and should implement these measures, where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

HYD-2(a) Construction Dust Suppression Water Supply

For all proposed 2026 RTP/SCS projects, where feasible, implementing agencies shall use reclaimed and/or recycled water for dust suppression during construction activities. This includes use of such reclaimed water in water trucks utilized for project construction occurring outside developed areas and away from water infrastructure which would otherwise provide such reclaimed water. This measure shall be noted on construction plans and shall be spot checked by the local implementing agency.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. These mitigation measures shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

HYD-2(b) Landscape Watering

In jurisdictions that do not already have an appropriate local regulatory program related to landscape watering, implementing agencies shall design proposed 2026 RTP/SCS projects that include landscaping shall be designed with drought tolerant plants and drip irrigation. When feasible, native plant species shall be used. In addition, landscaping associated with proposed improvements shall be maintained using reclaimed water when feasible. If reclaimed water could

feasibly be utilized for project landscape watering due to proximity of reclaimed water sources but is unavailable due to lack of connecting infrastructure, implementing agencies shall conduct an analysis of the upgrades needed to provide such infrastructure, which will include the potential for new connections to existing reclaimed water systems to provide reclaimed water to other nearby sources besides the proposed project in the analysis, and shall perform such steps as necessary to utilize available reclaimed water if feasible.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. These mitigation measures shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

Significance After Mitigation

Implementation of the above measures would reduce proposed Project impacts on water supply and groundwater overdraft in the StanCOG region. However, due to the programmatic nature of this proposed 2026 RTP/SCS EIR, a precise, project-level analysis of specific water demand and supply impacts associated with individual transportation and land use projects is not possible. The land use scenario envisioned by the proposed 2026 RTP/SCS along with transportation projects would result in the need for additional water supply, even with the implementation of mitigation measures listed above. Given the severe overdraft conditions of area groundwater basins, impacts would remain significant and unavoidable. No additional feasible mitigation measures to reduce this impact to a less than significant level is available.

Threshold 3: Would the project 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:

a. Result in substantial erosion or siltation on- or off-site;
b. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
c. 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
d. Impede or redirect flood flows?

Impact HYD-3 TRANSPORTATION AND FUTURE LAND USE PROJECTS IMPLEMENTING THE PROPOSED 2026 RTP/SCS WOULD NOT SUBSTANTIALLY ALTER THE EXISTING DRAINAGE PATTERN OF A SITE OR AREA IN RESULTING IN FLOODING OR IMPEDE FLOOD FLOWS, EXCEED THE CAPACITY OF STORMWATER SYSTEMS, OR PROVIDE ADDITIONAL POLLUTED RUNOFF. COMPLIANCE WITH THE EXISTING SUITE OF APPLICABLE POLICIES AND REGULATIONS MINIMIZE IMPACTS RELATED TO FLOODING, STORMWATER DRAINAGE CAPACITY, POLLUTED RUNOFF, AND REDIRECTION OR IMPEDANCE OF FLOOD. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Construction of transportation and land use projects under proposed 2026 RTP/SCS could result in the change of existing drainage patterns on individual project sites or within a project area, which could impact hydrology or water quality. Project grading and construction of impervious surfaces for transportation projects may alter existing drainage patterns by altering slopes and reducing infiltration. Additionally, land use projects included in the SCS land use scenario could also increase

impervious surfaces and develop structures that may alter existing drainages. Projects that include improvements on or near bridges may result in fill material being placed within stream channels, although it is unlikely that any of the future transportation projects would necessitate or result in actual alteration of a streambed or course as no entirely new bridges, river crossings, or alterations are proposed. Additionally, many projects would feature some level of risk of sediment loading and erosion which could further alter drainage patterns within the immediate area. Implementation of transportation and land use projects implementing the proposed 2026 RTP/SCS may increase stormwater flows, resulting in increased volume and/or velocity of stormwater runoff. Potential increases in stormwater volume and/or velocity could result in on- or off-site flooding.

However, planned transportation and land use projects would be designed to comply with existing State and local jurisdiction hydromodification requirements, including applicable County and municipal code sections related to stormwater runoff and drainages, such as curb and gutter design, and would be required to build drainage infrastructure if necessary to control and accommodate any increase in stormwater flows. Effects of increased polluted runoff have already been examined in this EIR, including under Impact HYD-1 specifically, and runoff from drainage changes would be included under those runoff impacts. Any streambed filling would be required to comply with the terms of any applicable USACE 404 or RWQCB permit which would include an analysis of any impacts from flooding or drainage alteration; in addition, County General Plan Policy WR 1.10 would apply to any projects in the unincorporated County involving stream filling or construction near streams. Oversight of projects within flood areas or affecting flood control infrastructure would be provided by the Stanislaus County Flood Control District and would help to minimize potential impacts related to alteration of future flood flows.

Land use projects under proposed 2026 RTP/SCS would require drainage control and hydromodification measures required either under an individual MS4 NPDES Permit or under the Region-Wide MS4 Permit and would include adherence to the Region-Wide MS4 Permit's hydromodification requirements and implementation of LID drainage control features if required under Program Requirement Part F. These measures would typically include incorporation of permeable paving, vegetated swales, infiltration retention basins, or other features that would minimize stormwater runoff and volume, and are selected from sets of feasible options based on project-specific site or engineering characteristics. Similar sets of requirements may further be imposed by local regulatory programs as discussed under 4.10.2, *Regulatory Setting*, above.

Compliance with the existing suite of applicable policies and regulations minimize impacts related to on- or off-site flooding, stormwater drainage capacity, polluted runoff, and redirection or impedance of flood, and such impacts would therefore be less than significant.

Mitigation Measure

Mitigation measures are not required because this impact would be less than significant, as jurisdictions are required to follow the protection policies and ordinances as described above.

Threshold 4:	Would the project in flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

Impact HYD-4 TRANSPORTATION AND LAND USE PROJECTS IMPLEMENTING THE PROPOSED 2026 RTP/SCS WOULD NOT RISK RELEASE OF POLLUTANTS DUE TO PROJECT INUNDATION IN FLOOD HAZARD, TSUNAMI, OR SEICHE ZONES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Transportation and land use projects implementing the proposed 2026 RTP/SCS could be subject to flooding hazards due to storm events and/or dam failure.

Flooding/Dam Failure

Transportation and land use projects implementing the proposed 2026 RTP/SCS in low-lying areas, 100-year and 500-year flood plains, and in proximity to waterways and/or dam inundation zones as depicted in Figure 4.10-1 may be subject to flood hazard. In general, throughout the StanCOG region, the dam inundation areas lie within natural floodplains; therefore, this analysis considers the effects of flooding and dam failure to be similar. In the StanCOG region, transportation improvements and future development projects under the land use scenario of the RTP/SCS would be most susceptible to flooding along the San Joaquin River, isolated stretches of the Tuolumne River, as well as on Orestimba, Salado, and Sand Creeks. The effects of flooding could include temporary inundation of a facility that impedes its use or causes long-term damage to the facility. Flooding may also cause immediate damage to roadways, bikeways, and bridges, particularly during high-velocity flood events that wash away or erode facilities, typically occurring adjacent to rising rivers or streams, or if located in a dam inundation area. Unpaved roads are particularly vulnerable, although any facility within the flood zone of a stream would be subject to impacts. Erosion caused by flooding can damage paved facilities, and bridge supports can be undermined or washed away.

There are several federal, state, and local programs to reduce flooding and control the flow of floodwaters, as well as to encourage proper flood planning within the region as discussed in the Regulatory Setting. The National Flood Insurance Act makes the purchase of flood insurance mandatory for properties in Special Flood Hazard Areas to prevent the loss of property from flooding. The Cobey-Alquist Floodplain Management Act encourages local governments to plan, adopt and enforce land use regulations for floodplain management to protect people and property from flood hazards. The California Division of Dam Safety inspects dams across the State, including in the StanCOG region, on a yearly schedule to ensure that they are performing and being maintained in a safe manner. Locally, the County and each city in the County have flood prevention ordinances requiring building standards in flood zones, as discussed further in 4.10.2, *Regulatory Setting*.

Land use changes envisioned within the SCS would mostly occur within developed areas or on the edges of such areas and would therefore be connected to existing or planned stormwater and flood control infrastructure and be required to conform with applicable regulations regarding runoff control and pollution control, including the mitigation measures proposed in this EIR. Such development would not substantially interfere with existing flood infrastructure without separate project-specific analysis of such impacts and the impacts of potential runoff to water quality have already been examined and mitigated to the greatest extent feasible. The impacts of urban development increase the risk of flood inundation and the release of pollutants due to such inundation due to the increase in impermeable surfaces. This impact would be less than significant. A greater risk of impact would arise from the transportation projects in less developed areas with

less extensive flood protection or capability to deal with potential polluted runoff from roadways during a flood event.

All such projects within floodplain or dam inundation areas would be required to adhere to any development restrictions or regulations, and projects within areas that are outside the floodplain areas would need to comply with hydromodification regulations of the municipal Flood Control or Public Works Department for drainage and stormwater flooding. The implementation of SWPPP plans and BMPs imposed through these or other regulatory plans, as well as the requirements to improve local stormwater flow capacity if needed, would serve to mitigate the risks of flooding to these projects to the greatest extent feasible. Unlike in an urban area, where floodwaters might put pollutants normally safe from rain flows at risk, except in extraordinary circumstances, the amount of pollution being washed off a roadway in a flood would be the same as that washed off in a heavy rain, as most pollutants on roads are contaminants like motor oil, metals from brake pads, trash, and similar debris. It is possible floodwaters would rise high enough to overcome drainage ditches, bioswales and similar pollution-capturing systems alongside roadways and bridges but such situations would distribute relatively few pollutants (those immediately extant on the road stretch being flooded) over a large area and would have a lesser impact than the long-term impacts of constant runoff from the roadways that is already mitigated by runoff control devices.

Although individual projects implementing the proposed 2026 RTP/SCS have the potential to adversely affect water quality at a project-specific level due to floodwater inundation, projects would adhere to existing regulations regarding risks from water quality pollutants and flood surges. The risks from polluted runoff during flood events would be similar to those of rain events on countryside roadways, and while greater in developed areas, would likewise be more regulated and surrounded by infrastructure better able to deal with such flows.

The types of development that would be most likely to result in release of pollutants during inundation include uses such as wastewater treatment plants, chemical manufacturing plants, or hazardous materials landfills. Generally, the proposed 2026 RTP/SCS envisions land development in already urbanized areas where wastewater treatment plants, landfills, and chemical manufacturing plants already exist to serve existing development. Accordingly, the land use projects envisioned in the proposed 2026 RTP/SCS would not substantially increase the risk of release of pollutants into the environment as a result of inundations.

Based on the above analysis, water quality impacts of the proposed 2026 RTP/SCS due to flooding or dam failure would be less than significant.

Tsunami and Seiche

The StanCOG region is not subject to tsunami hazards due to its distance from the Pacific Ocean. Seiches could be possible in the larger lakes and reservoirs after a major earthquake or similar event that causes large-scale disturbance to the waters. Due to the size of the lakes and reservoirs within the StanCOG region, seiche waves topping a dam and flowing downstream from a lake would be expected to be much smaller than the flood from dam failure or flooding from heavy rains; the primary difference would be the sudden nature of a seiche which may catch local populations and agencies unawares. The regulations and structures already in place to control development on floodplains and within dam inundation areas which serve to reduce impacts on floodplains would apply equally to reduce seiche impacts within the region as they would apply in the same locations. Therefore, impacts from tsunami or seiche behavior would be the same as impacts from other types of flooding and would be less than significant.

Mitigation Measures

Mitigation measures are not required because this impact would be less than significant, as jurisdictions are required to follow the protection policies and ordinances as described above.

Threshold 5:	Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impact HYD-5 TRANSPORTATION AND LAND USE PROJECTS IMPLEMENTING THE PROPOSED 2026 RTP/SCS COULD CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF A WATER QUALITY CONTROL PLAN OR SUSTAINABLE GROUNDWATER MANAGEMENT PLANS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Transportation and land use projects implementing the proposed 2026 RTP/SCS would affect water quality, but there is nothing in the proposed 2026 RTP/SCS which would prevent the RWQCB or any applicable local agency from carrying out the regulatory provisions of the Basin Plan. The transportation projects included in the proposed 2026 RTP/SCS would not conflict with the beneficial uses for water identified in the Basin Plan. For example, transportation projects would not interfere with the beneficial use of water for municipal and domestic supplies, agricultural supply, or wildlife habitat supply. Likewise, the land use scenario envisioned in the proposed 2026 RTP/SCS would not obstruct or conflict with beneficial uses of water in the water quality control plan. The land use scenario in the proposed 2026 RTP /SCS focuses on infill development and locating people and employment near transit. The infill characteristics of the land use scenario would generally be consistent with the past use of water in these areas, and supportive of the beneficial uses identified in the water quality control plan, such as municipal and domestic supplies. But this increase in development would result in an increase in demand for groundwater.

The stated primary goals of the Basin Plan include management of the 303(d) listed bodies, maintenance of water throughout the region for designated beneficial uses, and management of salt concentrations within the groundwater subbasins (RWQCB 2019). It is unlikely that proposed Project implementation would have any effect on the attainment of these main goals, and new development and improvements facilitated by the project would be required to maintain adherence with changes in the Basin Plan as they are planned in the future. Transportation or land use projects with a potential for affecting 303(d) impaired water bodies would be strictly regulated and are unlikely in general to produce the kinds of pollutants for which the bodies are mostly impaired, which tend to be the result of agriculture and not transportation or urban pollution. Impacts to beneficial uses of 303(d) impaired bodies would be expected to be less than significant in the same vein as impacts to listed pollutant levels. Similarly, to constituents of concern in the 303(d) bodies, various salts and constituents increasing ionic content and specific conductivity in receiving waters are more commonly associated with agriculture than with transportation (in areas that do not regularly freeze and require heavy applications of road salts). Should individual projects be likely to cause potential substantial impacts to the salinity of receiving waters, the RWQCB would have authority to mandate limitations or monitoring of discharges for salinity under the SWPPP required by the General Permit (or imposed by RWQCB for smaller projects deemed a threat for salinity).

The land use pattern included in the proposed 2026 RTP/SCS would generate new sources of wastewater, which would also be conveyed to wastewater treatment facilities in the region for secondary or tertiary treatment. Discharges of treated wastewater, also called effluent, from the treatment plants are regulated by the RWQCB and must meet water quality effluent limitations established in the applicable NPDES/WDR permits for point source discharges, as also discussed under Impact HYD-1, above. Thus, although implementation of the proposed 2026 RTP/SCS would

increase the volume of point-source wastewater discharges in the StanCOG region, required compliance and monitoring of effluent prior to discharge from treatment facilities would ensure Basin Plan compliance and impacts would be less than significant.

Implementation of the proposed 2026 RTP/SCS would not obstruct or hinder RWQCB or municipal agencies from fulfilling their regulatory duties and would be required to comply with all statues, codes, and regulations that applied. Further, the land use projects envisioned in the proposed 2026 RTP/SCS would not conflict with the stated goals of the Basin Plan. Therefore, impacts of the proposed project to implementation of any water quality control plan would be less than significant.

Regarding impacts on sustainable groundwater management plans, as discussed under Impact HYD-2, implementation of the proposed 2026 RTP/SCS would likely have an impact on groundwater levels and supply. As detailed under Section 4.10.2, *Regulatory Setting*, groundwater management within California in general falls under SGMA. Four overall GSPs are in effect within the StanCOG region at varying stages of either initial DWR review or revision after having been deemed 'Incomplete' by DWR.

As discussed under Section 4.10.2, *Regulatory Setting,* along with information-gathering, setting of fees, and determining sustainable yields, the primary regulatory tool provided to GSAs under SGMA is the ability to set and enforce area-specific mandatory groundwater pumping limitations through regular updates to GSPs for medium- and high-priority groundwater basins. DWR-approved GSPs are required to provide mechanisms that allow the sustainable use of groundwater, with growth projections considered. The current GSPs under review or revision are focused on measuring extractions to obtain the necessary data to determine sustainable yields and examining fees for their information gathering plans, as well as seeking public and stakeholder input.

Under present conditions, the Modesto GSP has set forth an estimated sustainable yield of 267,000 acre-feet per year and the Turlock GSP provides an estimated sustainable yield of 310,700 acre-feet per year throughout these subbasins. As discussed under Section 4.10.2, *Regulatory Setting,* the Delta Mendota GSP remains in development. As GSPs determine sustainable yields through their current cycles and begin to incorporate pumping limitations or other groundwater sustainability policies based on their determined sustainable yields, projects being implemented under the proposed 2026 RTP/SCS would be required to conform with any new applicable regulations supporting groundwater use and sustainable groundwater management. However, water use facilitated by the proposed 2026 RTP/SCS could obstruct any current GSP in the StanCOG region, as an increase in water demand could result from projects implementing the proposed 2026 RTP/SCS land use scenario (refer to Impact HYD-2). Although those projects would be subject to monitoring requirements as set forth in the applicable GSPs, overdraft of groundwater could still occur in conflict with adopted GSPs. Therefore, this impact would be significant and unavoidable.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement Mitigation Measures HYD-2(a) and HYD-2(b) above where applicable for projects implementing the proposed 2026 RTP/SCS with the potential to impact conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plans. Cities in the StanCOG region and the County can and should implement these measures, where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

Significance After Mitigation

Implementation of Mitigation Measures HYD-2(a) and HYD-2(b) would reduce proposed project impacts on water supply and groundwater overdraft in the StanCOG region as it relates to conflicts with or obstructs implementation of a water quality control plan or sustainable groundwater management plans. However, due to the programmatic nature of this proposed 2026 RTP/SCS EIR, a precise, project-level analysis of specific water demand and supply impacts associated with individual transportation and land use projects is not possible. The land use scenario envisioned by the proposed 2026 RTP/SCS along with transportation projects would result in the need for additional water supply, even with the implementation of mitigation measures listed above. Given the severe overdraft conditions of area groundwater basins, impacts would remain significant and unavoidable. No additional feasible mitigation measures to reduce this impact to a less than significant levels are available.

4.10.4 Cumulative Impacts

The cumulative impact analysis area for hydrology and water quality encompasses the watersheds and groundwater basins affected by the transportation projects and land use pattern envisioned in the proposed 2026 RTP/SCS, including creeks and drainages, floodplains, and aquifers. Information regarding these adjoining counties can be found in Chapter 3, *Environmental Setting, 3.3.4 Approach for Cumulative Analysi*s. This geographic extent is appropriate for the issue area of hydrology and water quality because it includes the watersheds applicable to the StanCOG region, and these watersheds are in general hydrologically connected. Any surface water quality impacts in one part of the watershed could potentially affect surface water quality elsewhere downstream in the watershed. In addition, this cumulative extent fully encompasses the groundwater Subbasins that occur within the StanCOG region, all of which have portions outside the StanCOG region and some of which (such as the Delta-Mendota and Eastern San Joaquin) extend over multiple counties and have a high level of importance to the State.

Cumulative development would increase erosion and sedimentation resulting from grading and construction, as well as changes in drainage patterns which could degrade surface and groundwater quality. In addition, new development would increase the generation of urban pollutants that may adversely affect water quality in the long term. As with the proposed 2026 RTP/SCS, individual construction projects within the cumulative impact area would be required to comply with applicable water quality regulations. Compliance with these existing requirements would reduce project level impacts throughout the cumulative impact area; as such, cumulative impacts related to water quality would be less than significant.

Development within the cumulative impact area would increase impervious surfaces and reduce groundwater infiltration. However, counties and cities in the cumulative impact area have regulatory requirements for stormwater management, effectively requiring minimization of stormwater runoff. Because the volume of runoff would be reduced by these regulations, as well as State and federal regulations, precipitation would be retained on individual project sites and infiltrated or treated and discharged to swales, creeks, or other drainages. The proposed 2026 RTP/SCS contribution to cumulative groundwater recharge impacts would not be cumulatively considerable. Development within the cumulative impact area would substantially decrease groundwater supplies by increasing the amount of overdraft throughout critically over-drafted basins, impeding sustainable groundwater management. The subbasins within the StanCOG region that are in critical overdraft extend far beyond its borders, and the Delta-Mendota in particular is still attempting to achieve unity of management structure and goals amongst the many GSAs and

GSPs extant within the subbasin. Therefore, cumulative impacts related to groundwater supply would be significant. Because the proposed 2026 RTP/SCS would substantially decrease groundwater supplies and interfere with groundwater recharge such that it may impede sustainable groundwater management of the basin, the proposed 2026 RTP/SCS contribution to this impact would be cumulatively considerable pre -mitigation. Mitigation measures HYD-2(a) and HYD-2(b) would reduce this impact, the contribution would remain cumulatively considerable after mitigation.

Development within the cumulative impact area could result in incremental modifications over time that can have cumulative adverse effects on drainage in the cumulative impact area by impeding and displacing flood flows, contributing incrementally to surface drainage runoff or degrading water quality, and the capacity of a drainage way to carry flood flows and/or the overall quality of the water may be cumulatively affected and a potentially significant cumulative impact could result. New development envisioned under the proposed 2026 RTP/SCS and associated impervious cover could also be potentially significant on a cumulative basis if it would contribute to a significant increase in the overall net impervious surface throughout the region which leads to changes in regional drainage patterns. Projects implementing the proposed 2026 RTP/SCS would be required to maintain pre-project hydrology and projects that would disturb more than one acre would be subject to requirements that prevent increase in runoff flows. These drainage requirements would minimize the contribution of the proposed 2026 RTP/SCS to cumulative drainage impacts, and the contribution of the proposed 2026 RTP/SCS to these impacts would not be cumulatively considerable.

Development within the cumulative impact area may occur within floodplains and floodways, and may include development of projects such as industrial parks, wastewater treatment plants, hazardous materials storage, or other infrastructure which may pose a release of pollutants as a result of inundation. Implementing agencies would conduct or require project-specific hydrology studies for projects proposed to be constructed within floodplains to demonstrate compliance with Executive Order 11988 (for federally funded projects), the National Flood Insurance Program, the National Flood Insurance Act, and the Cobey-Alquist Floodplain Management Act, as well as any further FEMA or State requirements that are adopted at the local level. These studies would identify project design features that reduce impacts on either floodplains or flood flows that would be required through the permitting process, as well as requiring measures to reduce the risk of pollutant release from inundation. Therefore, the cumulative effects of risk of polluted runoff from flood inundation would be less than significant.

All of the cumulative impact area lies within the RWQCB and falls under the Basin Plan. All development within the Basin Plan area must comply with the goals, beneficial uses, and 303(d) limitations outlined in the Plan, as well as falling under the authority of any orders issued by RWQCB. Therefore, the cumulative impact to obstruction of the Basin Plan is less than significant. There are dozens of individual GSAs within the cumulative impact area. Each development within the cumulative area would only fall under management actions required by the GSA's GSP approved within its individual area. Although each GSP is local, some of the groundwater basins within the cumulative impact area are hydrologically connected. Each individual basin has multiple GSPs covering different portions of the StanCOG region, which could create significant cumulative impacts among adopted GSPs, specifically through groundwater overdraft as identified in HYD-2. Although projects implementing the proposed 2026 RTP/SCS would only conflict with those GSPs in their basin, a significant groundwater impact anywhere within any one groundwater basin could result in significant cumulative impacts throughout the entire basin. A conflict with any singular

GSPs would therefore constitute a significant cumulative impact. As assessed above, with mitigation measures HYD-2(a) and HYD-2(b) incorporated the proposed 2026 RTP/SCS would still result in groundwater overdraft, constituting a conflict with applicable GSPs. Thus, the project would result in a cumulatively considerable contribution to the significant cumulative sustainable groundwater management impacts associated with regional groundwater overdraft conditions.

4.11 Land Use and Planning

This section evaluates impacts of the proposed 2026 RTP/SCS associated with physically dividing an established community and causing a significant environmental impact due to a conflict with a land use plan, policy, or regulation (including, but not limited to general plans and zoning ordinances) and result in a physical change to the environment not already addressed in the other resource chapters of this EIR.

4.11.1 Setting

a. Land Use Patterns

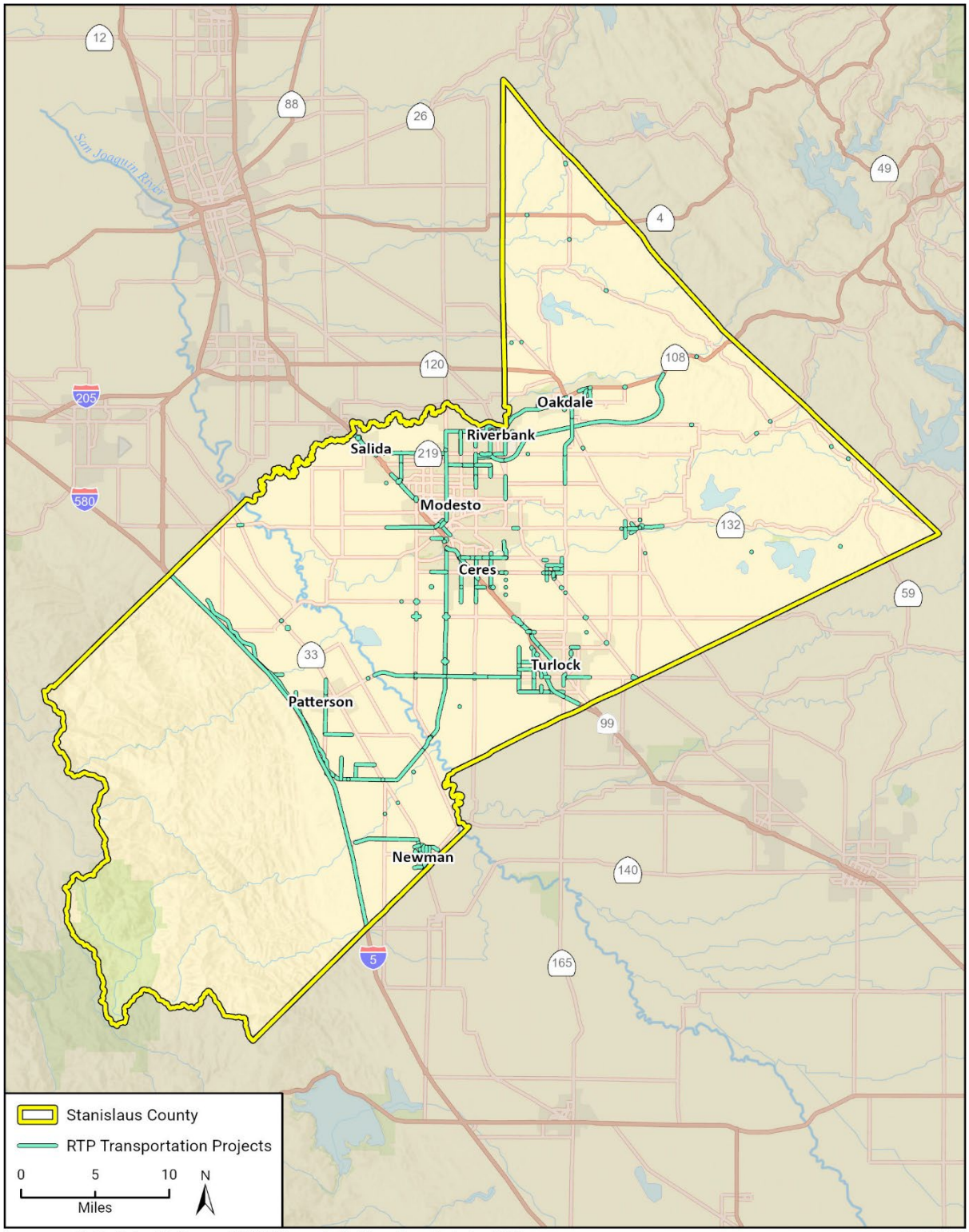
The StanCOG region encompasses the entirety of Stanislaus County, including nine incorporated cities and 13 unincorporated communities (Figure 4.11-1). Stanislaus County's population is approximately 555,765 (California Department of Finance 2025). The City of Modesto is the most populated area of the County, with approximately 219,765 residents, followed by Turlock and Ceres. Turlock's growth and development pattern is similar Modesto; however, Turlock is less densely populated. California State, Stanislaus is also located in Turlock. Ceres has grown considerably over the past 15 years; however, it is not as populated as Turlock and Modesto. Other cities within the County are generally smaller. Modesto has an established commercial downtown area surrounded by older residential neighborhoods. Each of these cities contain higher-density commercial and industrial uses. Riverbank, Hughson, Waterford, and Newman are primarily suburban areas that also contain agricultural uses. Each of these smaller cities have comparatively smaller downtown areas with older, established neighborhoods.

The StanCOG region is predominantly agricultural; much of the unincorporated County is either zoned or designated as agricultural land by the Stanislaus County General Plan. The County's major transportation routes include Interstate (I) 5, State Route (SR) 4, SR 33, SR 99, SR 108, SR 120, SR 132, SR 165, and SR 219. Incorporated cities along these routes are Patterson and Newman on SR 33; Modesto at the crossroads of SR 99, SR 108, and SR 132; Turlock and Ceres on SR 99; Riverbank on SR 108; Oakdale along SR 108 and SR 120; and Waterford on SR 132. Some unincorporated areas include Crows Landing on SR 33; Empire along SR 132, Keyes on SR 99; La Grange on SR 132; Salida on SR 99 and SR 219; and Westley on SR 33. The most populated area of the county is located along the SR 99 corridor. There are nine unincorporated communities within Stanislaus County: Crows Landing, Del Rio, Denair, Hickman, Keyes, Knights Ferry, La Grange, Salida, and Westley. Stanislaus County is divided into five individual Supervisorial Districts, each responsible for the communities within that specific district.

4.11.2 Regulatory Setting

Numerous federal, State, and local laws, regulations, policies, programs, plans, codes, and ordinances regulate land use in the StanCOG region. Local land use issues are regulated by the general plans, specific plans, and zoning ordinances adopted by the County and the various incorporated cities within the County. The County itself is landlocked bounded by San Joaquin County to the northwest, Calaveras and Tuolumne Counties to the northeast, Mariposa County to the east, Merced County to the southeast, Santa Clara County to the southwest, and Alameda County to the west. Thus, it is not within the immediate proximity of any local, state, or national costal zones.

Figure 4.11-1 StanCOG Planning Area



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24-16018 EPS
EIRFig 2 Project Location Overview

a. Federal Laws, Regulations, and Policies

Code of Federal Regulations Title 25

Federally recognized Native American tribes are considered domestic dependent nations with tribal sovereignty. "Tribal sovereignty" refers to tribes' right to govern themselves, define their own membership, manage tribal property, and regulate tribal business and domestic relations; it further recognizes the existence of a government-to-government relationship between such tribes and the federal government. In general, state, and local governments do not have "civil regulatory" jurisdiction (i.e., land use) on Indian Land, which is land held by the federal government in trust or restricted status for a tribe.

b. State Laws, Regulations, and Policies

Sustainable Communities Strategy and Climate Protection Act

Senate Bill (SB) 375, the Sustainable Communities Strategy and Climate Protection Act, is a California law passed in 2008 that requires each Metropolitan Planning Organization (MPO) to demonstrate, through the development of a Sustainable Communities Strategy (SCS), how its region will integrate transportation, housing, and land use planning to meet the greenhouse gas (GHG) reduction targets set by the State.

In addition to creating requirements for MPOs, it also created requirements for the California Transportation Commission and California Air Resources Board (CARB). Some of the requirements include the following:

- The California Transportation Commission must maintain guidelines for the travel demand models that MPOs develop for use in the preparation of their RTPs.
- CARB must develop regional GHG emission reduction targets for automobiles and light duty trucks for 2020 and 2035 by September 30, 2010. These targets were approved on September 23, 2010. CARB is tasked to update the regional targets every eight years, with the option of revising them every four years. The latest targets were approved on March 18, 2018 and went into effect October 1, 2018.
- Each MPO must prepare an SCS as part of its RTP to demonstrate how it will meet the regional GHG targets.
- Each MPO must adopt a public participation plan for development of the SCS that includes informational meetings, workshops, public hearings, consultation, and other outreach efforts.
- If an SCS cannot achieve the regional GHG target, the MPO must prepare an Alternative Planning Strategy showing how it would achieve the targets with alternative development patterns, infrastructure, or transportation measures and policies.
- Each MPO must prepare and circulate a draft SCS at least 55 days before it adopts a final RTP.
- After adoption, each MPO must submit its SCS to CARB for review.
- CARB must review each SCS to determine whether, if implemented, it would meet the GHG targets. CARB must complete its review within 60 days.

StanCOG measured an 11.1 percent reduction in GHG per capita emissions in 2020 (base year/2020) and projected an 11 percent reduction by 2035. The StanCOG region's GHG emissions target was an 11 percent per capita reduction by 2020 and a 10 percent reduction per capita by 2035 (CARB 2020).

These targets apply to the entire StanCOG region for all on-road light duty trucks and passenger vehicles emissions, and not to individual cities or sub-regions. The proposed 2026 RTP/SCS includes the years for which the regional targets are required (base year and 2035) and the proposed 2026 RTP/SCS also includes the additional scenario year of 2045 to comply with federal law. The proposed 2026 RTP/SCS meets the 2035 and would meet the 2045 GHG targets.

SB 375 specifically states that nothing in the law changes local governments local land use authorities. The proposed 2026 RTP/SCS provides a regional policy foundation that local governments may build upon if they so choose. The proposed 2026 RTP/SCS includes and accommodates the growth projections for the region. SB 375 also requires that forecasted development patterns for the region be consistent with the eight-year regional housing needs as allocated to member jurisdictions through the Regional Housing Needs Allocation process under State housing law.

In addition, this proposed 2026 RTP/SCS EIR lays the groundwork for the streamlined review of qualifying development projects. Qualifying projects that meet statutory criteria and are consistent with the proposed 2026 RTP/SCS are eligible for streamlined environmental review pursuant to CEQA under SB 375 and other laws.

Office of Land Use and Climate Innovation Research General Plan Guidelines

The 2017 General Plan Guidelines is the first comprehensive update to the guidelines since 2003 and addresses numerous new laws, requirements, resources and research that affect long-range planning in California. The 2017 update includes links to external documents and additional resources. This includes guidance for implementing the following legislation: Environmental Justice (SB 1000), Climate Change (SB 379), Sustainable Communities Strategies (SB 375), Flood Management (SB 5), Vehicle Miles Traveled (SB 743), Island or Fringe Communities (SB 244), Tribal Consultation (AB 52) and Local Hazard Mitigation Plans (AB 2140). Beyond State law requirements, the 2017 General Plan Guidelines also provide direction on topics including healthy communities, equitable and resilient communities, economic development, climate change and renewable energy. The 2025 General Plan Guidelines Comprehensive Update is estimated to be adopted in Spring 2027.

Smart Mobility 2010 Framework

The Smart Mobility Framework, formally known as Smart Mobility 2010: A Call to Action for the New Decade, was prepared by Caltrans in partnership with the U.S. Environmental Protection Agency, the Office of Land Use and Climate Innovation, and the California Department of Housing and Community Development to address both long-range challenges and short-term programmatic actions to implement multi-modal and sustainable transportation strategies in California. The Smart Mobility Framework helps guide and assess how well various levels of plans, programs, and projects (e.g., RTPs, General Plans, specific development proposals) meet a definition of "smart mobility." The Smart Mobility Framework is intended to move people and freight while enhancing California's economic, environmental and human resources by emphasizing:

- Convenient and safe multimodal travel
- Speed suitability
- Accessibility
- Management of the circulation network
- Efficient use of land

Planning and Zoning Law

California Government Code Section 65000, et seq., regulates the substantive and topical requirements of general plans. State law requires each city and county to adopt a general plan "for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning." The California Supreme Court has called the general plan the "constitution for future development." The general plan expresses the community's development goals and embodies public policy relative to the distribution of future land uses, both public and private.

Zoning authority originates from city and county police power and from the Planning and Zoning Law, which sets minimum requirements for local zoning ordinances. Zoning ordinances must be consistent with the general plan and specific plans. The consistency requirement does not apply to charter cities other than Los Angeles unless the charter city adopts a consistency rule.

Cortese Knox Hertzberg Local Government Reorganization Act

The Cortese Knox Hertzberg Local Government Reorganization Act is the most substantial reform to local government reorganization law since the 1963 statute that created a Local Agency Formation Commission in each county. The law established procedures for local government changes of organization, including city incorporation, annexation to a city or special district, and consolidation of cities or special districts (California Government Code Section 56000, et seq.). Local Agency Formation Commissions have numerous powers under the Act, but those of prime concern are the power to act on local agency boundary changes and to adopt spheres of influence for local agencies. The law also states that to update a sphere of influence, Commissions are required to first conduct a review of the municipal services provided in the StanCOG region.

Senate Bill 743

SB 743 changed the way that public agencies evaluate the transportation impacts of projects under CEQA, recognizing that roadway congestion, while an inconvenience to drivers, is not itself an environmental impact (see Pub. Resource Code, Section 21099, subd. (b)(2)). SB 743 provides opportunities to streamline CEQA for qualifying urban infill development near major transit stops in metropolitan regions statewide. A transit-oriented infill project can be exempt from CEQA if consistent with a specific plan for which an EIR was prepared, and consistent with the use, intensity, and policies of an SCS or Alternative Planning Strategy that is certified by the CARB as meeting its greenhouse gas reduction targets. A city or county may designate an "infill opportunity zone" by resolution if it is consistent with the general plan and any applicable specific plan and is a transit priority area within the adopted SCS or Alternative Planning Strategy. This infill opportunity zone is then exempt from level of service standards in the congestion management plan. Furthermore, SB 743 specifies that parking impacts are not considered significant impacts on the environment under CEQA.

Senate Bill 330

SB 330, the Housing Crisis Act of 2019, was enacted to accelerate housing production in high-need areas by limiting local actions that reduce housing capacity. It prohibits downzoning, housing moratoria, and new development standards that constrain housing. The law streamlines approvals by capping public hearings at five and requiring timely decisions on housing projects. It also locks in zoning and development standards at the time a preliminary application is submitted, providing

greater certainty for developers. These provisions aim to reduce delays and regulatory barriers for housing, especially in jurisdictions with severe housing shortages.

Assembly Bill 130

Effective June 30, 2025, AB 130 introduces substantial reforms to streamline housing development under CEQA. The bill establishes a statutory CEQA exemption for qualifying infill housing projects located in urban areas up to 20 acres, provided they meet specific criteria such as adjacency to urban uses and avoidance of historic or environmentally sensitive sites. This exemption is designed to reduce environmental review burdens for projects that align with local zoning and planning standards. AB 130 also makes permanent several provisions of the Permit Streamlining Act, including timelines for application completeness and project approval, and limits the number of public hearings for qualifying housing projects. Additionally, the bill codifies elements of the Housing Accountability Act and SB 330, including protections for vested rights and restrictions on growth control measures. A notable provision is the statewide freeze on residential building code updates from October 1, 2025, through June 1, 2031, which aims to reduce regulatory uncertainty and development costs. AB 130 also enhances the role of the California Department of Housing and Community Development in overseeing Regional Housing Needs Allocation methodologies, further aligning local planning efforts with state housing goals.

Senate Bill 131

SB 131, effective June 30, 2025, complements AB 130 by focusing on CEQA streamlining for infrastructure and public-serving projects. It introduces a new review pathway for "near miss" projects—those that narrowly fail to qualify for a CEQA exemption due to a single disqualifying condition. Under this provision, CEQA review is limited to the environmental effects of that specific condition, and such projects are exempt from analyzing alternatives or growth-inducing impacts. SB 131 also creates or expands CEQA exemptions for a range of project types, including advanced manufacturing facilities on industrial-zoned land, broadband infrastructure in public rights-of-way, updates to climate adaptation plans, High-Speed Rail maintenance facilities, and local rezoning actions that implement Housing Element commitments. Additionally, the bill mandates biennial updates to *CEQA Guidelines* to improve clarity and address ambiguities. These changes reflect a broader policy shift toward facilitating development while maintaining targeted environmental protections, and they are expected to significantly impact the planning and approval processes for both housing and infrastructure projects across California.

Quimby Act

The 1975 Quimby Act (California Government Code Section 66477) authorized cities and counties to pass ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. The act states that the dedication requirement of parkland can be a minimum of 3 acres per thousand residents or more, and up to 5 acres per thousand residents if the existing ratio is greater than the minimum standard. Revenues generated through in-lieu fees collected under the Quimby Act cannot be used for the operation and maintenance of park facilities. In 1982, the act was substantially amended. The amendments further defined acceptable uses of and restrictions on the use of Quimby Act funds, provided acreage/population standards and formulas for determining the exaction, and indicated that the exactions must be closely tied to a project's impacts as identified through studies required by CEQA.

Airport Land Use Compatibility Plans

The California State Aeronautics Act requires counties with public-use airport to create an Airport Land Use Commission (ALUC) and prepare an airport land use compatibility plan (ALUCP) for each public use airport. The purpose of the code is to "protect public health, safety and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses" (Public Utilities Code Section 21670 et. seq.). Cities and counties with jurisdiction within the areas included in an ALUCP (i.e., Airport Influence Area) must submit their general and specific plans to the ALUC for review upon adoption or amendment to determine whether they are consistent with the ALUCP. The Stanislaus County ALUCP provides compatibility policies for the Modesto City-County Airport and the Oakdale Municipal Airport (Stanislaus County 2016). The Merced County ALUCP provides such policies for the Turlock Municipal Airport (Merced County ALUC 2012).

State Open Space Standards

State planning law (Government Code Section 65560) provides a structure for the preservation of open space by requiring every city and county in the State to prepare, adopt, and submit to the Secretary of the Resources Agency a "local open-space plan for the comprehensive and long-range preservation and conservation of open-space land within its jurisdiction." The following open space categories are identified for preservation:

- **Open space for public health and safety**, including, but not limited to, areas that require special management or regulation because of hazardous or special conditions;
- **Open space for the preservation of natural resources**, including, but not limited to, natural vegetation, fish and wildlife, and water resources;
- **Open space for resource management and production**, including, but not limited to, agricultural and mineral resources, forests, rangeland, and areas required for the recharge of groundwater basins;
- **Open space for outdoor recreation**, including, but not limited to, parks and recreational facilities, areas that serve as links between major recreation and open space reservations (such as trails, easements, and scenic roadways), and areas of outstanding scenic and cultural value; and
- **Open space for the protection of Native American sites**, including, but not limited to, places, features, and objects of historical, cultural, or sacred significance, such as Native American sanctified cemeteries, places of worship, religious or ceremonial sites, or sacred shrines located on public property (further defined in PRC Sections 5097.9 and 5097.993).

Senate Bill 1425 Open Space Element Update

AB 1425, which passed in September of 2022, states that by January 1, 2026, every city and county shall review and update its local open-space plan to address the following components:

- Access to open space for all residents in a manner that considers social, economic, and racial equity, correlated with the environmental justice element or environmental justice policies in the general plan, as applicable.
- Climate resilience and other co-benefits of open space, correlated with the safety element.
- Rewilding opportunities, correlated with the land use element.

c. Local Laws, Regulations, and Policies

The following section focuses on the key plans that regulate land use in the StanCOG region, which are the county and city general plans and the ALUCPs. A city or county may also provide for land use planning by developing community or specific plans for smaller, more specific areas within its jurisdiction. These more localized plans provide focused guidance for developing a specific area, with development standards tailored to the area, as well as systematic implementation of the general plan.

Non-Motorized Transportation Plan

The 2021 Stanislaus Non-Motorized Transportation Plan outlines a comprehensive, equity-focused strategy to improve walking, biking, and other active transportation across the region by reducing reliance on cars, lowering greenhouse gas emissions, and expanding safe, connected mobility options. The plan identifies key issues such as limited infrastructure, safety concerns, network gaps, and inequities affecting disadvantaged communities and proposes a regional "backbone network" with prioritized investments, including 250 miles of bikeways, sidewalk improvements, and over 1,000 safety upgrades (StanCOG 2021).

Stanislaus County General Plan

The Stanislaus County General Plan was adopted in August 2016 (Stanislaus County 2016). The General Plan has a 20-year planning horizon through 2035. The Land Use Element of the General Plan designates the type, intensity, and general distribution of uses of land for housing, business, industry, open space, agriculture, natural resources, recreation, education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private uses of land. A summary of the goals from the Land Use Element are as follows:

- **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.
- **Goal Two**. Ensure compatibility between land uses.
- **Goal Three.** Foster stable economic growth through appropriate land use policies.
- **Goal Four.** Ensure that an effective level of public service is provided in unincorporated areas.
- **Goal Five.** Complement the general plans of cities within the County.
- **Goal Six**. Provide for direct citizen participation in land-use decisions involving the expansion of residential uses into agricultural and open-space areas in order to encourage compact urban form and to preserve agricultural land.

City of Ceres General Plan

The City of Ceres General Plan 2035 was adopted on February 1997 and updated in May 2018. Approximately 39 percent of land within the City and 46 percent of land in the larger Planning Area is utilized for residential use. Residential uses are increasingly mixed in the City's downtown and in some areas along SR 99; there are larger areas that consist of single-family residential uses in newer neighborhoods north, northeast, and southeast of downtown. The City's public facilities and parks are located throughout residential neighborhoods within the City (City of Ceres 2018).

City of Hughson General Plan

The Hughson General Plan was adopted on December 12, 2005. The City of Hughson can be characterized as a residential community. It has a downtown area that is mostly surrounded by single-family residential neighborhoods. However, the few employment centers that are within the City are located in the downtown and industrial areas (City of Hughson 2005).

City of Modesto General Plan

The City of Modesto Urban Area General Plan was adopted on October 2008 and updated in 2019. The General Plan's community growth strategy divides the City into three areas: the Downtown area, the Baseline Developed Area, and the Planned Urbanizing Area. The Downtown area is a mixture of residential, commercial, and industrial uses. Although the Baseline Developed Area is located within City limits, it is mostly developed but contains vacant areas. The Planned Urbanizing Area is mostly outside of city limits and is predominately vacant or developed for agricultural use (City of Modesto 2019).

City of Newman General Plan

The City of Newman 2030 General Plan was adopted on April 10, 2007. The City of Newman has a historic downtown area that is mostly surrounded predominately by single family residential neighborhoods, then agricultural ranch land. Downtown consists of one- and two-story commercial buildings. East of Highway 33, from the center of town to the southern City limits, land uses are almost exclusively industrial and commercial (City of Newman 2007).

City of Oakdale General Plan

The Oakdale 2030 General Plan was adopted in August 2013. The downtown business district goal is continued renewal that will transform the area as more pedestrian oriented. Commercial corridors along the City's major roadways, with an assorted pattern of; The General Plan emphasizes intensification, revitalization, and expansion of these commercial areas. Industrial land uses are concentrated in the southern portion of the City. The Stanislaus River open space corridor is located on the northern edge of the City. Of note is a Greenbelt consisting of agricultural and rural lands separating Oakdale from Riverbank and the expanding Modesto area (City of Oakdale 2013).

City of Patterson General Plan

The City of Patterson 2010 General Plan was adopted in November 2010. Highway services are concentrated on the west side of the City along I-5. Further to the east, central Patterson consists of a business park and single-family neighborhoods. Downtown Patterson consists of a mixture of industrial, downtown residential, and commercial land uses. East Patterson is primarily commercial with low-density residential neighborhoods (City of Patterson 2010).

City of Riverbank General Plan

The City of Riverbank General Plan 2005-2025 (adopted 2009, amended 2014) intent is to enhance the City of Riverbank's quality of life as the City grows and evolves. Riverbank City Hall, Riverbank Library, the Stanislaus Consolidated Fire Protection District station, and Riverbank Police Services are public facilities located downtown. The west and east planning areas are designated as agriculture resource reserve areas. The city primarily consists of low-density residential land use. Industrial uses are limited to the southeastern portion of the City, and there are community

commercial uses in the south and east areas of the city. Of note, there is a greenbelt starting in the northeast corner of the City which extends through central, eastern, and southern Riverbank (City of Riverbank 2014).

City of Turlock General Plan

The Turlock General Plan was adopted in September 2012. The City's growth has mainly occurred north of the downtown area and east of the railroad. Turlock's residential development has occurred north of Monte Vista Avenue on the east side of the railroad. Northwest Turlock is a major commercial area, and the City has allocated over 2,600 acres for industrial and business land uses west of SR 99 (City of Turlock 2012).

City of Waterford General Plan

Waterford's Vision 2025 General Plan was adopted in October 2006. The General Plan's defines policies and goals is to manage future growth, development, and conservation of resources through 2025. The Land Use Element dictates the implementation actions for new development which will occur. Residential land uses comprise the majority of the City. Downtown Waterford contains a mixture of multi-family, commercial, and public government uses. Industrial zones are located solely in the northwest area of the City. All other land use plans and regulations and capital improvement plans, including specific plans, redevelopment plans, zoning, subdivision, and capital improvement decisions, must be consistent with the General Plan (City of Waterford 2006).

4.11.3 Impact Analysis

a. Methodology and Significance Thresholds

The proposed 2026 RTP/SCS was assessed to determine whether the transportation projects and SCS land use pattern and strategies could physically divide an established community or conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. This review focused on the process used by StanCOG to develop regional growth projections, the transportation network and programs, housing needs estimates, and the SCS land use strategies. This evaluation of land use assumes that construction and development under the proposed 2026 RTP/SCS would adhere to applicable federal, State, and local regulations as relevant for individual projects.

Appendix G of the *CEQA Guidelines* identifies the following criteria for determining whether a project would have a significant impact on land use:

1. Physically divide an established community; and/or
2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation (including, but not limited to, the General Plan or Zoning Ordinance) adopted for the purpose of avoiding or mitigating an environmental effect and result in a physical change to the environment not already addressed in the other resource chapters of this EIR.

Impacts related to conflicts with habitat conservation plans or natural community conservation plans are discussed in Section 4.4, *Biological Resources*. Impacts related to population and housing are discussed in Section 4.13, *Population and Housing*.

b. Project Impacts and Mitigation Measures

The following section discusses potential impacts and mitigation measures that may be associated with transportation improvements and the land use scenario contained within the proposed 2026 RTP/SCS. Impacts and associated mitigation measures would apply in the StanCOG region and all cities within the County. Due to the programmatic nature of the proposed 2026 RTP/SCS, a precise, project level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the proposed 2026 RTP/SCS could result in the impacts as described in the following section.

Threshold 1: Would the project physically divide an established community?

Impact LU-1 IMPLEMENTATION OF PROPOSED TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD NOT PHYSICALLY DIVIDE AN ESTABLISHED COMMUNITY. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

In general, the proposed 2026 RTP/SCS implements roadway projects and transportation improvements that would decrease traffic congestion, increase mobility, and improve alternative transportation infrastructure. Construction of additions to existing facilities and new facilities routinely involve temporary disruptions within established communities such as lane or road closures along roads and highways and service delays or detours for bus routes and passenger rail. Local jurisdictions routinely require traffic control plans and related measures to ensure that construction activities accommodate vehicular and pedestrian access, such as designating alternate routes or scheduling disruptive activities late at night or on weekends. With these controls, construction activities would not result in the physical division of established communities.

The proposed 2026 RTP/SCS intends to improve the system for all modes of transit so vehicles and non-motorized transit can use the streets simultaneously and safely. As a result, roads would be expanded, widened, and reconstructed under the proposed 2026 RTP/SCS. These and/or other planned projects would include improvements to bicycle and pedestrian facilities. Because the existing roads subject to expansion or widening are already part of the communities in which they are located, such projects would not have the potential to divide those communities. The projects are intended to achieve goals of the proposed 2026 RTP/SCS to increase mobility and decrease VMT, therefore the projects should result in bringing communities closer together rather than dividing them. New roadway, roadway rehabilitation projects, bridge repairs, bicycle lanes, public transportation projects and ADA accessibility projects included in the proposed 2026 RTP/SCS. Collectively, these are long-planned projects that are typically included in local circulation elements. As such, they have been anticipated and accommodated in local land use planning and would be integrated into the community infrastructure. These projects are expected to increase community connectivity and mobility and decrease congestion and GHG emissions.

The existing and new road projects contained in the proposed 2026 RTP/SCS originate from either local circulation plans or state projects supported by cities and counties. The projects have therefore been coordinated with and integrated into local plans that support and connect communities consistent with state planning law.

The land use scenario envisioned by the proposed 2026 RTP/SCS would encourage infill, mixed use, and transit-oriented development within existing urbanized areas along transportation corridors, although development could still occur in more suburban and rural areas as well. The land use

scenario follows adopted city plans, taking into consideration recent updates and buildout scenarios, following existing regulations to promote infill development in existing communities along with planned growth in other areas. In general, this infill type of development would not divide a community; rather it would promote the development of existing vacant or underutilized properties. Other types of development would be consistent with the localized planning as well. This infill development would locate people closer to existing employment, goods and services within established communities. Buildout of the SCS land use scenario would result in more compact development in those established communities. Implementation of the 2026 RTP/SCS land use strategies would integrate future development into existing communities along the existing transportation network and would therefore not physically divide established communities. Many proposed transportation projects, such as expansion of transit services or the building of active transportation infrastructure, are intended to improve mobility and accessibility and would, as a result, improve community connectivity. Based on the above analysis, the transportation and land use projects implementing the 2026 RTP/SCS would not divide established communities. Therefore, impacts related to dividing an established community would be less than significant.

Mitigation Measures

Mitigation measures are not required because this impact would be less than significant.

Threshold 2:	Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation (including, but not limited to, the General Plan or Zoning Ordinance) adopted for the purpose of avoiding or mitigating an environmental effect and result in a physical change to the environment not already addressed in the other resource chapters of this EIR?

Impact LU-2 THE PROPOSED 2026 RTP/SCS WOULD NOT CAUSE A SIGNIFICANT ENVIRONMENTAL IMPACT DUE TO A CONFLICT WITH ANY LAND USE PLAN, POLICY, OR REGULATION AND RESULT IN A PHYSICAL CHANGE TO THE ENVIRONMENT NOT ALREADY ADDRESSED IN THE OTHER RESOURCE CHAPTERS OF THIS EIR. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT AFTER IMPLEMENTATION OF MITIGATION DISCUSSED THROUGHOUT THIS EIR.

In planning for projected growth in the region, the proposed 2026 RTP/SCS represents a voluntary growth strategy that retains local government land use autonomy. Neither SB 375 nor any other law requires local member agency general plans or land use regulation to implement the land use policies in the proposed 2026 RTP/SCS. Thus, implementation of the proposed 2026 RTP/SCS is dependent on local government policy decisions and voluntary action. The proposed 2026 RTP/SCS includes a list of planned and programmed projects including local and regional capital improvements that have been anticipated or accounted for in local general plans. These plans are summarized above in the Regulatory Setting section.

The vision for the proposed 2026 RTP/SCS is built on a set of integrated policies, strategies, and investments to maintain and enhance the transportation system to meet the diverse needs of the region through 2049. The proposed 2026 RTP/SCS was prepared with the specific intent to comply with the SB 375 goal to reduce GHG emissions. The proposed 2026 RTP/SCS was assessed to determine whether the SCS land use pattern and strategies could conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. This review focused on the process used by StanCOG to develop regional growth projections, the transportation network and programs, housing needs estimates and the SCS land use strategies. The proposed 2026 RTP/SCS transportation projects would encourage a multi-modal transportation

network in high quality transit areas and public transportation improvements, while the envisioned land use scenario encourages mixed-use and infill development. Broadly speaking, these land use patterns reduce the distance between trip destinations. These goals are highlighted throughout all regional and local plans including, but not limited to, General Plans or Zoning Ordinances across all jurisdictions within StanCOG.

In addition, the proposed 2026 RTP/SCS would help the region reach its GHG emission reduction targets established by CARB under AB 32, SB 32, and SB 375, as discussed in Section 4.8, *Greenhouse Gas Emissions and Climate Change*. The proposed 2026 RTP/SCS encourages development patterns in areas to reduce automobile traffic, automobile congestion, and commute lengths. The proposed 2026 RTP/SCS would meet the CARB-established goal of a net zero per capita increase in GHG emissions from passenger vehicles and light trucks in 2035 (see Section 4.8, *Greenhouse Gas Emissions and Climate Change).*

At the local level the proposed 2026 RTP/SCS builds on and incorporates regional and local planning efforts of its member agencies, including local general plans and the Non-Motorized Transportation Plan.

The land use scenario envisioned in the proposed 2026 RTP/SCS was developed in close coordination with StanCOG member agency planning staff and also builds on local general plans and general plan updates currently in process or completed. Central to the SCS is a land use plan identifying the general location of uses, residential densities, and building intensities within the region. Starting with land uses allowed by existing, adopted local General Plans, the land use plan envisioned by the proposed 2026 RTP/SCS provides for intensification of residential and commercial land uses, investment in alternative transportation modes, mixed-use neighborhoods in urban areas, and a compact development pattern within existing mixed-use centers and in new neighborhoods. In addition, the proposed 2026 RTP/SCS would help the region reach its GHG emission reduction targets established by CARB under AB 32, SB 32, and SB 375, as discussed in Section 4.8, *Greenhouse Gas Emissions and Climate Change*.

The proposed 2026 RTP/SCS was assessed to determine whether the SCS land use pattern and strategies could conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. This review focused on the process used by StanCOG to develop regional growth projections, the transportation network and programs, housing needs estimates, and the SCS land use strategies.

The SCS land use and transportation projects envisioned within the proposed 2026 RTP/SCS would result in conflicts with land use plans, policies, or regulations. Future projects under the transportation or land use scenario envisioned by the 2026 RTP/SCS could, in some cases, conflict with a local plan if they conflict with permitted land use types, locations, and intensities; impact natural, cultural, or scenic resources; impact access to recreational opportunities; or worsen existing hazards. A project that is not consistent with these policies (e.g., policies that do not allow transportation infrastructure within environmentally sensitive habitat areas or conversion of prime/working agricultural lands) is not approvable. To resolve a project's inconsistency with local policies, the applicant must either revise the proposed project or work with the applicable local government to amend the general plan element(s), so long as the proposed project/amendment can demonstrate consistency with local general plan(s) and applicable regulations.

Even with this coordination, due to the number of jurisdictions that are contained within the StanCOG region, future projects under the transportation or land use scenario envisioned by the 2026 RTP/SCS could conflict with key policies or regulations adopted to avoid or mitigate

environmental impacts, as presented throughout this EIR. Future projects under the transportation or land use scenario envisioned by the 2026 RTP/SCS would be required to undergo project-level environmental analysis to address potential environmental impacts. The envisioned land use scenario would not result in additional impacts beyond the findings of significant and unavoidable impacts as already analyzed in respective environmental issue area sections of this EIR. Therefore, the SCS land use and transportation projects envisioned within the 2026 RTP/SCS would result in conflicts with land use plans, policies, or regulations. However, the proposed 2026 RTP/SCS would not result in a physical change to the environment that has not already been addressed in the other resource chapters of this EIR. The impacts of any such conflicts are described throughout those sections of the EIR.

Mitigation Measures

Mitigation measures are provided for applicable resources throughout their respective environmental issue area sections of the EIR to reduce impacts. No additional mitigation is required for this impact.

Significance After Mitigation

This impact would be less than significant after implementation of the mitigation measures identified in Chapter 4 of this EIR.

4.11.4 Cumulative Impacts

The cumulative analysis presented below relies on a projections-based approach, using regional growth forecasts for the StanCOG region and adjoining counties to evaluate cumulative conditions. Impacts of the 2026 RTP/SCS are added to the impacts of growth and development in the adjoining counties, and a determination is made as to whether cumulative impacts would be significant, and whether the 2026 RTP/SCS incremental contribution would be cumulatively considerable. Information regarding these adjoining counties can be found in Chapter 3, *Environmental Setting, 3.3.4 Approach for Cumulative Analysis*.

Intensified development of cities in the StanCOG region could influence land uses in adjoining counties. Accordingly, the cumulative impact analysis area for land use and planning consists of the StanCOG region and adjoining counties. Future development in this region that could divide an established community or conflict with any major land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect is considered in the analysis. This cumulative extent is used to evaluate potential impact from the combined growth in this region.

The StanCOG region shares a border with seven counties: Alameda, Calaveras, Mariposa, Merced, San Joaquin, Santa Clara, and Tuolumne. Land between each of these counties and the StanCOG region is undeveloped agricultural land, grazing land, or open space. The existing land use scenarios in the StanCOG region would continue to develop the region and could result in expansion of urban areas into undeveloped land. However, because there are no urban growth areas at or near the boundaries of the StanCOG region, cumulative impacts would be less than significant. Implementation of the proposed 2026 RTP/SCS would concentrate development in infill areas and as such, would not result in the division of established communities. Therefore, cumulative impacts related to physically dividing an established community would be less than significant.

Each of the seven neighboring counties have adopted general plans that direct new growth to existing developed areas, strongly support agricultural land preservation, and are part of other

regional transportation plans. These general plans include goals, policies and programs adopted for the purpose of avoiding or mitigating environmental effects. Development under these existing plans would, therefore, be required to comply with existing goals, policies, and programs within existing plans. Cumulative impacts would be less than significant.

Implementation of the proposed 2026 RTP/SCS would result in significant and unavoidable impacts in several environmental issue areas, as outlined in Sections 4.1 through 4.16 of this EIR. The transportation projects and envisioned land use scenario would not result in additional impacts beyond the findings of significant and unavoidable impacts already analyzed in respective environmental issue area sections within this EIR and would not result in a physical change to the environment that has not already been addressed in this EIR. Implementation of mitigation as listed throughout resource chapters of this EIR would reduce impacts of the proposed 2026 RTP/SCS. Implementation of the proposed 2026 RTP/SCS would not result in a cumulatively considerable contribution to a significant cumulative impact.

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4.12 Noise

This section evaluates potential noise and vibration impacts from development facilitated by the proposed 2026 RTP/SCS.

4.12.1 Setting

a. Overview of Noise and Vibration

The following discussion describes the characteristics of noise and vibration. These characteristics are used to assess potential impacts at sensitive land uses. Noise- and vibration-sensitive land uses include locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, senior facilities, schools, hospitals, guest lodging, libraries and some passive recreation areas are examples of typical noise- and vibration-sensitive land uses.

Noise

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (California Department of Transportation [Caltrans] 2013).

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response, which is most sensitive to frequencies around 4,000 Hertz and less sensitive to frequencies around and below 100 Hertz (Kinsler, et. al. 1999). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dBA; reducing the energy in half would result in a 3 dBA decrease (Crocker 2007).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not “sound twice as loud” as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible (8 times the sound energy); and that an increase (or decrease) of 10 dBA sounds twice (half) as loud ([10.5x the sound energy] Crocker 2007).

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in level as the distance from the source increases. The manner in which noise reduces with distance depends on factors such as the type of sources (e.g., point or line, the path the sound will travel, site conditions, and obstructions). Noise levels from a point source typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance (e.g., construction, industrial machinery, ventilation units). Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013). The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site, such as a parking lot or smooth body of water, receives no additional ground attenuation and the changes in noise levels with distance (drop-off rate) result from simply the geometric spreading

of the source. An additional ground attenuation value of 1.5 dBA per doubling of distance applies to a soft site (e.g., soft dirt, grass, or scattered bushes and trees) (Caltrans 2013). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this "shielding" depends on the size of the object and the frequencies of the noise levels. Natural terrain features such as hills and dense woods, and man-made features such as buildings and walls, can significantly alter noise levels. Generally, any large structure blocking the line of sight will provide at least a 5-dBA reduction in source noise levels at the receiver (Federal Highway Administration [FHWA] 2011). Structures can substantially reduce exposure to noise as well. The FHWA's guidelines indicate that modern building construction generally provides an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows.

The impact of noise is not a function of loudness alone. The time of day at which noise occurs and the duration of the noise are also important factors when considering potential noise impacts. Most noise that lasts for more than a few seconds is variable in its amplitude (i.e., the noise level continuously fluctuates over time). Consequently, a variety of noise descriptors have been developed. One of the most frequently used noise metrics is the equivalent continuous sound level (L_{eq}), which considers both duration and the sound power level of the source. The L_{eq} is defined as the single steady A-weighted level equivalent to the same amount of energy as that contained in the actual fluctuating levels over time. The extent of sound level fluctuations over a period of time is characterized by the minimum (L_{min}) and maximum (L_{max}) sound pressure levels, which represent the lowest and highest sound pressure levels measured during a given period, respectively.

The sound level that is exceeded "n" percent of time during a given sample period in the percentile noise level is represented as L_n. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum), and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."

Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using Day-Night Average Level (L_{dn}), which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours; it is also measured using Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 p.m. to 7:00 a.m. (Caltrans 2013). Noise levels described by L_{dn} and CNEL usually differ by about 1 dBA. The relationship between the peak-hour L_{eq} value and the L_{dn}/CNEL depends on the distribution of traffic during the day, evening, and night. Quiet suburban areas typically have CNEL noise levels in the range of 40 to 50 dBA, while areas near arterial streets are in the 50 to 60-plus CNEL range. Normal conversational levels are in the 60 to 65-dBA L_{eq} range; ambient noise levels greater than 65 dBA L_{eq} can interrupt conversations (Federal Transit Administration [FTA] 2018).

Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of Hz. The frequency of a vibrating object describes how rapidly it oscillates. Vibration energy spreads out as it travels through the

ground, causing the vibration level to diminish with distance away from the source. High-frequency vibrations diminish much more rapidly than low frequencies, so low frequencies tend to dominate the spectrum at large distances from the source. Discontinuities in the soil strata can also cause diffractions or channeling effects that affect the propagation of vibration over long distances (Caltrans 2020a). When a building is impacted by vibration, a ground-to-foundation coupling loss will usually reduce the overall vibration level. However, under rare circumstances, the ground-to-foundation coupling may actually amplify the vibration level due to structural resonances of the floors and walls.

Vibration amplitudes are usually expressed in inches per second (in/sec) peak particle velocity (PPV). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration and other construction activity because it is related to the stresses that are experienced by buildings (Caltrans 2020a).

b. Noise and Vibration Sources

The principal noise generators in the StanCOG region are associated with transportation (i.e., major roads, airports, and rail lines). Local collector streets are not typically significant noise sources as traffic volume and speeds are generally much lower than for freeways and arterial roadways.

Similar to the environmental setting for noise, the vibration environment is typically dominated by traffic from nearby roadways and activity on construction sites. Heavy trucks typically operate on major streets and can generate groundborne vibration that varies depending on vehicle type, weight, and pavement conditions. Nonetheless, vibration due to roadway traffic is typically not perceptible. The major noise and vibration sources in the region are described below.

Motor Vehicle Traffic

Motor vehicles, including cars/light trucks, buses, and various types of trucks, are the most substantial source of noise in most of the StanCOG region. This can be attributed to the extensive network of major, primary, and secondary arterials located throughout the region, as well as the large number of vehicle trips that occur each day.

The primary roadway corridor noise sources in the StanCOG region are Interstate 5 and State Route (SR) 99 due to the high traffic volumes and high traffic speed of these roadways. In 2023, daily traffic on Interstate 5 averaged approximately 46,880 vehicles per day through the StanCOG region, ranging from a low of 44,000 vehicles near Stuhr Road and Fink Road to a high of 51,000 vehicles at Del Puerto Canyon Road and Sperry Avenue (Caltrans 2023). Daily traffic on SR 99 averaged approximately 123,375 vehicles per day, ranging from a low of 92,000 vehicles near the Merced/Stanislaus County Line to a high of 148,000 vehicles at Carpenter Road and Beckwith Road in Modesto (Caltrans 2023). As a result, noise levels along the Interstate 5 and SR 99 corridors in the region exceed 65 dBA CNEL.

Traffic on other major transportation corridors in the StanCOG region, such as SR 33, 108, 120, 132, 165, and 219, also generates noise in excess of 65 dBA CNEL within certain distances from the centerline of the freeway/roadway. Traffic on several regional arterial roads in the region also generates noise in excess of normally acceptable standards for noise-sensitive uses.

Aircraft Operation

Air facilities in the StanCOG region serve a number of needs, including scheduled commercial air passenger service, recreational flights, military operations, agricultural crop dusting services, cargo

services and private business flights. There are three major facilities of concern for circulation and transportation purposes: Modesto City-County Airport (Harry Sham Field); Oakdale Municipal Airport; and Turlock Airpark. The Modesto City-County Airport is currently the only airport that provides regularly scheduled air passenger service. Because of the level of activity at this airport, noise generated at these airports is audible in the surrounding communities. Therefore, land uses in the surrounding areas have been planned to ensure that noise levels remain at acceptable levels for the various uses. The remaining airfields in the County are either private, not open to the public, or used purely for agricultural purposes, with no commercial traffic and no jet operations. While these airports do not generate as much noise as the Modesto City-County Airport, flight operations have also had impacts on nearby residential areas.

General aviation aircraft operations occur during daytime hours. The 60 dBA CNEL contour for annual average operations at most regional airports is located relatively close to the runway due to relatively low numbers of operations and an aircraft fleet consisting primarily of smaller propeller aircraft. However, it should be noted that maximum noise levels from individual operations by high performance single and twin-engine aircraft, aerial application aircraft, fire suppression aircraft and some corporate jets may result in short term noise impacts for persons located near the approach, departure or local training patterns of an airport.

In addition to airplanes, helicopter flights occur throughout the StanCOG region. These flights typically follow major and primary arterials with the exception of police patrol activities. Other flight-related activities include tourist sightseeing, Stanislaus County Sheriff's Office for search and rescue operations, Southern California Edison for power infrastructure work, and helicopter emergency medical services. Although single-event noise exposure resulting from helicopter operations may be considered a nuisance, the relatively low frequency and short duration of these operations do not significantly affect average daily noise levels anywhere in the region.

Railroad Operations

Train operations on the Altamont Corridor Express (ACE) and Amtrak generate noise within proximity to the railroad lines. Noise is generated during rail operations by locomotives starting and stopping, trains braking, the connection and disconnection of cars, train whistles, and track noise (the trains' wheels running on the track). The ACE commuter rail connects Manteca north of the StanCOG region to Merced to the south. The Amtrak originates in the City of Bakersfield and travels north towards Stockton.

Freight rail operations in the StanCOG region include high speed mainline operations on the Burlington Northern and Santa Fe Railway and Union Pacific Railroad and low speed mainline and switching operations on the Burlington Northern and Santa Fe Railway, Union Pacific Railroad, Sierra Railroad, California Northern Railroad and the Modesto and Empire Traction Company Railroad.

Railroad operations generate high, relatively brief, intermittent noise events. These noise events are an environmental concern for sensitive uses located along rail lines and near sidings and switching yards. According to the FTA Transit Noise and Vibration Impact Assessment guidance document (2018), vehicle propulsion rail units generate the following noises: (1) whine from electric control systems and traction motors that propel rapid transit cars, (2) diesel-engine exhaust noise from locomotives, (3) air-turbulence noise generated by cooling fans and (4) gear noise. Additional noise of motion is generated by the interaction of steel wheels with the steel rail running surface. The interaction of steel wheels and rails generates three types of noise: (1) rolling noise due to continuous rolling contact, (2) impact noise when a wheel encounters a discontinuity in the running surface, such as a rail joint, turnout or crossover and (3) squeal generated by friction on tight curves.

When comparing electric- and diesel-powered trains, speed dependence is strong for electric-powered transit trains because wheel/rail noise dominates, and noise from this source increases with increasing speed. On the other hand, speed dependence is less for diesel-powered commuter rail trains, particularly at low speeds where the locomotive exhaust noise dominates. As speed increases, wheel-rail noise becomes the dominant noise source and diesel- and electric-powered trains will generate similar noise levels. For transit vehicles in motion, close-by sound levels also depend upon other parameters, such as vehicle acceleration and vehicle length, plus the type/condition of the running surfaces. For very high-speed rail vehicles, air turbulence can also be a significant source of noise. In addition, the guideway structure can also radiate noise as it vibrates in response to the dynamic loading of the moving vehicle.

Rail operations generate varying noise levels depending on the type of rail activity. Heavier commuter trains or freight trains, which are primarily diesel-powered, generate more noise than electrically powered light-rail vehicles. According to the FTA, six commuter train pass-bys per hour traveling at 50 miles per hour with a horn blowing generate a noise level of 81 dBA $L_{eq(1\text{-}hour)}$ at 50 feet. This same activity without a horn generates a noise level of 68 dBA $L_{eq(1\text{-}hour)}$ at 50 feet. In comparison, 12 light rail transit train pass-bys per hour traveling 40 miles per hour generate a noise level of 65 dBA $L_{eq(1\text{-}hour)}$ at 50 feet. These same light rail transit trains generate a noise level of 57 dBA $L_{eq(1\text{-}hour)}$ at 20 miles per hour at 50 feet (FTA 2018).

In much of the StanCOG region, the rail corridor is located in open areas. In the central part of the region, train tracks are generally located closer to existing roadway corridors and to residences.

Industrial and Manufacturing

Noise from industrial complexes and manufacturing plants are characterized as stationary or point sources even though they may include mobile sources like heavy equipment. Local governments typically regulate noise from industrial, manufacturing and construction equipment and activities through enforcement of noise ordinance standards, implementation of general plan policies and imposition of conditions of approval for building or grading permits.

In the StanCOG region and throughout California, industrial complexes and manufacturing plants are generally located away from sensitive land uses and, as such, noise generated from these sources has less of an effect on surrounding properties.

Construction Noise and Vibration

Noise and vibration from construction sites are characterized as stationary or point sources even though heavy construction equipment is often mobile. Construction activities typically generate high, intermittent noise and vibration on and adjacent to construction sites and related noise and vibration impacts are short-term, occurring primarily on weekdays and during daylight hours. The dominant source of noise from most construction equipment is their diesel engine. During pile driving or pavement breaking events, impact noise is the dominant source and equipment produces the highest vibration levels. Construction equipment operates in two modes: stationary and mobile. Stationary equipment operates in one location for one or more days at a time and can generate a constant noise level (e.g., pumps, generators, and air compressors) or variable noise levels (e.g., pile drivers and pavement breakers). Mobile equipment moves around the construction site (e.g., dozers and tractors). Noise levels vary depending on the power cycle being used. Mobile equipment such as trucks, move to and from the site using adjacent streets/roads.

4.12.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

Relevant federal regulations include those established by FHWA, FTA, the Federal Aviation Administration, and the Department of Housing and Urban Development (HUD).

Federal Highway Administration

Title 23, Part 772 of the Code of Federal Regulations - Traffic Noise

FHWA regulations for noise abatement must be considered for federal or federally funded projects involving the construction of a new highway or significant modification of an existing freeway when the project would result in a substantial noise increase or when the predicted noise levels approach or exceed the Noise Abatement Criteria (NAC). Traffic noise impacts, as defined in 23 CFR Section 772.5, occur when the predicted noise level in the design year approach or exceed the NAC specified in 23 CFR Section 772, or a predicted noise level substantially exceeds the existing noise level (a “substantial” noise increase). A "substantial increase” is defined as an increase of 12 dB L_{eq} during the peak hour of traffic. For sensitive uses, such as residences, schools, churches, parks and playgrounds, the NAC for interior and exterior spaces is L_{eq} 57 and 66 dB, respectively, during the peak hour of traffic noise. Table 4.12-1 summarizes NAC corresponding to various land use activity categories. Activity categories and related traffic noise impacts are determined based on the actual land use in a given area.

Table 4.12-1 Noise Abatement Criteria

Activity Category	Hourly L_{eq}	Hourly L10[1]	Analysis Location	Description of Activity Category
A	57	60	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	67	70	Exterior	Residential
C	67	70	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	55	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	75	Exterior	Hotels, motels, offices, restaurants/bars and other developed lands, properties or activities not included in A-D or F
F	–	–	–	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical) and warehousing
G	–	–	–	Undeveloped lands that are not permitted

[1] L10 is the level of noise exceeded for 10 percent of the time.

Source: FHWA 2017

Title 40, Part 201 and Title 49, Part 210 of the Code of Federal Regulations - Railroad Noise

Federal regulations for railroad noise are contained in 40 CFR Part 201 and 49 CFR Part 210. The regulations set noise limits for locomotives and are implemented through regulatory controls on locomotive manufacturers. Federal regulations also establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 CFR Part 205, Subpart B. The federal truck pass-by noise standard is 80 dB at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

Title 40, Part 201 and Title 49, Part 210 of the Code of Federal Regulations - Railroad Noise

Federal regulations for railroad noise are contained in 40 CFR Part 201 and 49 CFR Part 210. The regulations set noise limits for locomotives and are implemented through regulatory controls on locomotive manufacturers.

Title 40, Part 205, Subpart B of the Code of Federal Regulations – Medium and Heavy Trucks

Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 CFR Part 205, Subpart B. The federal truck pass-by noise standard is 80 dBA at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers. FHWA regulations for noise abatement apply to federal or federally-funded projects involving the construction of a new highway or significant modification of an existing freeway when the project would result in a substantial noise increase or when the predicted noise levels approach or exceed the NAC.

Title 23, Part 772 of the Code of Federal Regulations – Federal and Federal-Aid Highway Projects

Title 23 of the Code of Federal Regulations (23 CFR Section 772) provides procedures for preparing operational and construction noise studies and evaluating noise abatement for federal and federal-aid highway projects. Under 23 CFR Section 772.5, projects are categorized as Type I, II, or III projects. FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes. A Type II project is a noise barrier retrofit project that involves no changes to highway capacity or alignment.

Type I projects include those that create a completely new noise source, increase the volume or speed of traffic, or move the traffic closer to a receiver. Type I projects include the addition of an interchange, ramp, auxiliary lane, or truck-climbing lane to an existing highway, or the widening an existing ramp by a full lane width for its entire length. Projects unrelated to increased noise levels, such as striping, lighting, signing and landscaping projects, are not considered Type I projects.

Under 23 CFR Section 772.11, noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact. In such cases, 23 CFR Section 772 requires that the project sponsor “consider” noise abatement before adoption of the environmental document. This process involves identification of noise abatement measures that are reasonable, feasible and likely

to be incorporated into the project as well as noise impacts for which no apparent solution is available.

Type III projects are Federal or Federal-aid highway projects that do not meet the classification of a Type I or Type II project. Noise analysis is not required for Type III projects. Projects unrelated to increased noise levels, such as striping, lighting, signing, and landscaping projects, are considered Type III projects.

Federal Aviation Administration

Title 14, Part 36 of the Code of Federal Regulations - Aircraft Noise

Aircraft operated in the U.S. are subject to federal requirements regarding noise emissions levels. These requirements are set forth in Title 14 CFR, Part 36. Part 36 establishes maximum acceptable noise levels for specific aircraft types, taking into account the model year, aircraft weight and number of engines.

Federal Transit Administration

FTA has developed guidance to evaluate noise impacts from operation of surface transportation modes (i.e., passenger cars, trucks, buses, and rail) in the 2018 FTA *Transit Noise Impact and Vibration Assessment* (FTA 2018). All mass transit projects receiving federal funding must use these guidelines to predict and assess potential noise and vibration impacts. As ambient levels increase, smaller increments of change are allowed to minimize community annoyance related to transit operations.

Groundborne vibration levels produced during construction activities could induce potential architectural damage to buildings as identified by FTA are included in Table 4.12-2. Based on FTA recommendations, limiting vibration levels to below 0.2 in/sec PPV at non-engineered timber and masonry buildings (which would apply to a typical residential structure) would prevent excessive vibration levels that cause architectural damage.

Table 4.12-2 FTA Groundborne Vibration Architectural Damage Criteria - Construction

Building Category	PPV (in/sec)
I. Reinforced concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Nonengineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

in/sec = inches per second; PPV = peak particle velocity
Source: FTA 2018

For groundborne vibration created during operation of a roadway or railway, FTA recommends using the vibration criteria contained in Table 4.12-3 for conducting a detailed analysis.

Table 4.12-3 FTA Groundborne Vibration Criteria - Operation

Land Use	Max VdB	Description of Use
Workshop	90	Vibration that is distinctly felt. Appropriate for workshops and similar areas not as sensitive to vibration.
Office	84	Vibration that can be felt. Appropriate for offices and similar areas not as sensitive to vibration
Residential, Day	78	Vibration that is barely felt. Adequate for computer equipment and low-power optical microscopes (up to 20X).
Residential, Night Operating Rooms	72	Vibration is not felt, but ground-borne noise may be audible inside quiet rooms. Suitable for medium-power optical microscopes (100X) and other equipment of low sensitivity.

VdB = vibration decibels

Source: FTA 2018

FTA also provides reasonable criteria for assessing construction noise impacts based on the potential for adverse community reaction in their *Transit and Noise Vibration Impact Assessment Manual* (FTA 2018). For residential uses, the daytime noise threshold is 80 dBA L_{eq} for an 8-hour period.

FTA has developed a screening procedure to identify locations where a rail project may cause a noise impact. The screening distances for requiring noise assessments for various types of projects are presented in Table 4.12-4.

Table 4.12-4 Screening Distances for Noise Assessments – Rail Transit Projects (in feet)

Type of Project		Unobstructed	Intervening Buildings
Commuter Rail Mainline		750	375
Commuter Rail Station	With Horn Blowing	1,600	1,200
Commuter Rail Station	Without Horn Blowing	250	200
Commuter Rail -Highway Crossing with Horns and Bells		1,600	1,200
Railroad Transit		700	350
Railroad Transit Station		200	100
Light Rail Transit		350	175
Streetcar		200	100
Access Roads to Stations		100	50
Low and Intermediate Capacity Transit	Steel Wheel	125	50
Low and Intermediate Capacity Transit	Rubber Tire	90	40
Low and Intermediate Capacity Transit	Monorail	175	70
Yards and Shops		1,000	650
Parking Facilities		125	75
Access Roads to Parking		100	50
Ventilation Shafts		200	100
Power Substations		250	125

Source: FTA 2018

FTA has developed a screening procedure to identify locations where a bus project may cause a noise impact. The screening distances for requiring noise assessments for various types of projects is presented in Table 4.12-5.

Table 4.12-5 Screening Distances for Noise Assessments – Bus Transit Projects (in feet)

Type of Project		Unobstructed	Intervening Buildings
Busway		500	250
BRT on Exclusive Roadway		200	100
Bus Facilities	Access Roads	100	50
Bus Facilities	Transit Mall	225	150
Bus Facilities	Transit Center	225	150
Bus Facilities	Storage and Maintenance	350	225
Bus Facilities	Park and Ride Lots with Buses	225	150

Source: FTA 2018

Department of Housing and Urban Development

Title 24, Part 51, Subpart B of the Code of Federal Regulations – Noise Abatement and Control

The mission of HUD includes fostering "a decent, safe, and sanitary home and suitable living environment for every American." Accounting for acoustics is intrinsic to this mission as safety and comfort can be compromised by excessive noise. To facilitate the creation of suitable living environments, HUD has developed a standard for noise criteria. The basic foundation of the HUD noise program is set out in the noise regulation 24 CFR Part 51 Subpart B, Noise Abatement and Control.

HUD's noise policy requires noise attenuation measures be provided when proposed projects are to be located in high noise areas. Within the HUD Noise Assessment Guidelines, potential noise sources are examined for projects located within 15 miles of a military or civilian airport, 1,000 feet from a road or 3,000 feet from a railroad.

HUD exterior noise regulations state that 65 dBA L_{dn} noise levels or less are acceptable for residential land uses and noise levels exceeding 75 dBA L_{dn} are unacceptable. A goal of 45 dB is set by HUD for interior noise forth and the attenuation requirements are focused on achieving that goal. It is assumed that with standard construction methods and materials, any building will provide sufficient attenuation so that if the exterior level is 65 dBA L_{dn} or less, the interior level will be 45 dBA L_{dn} or less.

b. State Laws, Regulations, and Policies

Land Use Compatibility Guidelines

The Governor's Office of Land Use and Climate Innovation (LCI; formerly Office of Planning and Research) is required to adopt and periodically revise guidelines for the preparation and content of local general plans. The 2017 General Plan Guidelines (LCI 2017) establish land use compatibility guidelines. Where a noise level range is denoted as "normally acceptable" for the given land use, the highest noise level in that range should be considered the maximum desirable for conventional

construction that does not incorporate any special acoustic treatment. The acceptability of noise environments classified as "conditionally acceptable" or "normally unacceptable" will also depend on the anticipated amount of time that will normally be spent outside the structure and the acoustic treatment to be incorporated in structural design.

Regarding noise-sensitive residential uses, the recommended exterior noise limits are 60 dBA CNEL for single-family residences and 65 dBA CNEL for multi-family residences. The recommended maximum interior noise level is 45 dBA CNEL, which could normally be achieved using standard construction techniques if exterior noise levels are within the levels described above.

California Department of Transportation

Caltrans establishes noise limits for vehicles licensed to operate on public roads (Caltrans 2013). For heavy trucks, the State pass-by standard is consistent with the federal limit of 80 dBA. The State pass-by standard for light trucks and passenger cars (less than 4.5 tons gross vehicle rating) is also 80 dBA at 15 meters from the centerline. For new roadway projects, Caltrans uses the NAC discussed above in connection with FHWA. In addition, Caltrans has published the Traffic Noise Analysis Protocol for assessing noise levels associated with roadway projects (Caltrans 2020a).

Caltrans has a *Transportation and Construction Induced Vibration Manual* that provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage (Caltrans 2020b).

California Streets and Highways Code, Section 216

Section 216 of the California Streets and Highways Code relates to the noise effects of a proposed freeway project on public and private elementary and secondary schools. Under this code, a noise impact occurs if, as a result of a proposed freeway project, noise levels exceed 52 dBA L_{eq} in the interior of public or private elementary or secondary classrooms, libraries, multipurpose rooms, or spaces. If a project results in a noise impact under this code, noise abatement must be provided to reduce classroom noise to a level that is at or below 52 dBA L_{eq}. If the noise levels generated from roadway sources exceed 52 dBA L_{eq} prior to the construction of the proposed freeway project, then noise abatement must be provided to reduce the noise to the level that existed prior to construction of the project.

California's Airport Noise Standards and Compatibility Planning

The State of California has the authority to establish regulations requiring airports to address aircraft noise impacts near airports. The State of California's Airport Noise Standards, found in Title 21 of the California Code of Regulations, identify a noise exposure level of 65 dBA CNEL as the noise impact boundary around airports. Within the noise impact boundary, airport proprietors are required to ensure that all land uses are compatible with the aircraft noise environment, or the airport proprietor must secure a variance from Caltrans.

California Noise Insulation Standards

The California Noise Insulation Standards found in Title 24 of the California Code of Regulations set requirements for new multi-family residential units, hotels, and motels that may be subject to relatively high levels of transportation-related noise. For interior noise, the noise insulation standard is 45 dBA L_{dn} in any habitable room and requires an acoustical analysis demonstrating how dwelling

units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than 60 dBA L_{dn}.

California Aeronautics Act

The State Aeronautics Act (Public Utilities Code, Section 21670 et seq.) requires the establishment of Airport Land Use Commissions (ALUCs), which are responsible for developing airport land use compatibility plans (ALUCPs) for noise-compatible land uses in the immediate proximity of a commercial or public airport (Section 21675). ALUCs have two major roles: preparation and adoption of ALUCPs, which address policies for both noise and safety and review of certain local government land use actions and airport plans for consistency with the land use compatibility plan.

The ALUCP is the major tool for ALUC land use regulation. The intent of the ALUCP is to encourage compatibility between airports and the various land uses that surround them. ALUCPs typically include the development of noise contours to identify excessive airport-related noise levels and measures to reduce noise levels.

Airport Noise Standards and Compatibility Planning

The State of California has the authority to establish regulations requiring airports to address aircraft noise impacts near airports. The State of California's Airport Noise Standards, found in Title 21 of the California Code of Regulations, identify a noise exposure level of 65 dB CNEL as the noise impact boundary around airports. Within the noise impact boundary, airport proprietors are required to ensure that all land uses are compatible with the aircraft noise environment, or the airport proprietor must secure a variance from Caltrans.

The Aeronautics Division of Caltrans has published the *California Airport Land Use Planning Handbook* (Caltrans 2011). The purpose of the *California Airport Land Use Planning Handbook* is to provide guidance for conducting airport land use compatibility planning. This handbook includes a section related to noise and states “the basic strategy for achieving noise compatibility in the vicinity of an airport is to prevent or limit development of land uses that are particularly sensitive to noise. Common land use strategies are ones that either involve few people (especially people engaged in noise-sensitive activities) or generate significant noise levels themselves (such as other transportation facilities or some industrial uses).”

Within the StanCOG region, Stanislaus County Planning Commission, along with the addition of two other members with expertise in aviation, serves as the Stanislaus County ALUC. The ALUC is responsible for protecting public health, safety, and welfare by ensuring that vacant lands in the vicinity of airports are planned and zoned for uses compatible with airport operations. The ALUC adopted ALUCP addresses the following public-use airports located within the StanCOG region: Modesto City-County Airport and Oakdale Municipal Airport. The ALUC adopted an update to the ALUCP on October 6, 2016, and then amended it in 2018 (Stanislaus County 2022).

c. Local Laws, Regulations, and Policies

To identify, appraise, and remedy noise and vibration problems in local communities, Stanislaus County, and incorporated cities in the StanCOG region are each required to adopt a noise element as part of their General Plan. Local governments use the LCI General Plan Guidelines (2017), including land use compatibility guidelines, to prepare General Plan noise elements.

Each noise element is required to analyze and quantify current and projected noise levels associated with local noise sources, including, but not limited to: highways and freeways, primary arterials and

major local streets, rail operations, air traffic associated with the airports; local industrial plants; and other ground stationary sources that contribute to the community noise environment. Beyond statutory requirements, local jurisdictions are free to adopt their own goals and policies in their noise elements, although most jurisdictions have chosen to adopt noise/land use compatibility guidelines that are similar to those recommended by the State. Land use compatibility considers both existing noise levels in a community, as well as community attitudes toward dominant noise sources.

In addition to regulating noise through noise element policies, local jurisdictions regulate noise through enforcement of local ordinance standards. These standards generally relate to noisy activities (e.g., use of loudspeakers and construction) and stationary noise sources and facilities (e.g., air conditioning units and industrial activities). The StanCOG region has nine incorporated cities, each of which has its own adopted noise standards. Noise standards for the County and incorporated cities in the region typically apply land-use compatibility criteria of 60-65 dBA L_{dn} as being the normally acceptable range for new residential developments, and interior noise criteria of 45 dBA L_{dn}, consistent with the overall State recommendations.

As discussed above, the State Aeronautics Act (Public Utilities Code, Section 21670 et seq.) requires the preparation of an ALUCP for nearly all public-use airports in the State (Section 21675). The Stanislaus County ALUCP addresses aviation related matters such as safety, noise, overflight, and height policies and safety zones (Stanislaus County 2016b). The ALUCP establishes areas of influence within which airport operations are likely to affect land uses or land uses could affect airport operations. The goal of the ALUCP is to protect residents from the negative environmental noise, safety, and traffic impacts that can potentially be induced by airports. Safety and noise criteria are identified in the ALUCP so that land use conflicts with airport operations are minimized.

4.12.3 Impact Analysis

a. Methodology and Significance Thresholds

The analysis of noise impacts considers the effects of both temporary construction-related noise and long-term noise associated with proposed transportation system improvements. Temporary construction noise was estimated based upon levels presented in the FTA Transit Noise and Vibration Impact Assessment.

Appendix G of the *CEQA Guidelines* includes Criteria 1, 3, and 4 below for determining whether a project's impacts would have a significant impact related to noise; TCAG has also added criterion 2 for a threshold related to absolute noise increases:

1. Generate 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;
2. Generate a substantial absolute increase in ambient noise;
3. Generate excessive groundborne vibration or groundborne noise levels; and/or
4. 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.

Stanislaus County and the nine incorporated cities within the StanCOG region each have their own noise standards that can be used to determine impact significance. These local noise standards typically apply land-use compatibility criteria of 60-65 dBA CNEL as the normally acceptable range for residential developments, and interior noise criteria of 45 dBA CNEL, consistent with the overall State recommendations and the recommendations of HUD for residential uses.

The analysis of potential impacts assumes implementation of all applicable standards, including those established by local jurisdictions, counties, the State of California, and federal agencies, where appropriate.

b. Project Impacts and Mitigation Measures

The following section discusses potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2026 RTP/SCS. Due to the programmatic nature of the proposed 2026 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement projects and future projects under the land use scenario envisioned by the proposed 2026 RTP/SCS could result in the impacts as described in the following section.

Threshold 1:	Would the project result in 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?
Threshold 2:	Would the project result in a substantial absolute increase in ambient noise?

Impact N-1 CONSTRUCTION ACTIVITY ASSOCIATED WITH TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD GENERATE A SUBSTANTIAL TEMPORARY INCREASE IN AMBIENT NOISE LEVELS IN EXCESS OF STANDARDS ESTABLISHED IN LOCAL GENERAL PLANS OR NOISE ORDINANCES AND WOULD GENERATE A SUBSTANTIAL ABSOLUTE NOISE INCREASE OVER EXISTING NOISE LEVELS. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

The operation of equipment during the construction of roadway infrastructure, as well as land-use development envisioned in the proposed 2026 RTP/SCS would result in temporary increases in noise in the immediate vicinity of individual construction sites. As shown in Table 4.12-6, average noise levels associated with the use of heavy equipment at construction sites typically range from 76 to 88 dBA at 50 feet from the source, depending upon the types of equipment in operation at any given time and the phase of construction. For projects that require pile driving, construction noise levels may reach 101 dBA at 50 feet from the source. For projects that do not require pile driving, the highest noise levels typically occur during excavation and foundation development, which involves the use of such equipment as backhoes, bulldozers, pile drivers, and front-end loaders.

Table 4.12-6 Typical Noise Levels for Construction Equipment (dBA)

Equipment	Typical Level 25 feet from the Source	Typical Level 50 feet from the Source	Typical Level 100 feet from the Source
Air Compressor	86	80	74
Backhoe	86	80	74
Concrete Mixer	91	85	79
Dozer	91	85	79
Grader	91	85	79
Jack Hammer	94	88	82
Loader	86	80	74
Paver	91	85	79
Pile-drive (Impact)	107	101	95
Pile-driver (Sonic)	101	95	89
Roller	91	85	79
Saw	82	76	70
Scarified	89	83	77
Scraper	91	85	79
Truck	90	84	78

Source: FTA 2018

Noise generated by construction projects would vary depending on the project and intensity of equipment use. Roadway widening projects and new roadway projects would likely require the operation of multiple pieces of heavy-duty equipment that generate high noise levels. Alternatively, repainting/restriping projects typically requiring minimal use of heavy equipment. This conservative analysis assesses construction noise based on the operation of heavy-duty equipment. Noise levels from point sources such as individual construction sites associated with land use projects envisioned in the proposed 2026 RTP/SCS typically attenuate at a rate of 6 dBA per doubling of distance. Therefore, areas within 800 feet of a construction site with heavy-duty equipment may be exposed to noise levels exceeding 65 dBA. Areas within 3,200 feet of impact pile drivers may be exposed to noise levels exceeding 65 dBA.

Some local agencies in the StanCOG region include specific regulations in their municipal code to reduce construction noise impacts. In most cases, these regulations restrict construction activities to specific times and days. Such local policies serve to reduce the impacts of noise on surrounding communities by prohibiting construction during the night when people are engaged in noise-sensitive activities like sleeping. Nevertheless, this impact is significant because applicable noise standards would be exceeded and because a substantial temporary increase in ambient noise levels in the project vicinity would occur.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measure developed for the proposed 2026 RTP/SCS program where applicable for transportation projects that would result in noise impacts, and where feasible and necessary based on project and site-specific considerations. Stanislaus County and incorporated cities in the County can and should implement

this measure where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project-specific environmental documents may adjust this measure as necessary to respond to site-specific conditions.

N-1 Construction Noise Reduction

To reduce construction noise levels to achieve applicable standards and prevent a substantial increase in ambient noise levels, implementing agencies for transportation and land use projects shall implement the measures identified below where feasible and necessary.

a. **Compliance with local Construction Noise Regulations.** Implementing agencies shall ensure that, where residences or other noise sensitive uses are located within 800 feet of construction sites without pile driving, appropriate measures shall be implemented to ensure consistency with local noise ordinance requirements related to construction noise. Specific techniques may include, but are not limited to, restrictions on construction timing, use of sound blankets on construction equipment, and the use of temporary walls and noise barriers to block and deflect noise.

b. **Noise Complaint and Enforcement Manager.** Designate an on-site construction complaint and enforcement manager for projects within 800 feet of sensitive receivers. Implementing agencies shall post phone numbers for the on-site enforcement manager at construction sites along with complaint procedures and who to notify in the event of a problem.

c. **Pile Driving**. For any project within 3,200 feet of sensitive receptors that requires pilings, the implementing agency shall require caisson drilling or sonic pile driving as opposed to pile driving, where feasible. This shall be accomplished through the placement of conditions on the project during its individual environmental review.

d. **Construction Equipment Noise Control**. Implementing agencies shall ensure that equipment and trucks used for project construction utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds).

e. **Impact Equipment Noise Control.** Implementing agencies shall ensure that impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction be hydraulically or electrically powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, use of an exhaust muffler on the compressed air exhaust can lower noise levels from the exhaust by up to about 10 dBA. When feasible, external jackets on the impact equipment can achieve a reduction of 5 dBA. Whenever feasible, use quieter procedures, such as drilling rather than impact equipment operation.

f. **Construction Activity Timing Restrictions.** The following timing restrictions shall apply to 2026 RTP/SCS activates creating noise levels at or above 65 dBA at a nearby dwelling unit, except where timing restrictions are already established in local codes or policies. Construction activities shall be limited to:

   - Monday through Friday: 7 a.m. to 6 p.m.
   - Saturday: 9 a.m. to 5 p.m.
   - Sundays and Holidays: Not permitted

g. **Placement of Stationary Noise Sources.** Locate stationary noise sources as far from noise-sensitive receptors as possible. Stationary noise sources that must be located near existing receptors will be equipped with the best available mufflers.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are Stanislaus County and incorporated cities within the County. This mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during construction, as applicable.

Significance After Mitigation

Implementation of Mitigation Measure N-1 would reduce construction noise impacts. However, even with implementation of Mitigation Measure N-1, construction noise from all proposed 2026 RTP/SCS projects may not be reduced below applicable thresholds, and no additional mitigation measures to reduce this impact to less than significant levels are feasible. Therefore, impacts would remain significant and unavoidable.

Threshold 1:	Would the project generate 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?
Threshold 2:	Would the project generate a substantial absolute increase in ambient noise?

Impact N-2 TRANSPORTATION IMPROVEMENTS ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD GENERATE A SUBSTANTIAL PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN EXCESS OF STANDARDS OR OVER EXISTING NOISE LEVELS AND GENERATE A SUBSTANTIAL ABSOLUTE NOISE INCREASE OVER EXISTING NOISE LEVELS. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Traffic

Overall traffic levels on highways and roadways in the StanCOG region are projected to increase as a result of regional growth through the year 2049 with or without implementation of the proposed 2026 RTP/SCS (refer to Section 4.14, *Transportation*). While traffic may increase in certain locations, the expected number of vehicle miles traveled (VMT) per weekday in 2049 would be 13,211,155 VMT in the RTP/SCS preferred scenario. In general, as the VMT decreases, noise associated with VMT would also decrease.

The proposed 2026 RTP/SCS includes several projects that would potentially increase traffic noise by increasing traffic levels along and in the vicinity of affected facilities. Such projects include intersection/interchange improvements, widening existing roadways, widening and replacing ramps and bridge structures, constructing new interchanges, and road improvements that would allow increased traffic volumes. These projects are intended to relieve current or projected future traffic congestion or unacceptable safety conditions. However, in some cases, projects that expand roadway capacity would accommodate additional traffic volumes and/or relocate noise sources closer to sensitive receptors. Therefore, this impact is significant because applicable noise standards would be exceeded, or because a substantial permanent increase in ambient noise levels in the project vicinity would occur.

Airports

The proposed 2026 RTP/SCS does not include airport improvement projects or programs that would directly or indirectly increase aircraft operations at operating airports in the StanCOG region. Therefore, the proposed 2026 RTP/SCS would not increase ambient noise levels associated with airports. No impacts due to aircraft operations would occur.

Rail Operations

The proposed 2026 RTP/SCS includes investments in passenger rail and train service, such as rail crossing improvements, construction of new passenger rail stations (in Modesto and Turlock), and improvements to the ACE corridor throughout the County. The FTA has developed a screening procedure to identify locations where a rail project may cause a noise impact. The screening distances for requiring noise assessments for various types of projects are presented in Table 4.12-7.

Table 4.12-7 Screening Distances for Noise Assessments – Rail Transit Projects

		Screening Distance (Feet)	
Type of Project		**Unobstructed**	**Intervening Buildings**
Commuter Rail Mainline		750	375
Commuter Rail Station	With Horn Blowing	1,600	1,200
	Without Horn Blowing	250	200
Commuter Rail -Highway Crossing with Horns and Bells		1,600	1,200
Light Rail Transit		350	175
Street car		200	100
Access Roads		100	50
Low- and Intermediate-Capacity Transit	Steel Wheel	125	50
	Rubber Tire	90	40
	Monorail	175	70
Yards and Shops		1,000	650
Parking Facilities		125	75
Access Roads to Parking		100	50
Ventilation Shafts		200	100
Power Substations		250	125

Source: FTA 2018

Rail transit projects included in the proposed 2026 RTP/SCS would be located primarily in urban areas near to facility ridership. Sensitive land uses located within the screening distances presented in Table 4.12-7 of new and expanded rail corridors would potentially be exposed to noise levels that exceed acceptable standards.

Overall, ambient noise levels would increase in excess of standards or over existing noise levels generating a substantial absolute noise increase over existing noise levels. Therefore, noise impacts from rail projects would be potentially significant.

Bus Operations

The proposed 2026 RTP/SCS includes projects to improve existing bus service, such as capital improvements at existing transit centers, purchasing of replacement buses, fleet maintenance, and new bus rapid transit and express routes, which could indirectly increase bus operations. The FTA has developed a screening procedure to identify locations where a bus project may cause a noise impact. The screening distances for requiring noise assessments for various types of projects are presented in Table 4.12-8.

Table 4.12-8 Screening Distances for Noise Assessments – Bus Transit Projects

		Screening Distance (Feet)	
Type of Project		**Unobstructed**	**Intervening Buildings**
Busway		500	250
BRT on Exclusive Roadway		200	100
Bus Facilities	Access Roads	100	50
	Transit Center	225	150
	Storage and Maintenance	350	225
	Park and Ride Lots with Buses	225	150

Source: FTA 2018

Increased frequency of bus operations along existing corridors would increase noise for existing sensitive receptors along bus routes. The addition of local buses is unlikely to increase noise by significant levels as bus routes would be in urban areas with high ambient noise levels. However, sensitive land uses located within the screening distances presented in Table 4.12-8of new bus activity would potentially be exposed to noise levels that exceed acceptable standards.

Overall, ambient noise levels would increase in excess of standards or over existing noise levels generating a substantial absolute noise increase over existing noise levels. Therefore, this impact is significant because applicable noise standards would be exceeded, or because a substantial permanent increase in ambient noise levels in the project vicinity would occur.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measure developed for the proposed 2026 RTP/SCS program where applicable for transportation projects that would result in traffic noise impacts, and where feasible and necessary based on project and site-specific considerations. Project-specific environmental documents may adjust this measure as necessary to respond to site-specific conditions.

N-2 Noise Assessment and Control for Transportation Noise Sources

Implementing agencies for 2026 RTP/SCS projects shall complete detailed noise assessments using applicable guidelines (e.g., Caltrans Traffic Noise Analysis Protocol) for roadway projects that may impact noise sensitive receptors. The implementing agency shall ensure that a noise survey is conducted that, at minimum:

- Determines existing and projected noise levels
- Determines the amount of attenuation needed to reduce potential noise impacts to applicable State and local standards

- Identifies potential alternate alignments that allow greater distance from, or greater buffering of, noise-sensitive areas
- If warranted, recommends methods for mitigating noise impacts, including:
  - Appropriate setbacks
  - Sound attenuating building design, including retrofit of existing structures with sound attenuating building materials
  - Use of sound barriers (earthen berms, sound walls, or some combination of the two)

Where new or expanded transportation projects are found to expose receptors to noise exceeding normally acceptable levels, the individual project lead agency shall implement techniques as recommended in the project-specific noise assessments. The preferred methods for mitigating noise impacts shall include the use of appropriate setbacks and sound attenuating building design, including retrofit of existing structures with sound attenuating building materials where feasible. In instances where use of these techniques is not feasible, the use of sound barriers (earthen berms, sound walls, or some combination of the two) shall be considered. Long expanses of walls or fences may be interrupted with offsets and provided with accents to prevent monotony. Landscape pockets and pedestrian access through walls may be provided. Whenever possible, a combination of elements shall be used, including open grade paving, solid fences, walls, and landscaped berms. Other techniques such as rubberized asphalt or "quiet pavement" shall be used where feasible to reduce road noise for new roadway segments or modifications requiring repaving. The effectiveness of noise reduction measures shall be monitored by taking noise measurements and installing adaptive mitigation measures to achieve applicable standards.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. This mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during construction, as applicable.

Significance After Mitigation

Implementation of Mitigation Measure N-2 would reduce noise from transportation sources. However, even with implementation of Mitigation Measure N-2, mobile source noise from buildout of the proposed 2026 RTP/SCS may continue to impact nearby noise sensitive receivers and exceed acceptable standards. Impacts would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 3:	Would the project generate excessive groundborne vibration or groundborne noise levels during construction?

Impact N-3 CONSTRUCTION ACTIVITIES ASSOCIATED WITH TRANSPORTATION PROJECTS UNDER THE PROPOSED 2026 RTP/SCS WOULD GENERATE EXCESSIVE GROUNDBORNE VIBRATION LEVELS. NEW TRUCK, BUS, AND TRAIN TRAFFIC RESULTING FROM THE PROPOSED 2026 RTP/SCS WOULD GENERATE EXCESSIVE VIBRATION LEVELS. THESE IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Construction

Construction-related vibration has the potential to damage structures, cause cosmetic damage (e.g., crack plaster), or disrupt the operation of vibration-sensitive equipment. Vibration can also be a

source of annoyance to individuals who live or work close to vibration-generating activities. Heavy construction operations can cause substantial vibration near the source. Table 4.12-9 shows vibration levels associated with typical construction equipment. Similar to construction noise, vibration levels would be variable depending on the type of construction project and related equipment use.

Table 4.12-9 Vibration Source Levels for Construction Equipment

Equipment		Approximate Vibration Level (VdB)			
		25 feet from Source	50 feet from Source	100 feet from Source	200 feet from Source
Caisson Drilling		87	78	69	60
Jackhammer		79	70	61	52
Large Bulldozer		87	78	69	60
Loaded Truck		86	77	68	58
Pile Driver (impact)	Upper range	112	103	94	84
	Typical	104	95	86	77
Pile Driver (sonic)	Upper range	105	96	87	78
	Typical	93	84	75	65
Small Bulldozer		58	48	39	30
Vibratory Roller		94	85	76	67

Source: FTA 2018

Typical project construction activities, such as the use of jackhammers, other high-power or vibratory tools, compactors, and tracked equipment, may generate substantial vibration (i.e., greater than 0.2 inches per second PPV) in the immediate vicinity, typically within 15 feet of the equipment. Through the use of scheduling controls, typical construction activities would be restricted to hours with least potential to affect nearby properties. Thus, perceptible vibration can be kept to a minimum and not result in human annoyance or structural damage.

Some specific construction activities result in higher levels of vibration. Pile driving has the potential to generate the highest vibration levels and is the primary concern for structural damage to nearby structures, especially when near fragile and/or historic structures. Vibration levels generated by pile driving activities would vary depending on project conditions, such as soil conditions, construction methods and equipment used. Depending on the proximity of existing structures to each construction site, the structural soundness of the affected buildings and construction methods, vibration caused by pile driving or other foundation work with a substantial impact component such as blasting, rock or caisson drilling, and site excavation or compaction may be high enough to be perceptible outside the construction area and potentially damage existing structures.

Stanislaus County and some of the cities in the StanCOG region include regulations in their municipal code that reduce construction noise and vibration impacts. In most cases, these regulations restrict vibration-generating construction activities to specific times and days. Such local policies reduce the impacts of vibration on surrounding communities by prohibiting construction during the night when people are engaged in vibration-sensitive activities like sleeping. Nevertheless, this impact is significant because some project-specific transportation project construction could cause excessive groundborne vibration or groundborne noise levels.

Operation

The primary vibration sources associated with transportation system operations include heavy truck and bus traffic along roadways and train traffic along rail lines. However, vehicle traffic, including heavy trucks traveling on a highway, rarely generate vibration amplitudes high enough to cause structural or cosmetic damage, except in rare cases (e.g., where heavy truck traffic passes near fragile older buildings). Heavy trucks traveling over potholes or other pavement irregularities can cause vibration high enough to result in complaints from nearby residents. These conditions are commonly addressed by smoothing the roadway surface. Based on vibration measurements throughout California by Caltrans, worst-case traffic vibrations were shown to drop below the threshold of perception at distances of 150 feet or greater (Caltrans 2020b). Given that sensitive receptors are located within 150 feet of transportation facilities within the StanCOG region, and that proposed 2026 RTP/SCS transportation projects include roadway expansion and construction of high occupancy vehicle lanes on SR 99, significant impacts related to vibration associated with truck traffic could occur.

Rail activity is also a source of vibration. Caltrans conducted measurements of vibration levels associated with train activity throughout the State and found a peak vibration level of 0.36 inches per second PPV at ten feet from the track (Caltrans 2004). Based on this reference vibration level, vibrations from train activity drop below the threshold of perception at distances greater than 250 feet. The proposed 2026 RTP/SCS includes rail crossing improvements, construction of new passenger rail stations (in Modesto and Turlock), and improvements to the ACE corridor throughout the County. These improvements would potentially increase rail activity along existing lines and also introduce rail activity to new areas. These changes may expose nearby sensitive receptors and fragile buildings to a substantial increase in vibration levels relative to the existing condition. Impacts would be significant because excessive groundborne vibration or groundborne noise levels would be generated.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the proposed 2026 RTP/SCS program where applicable for transportation projects that would result in vibration impacts, and where feasible and necessary based on project and site-specific considerations. Stanislaus County and incorporated cities within the County can and should implement these measures where relevant to transportation and land use projects implementing the proposed 2026 RTP/SCS. Project-specific environmental documents may adjust these measures as necessary to respond to site-specific conditions.

N-3(a) Vibration Mitigation for Construction of Transportation Projects

If construction equipment would generate vibration levels exceeding acceptable levels as established by FTA (as shown in Table 4.12-2 and Table 4.12-3), implementing agencies of the proposed 2026 RTP/SCS shall, or can and should, complete the following tasks:

- Prior to construction, survey the project site for vulnerable buildings, and complete geotechnical testing (preconstruction assessment of the existing subsurface conditions and structural integrity), for any older or historic buildings within 50 feet of pile driving. The testing shall be completed by a qualified geotechnical engineer and qualified historic preservation professional and/or structural engineer.

- Prepare and submit a report to the lead agency that contains the results of the geological testing. If recommended by the preconstruction report implementing agencies shall require ground vibration monitoring of nearby historic structures. Methods and technologies shall be based on the specific conditions at the construction site. The preconstruction assessment shall include a monitoring program to detect ground settlement or lateral movement of structures in the vicinity of pile-driving activities and identify corrective measures to be taken should monitored vibration levels indicate the potential for building damage. In the event of unacceptable ground movement with the potential to cause structural damage, all impact work shall cease, and corrective measures shall be implemented to minimize the risk to the subject, or adjacent, historic structure.
- To minimize disturbance within 550 feet of pile-driving activities, implement "quiet" pile-driving technology, such as predrilling of piles and the use of more than one pile driver to shorten the duration of pile driving), where feasible, in consideration of geotechnical and structural requirements and conditions as defined as part of the geotechnical testing, if testing was feasible.
- Use cushion blocks to dampen noise from pile driving.
- Phase operations of construction equipment to avoid simultaneous vibration sources.

N-3(b) Vibration Mitigation for Operation of Transportation Projects

Where local vibration and groundborne noise standards do not apply, implementing agencies of 2026 RTP/SCS projects shall comply with all applicable local vibration and groundborne noise standards, or in the absence of such local standards, comply with guidance provided by the FTA in *Transit Noise and Vibration Impact Assessment* (FTA 2018) to assess impacts to buildings and sensitive receptors and reduce vibration and groundborne noise. FTA recommended thresholds shall be used except in areas where local standards for groundborne noise and vibration have been established. Methods that can be implemented to reduce vibration and groundborne noise impacts include, but are not limited to:

- Rail Traffic
  - Maximizing the distance between tracks and sensitive uses
  - Conducting rail grinding on a regular basis to keep tracks smooth
  - Conducting wheel truing to re-contour wheels to provide a smooth-running surface and removing wheel flats
  - Providing special track support systems such as floating slabs, resiliently supported ties, high-resilience fasteners and ballast mats;
  - Implementing operational changes such as limiting train speed and reducing nighttime operations.
- Bus and Truck Traffic
  - Construction of noise barriers
  - Use noise reducing tires and wheel construction on bus wheels
  - Use vehicle skirts (i.e., a partial enclosure around each wheel with absorptive treatment) on freight vehicle wheels

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are Stanislaus County and cities within the County. These mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during construction, as applicable.

Significance After Mitigation

Implementation of Mitigation Measure N-3(a) would reduce potential construction vibration impacts. However, even with implementation of Mitigation Measure N-3(a), construction vibration from all proposed 2026 RTP/SCS projects may not be reduced below applicable thresholds and impacts would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible. Implementation of Mitigation Measure N-3(b) would reduce potential operational vibration impacts. However, even with implementation of Mitigation Measure N-3(b), vibration from buildout of the proposed 2026 RTP/SCS may continue to be excessive. Impacts would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 1:	Would the project generate 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?
Threshold 2:	Would the project generate a substantial absolute increase in ambient noise?

Impact N-4 LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2026 RTP/SCS MAY PLACE SENSITIVE RECEPTORS IN AREAS WITH NOISE LEVELS IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL PLAN OR NOISE ORDINANCE. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

The proposed 2026 RTP/SCS is based on a land use and transportation scenario which defines a pattern of future growth and transportation system investment for the region emphasizing transit-oriented development and infill development near transit and other transportation facilities, but development outside these areas could occur as well. Population and job growth is allocated principally within existing urban areas near public transit and existing transit corridors. New noise-sensitive development in infill areas could be exposed to noise levels exceeding County or city noise standards for residential land uses, specifically, the 65 dBA L_{dn} standard, with a lesser potential in more suburban and rural areas. Potential sources of noise exposure include traffic, rail and/or bus operations, commercial activity, and industrial activity. New development in infill areas near transit may also expose existing noise-sensitive uses to noise levels exceeding local noise thresholds. Impacts would be significant because applicable noise standards could be exceeded, or because infill project residents could be exposed to a substantial increase in ambient noise levels.

Mitigation Measure

Stanislaus County and cities within the County can and should implement the following mitigation measure where relevant to land use projects implementing the proposed 2026 RTP/SCS, and where feasible and necessary based on project and site-specific considerations. Project-specific environmental documents may adjust this measure as necessary to respond to site-specific conditions.

N-4 Noise Mitigation for Land Uses

If a 2026 RTP/SCS land use project is located in an area with exterior ambient noise levels above local noise standards, the implementing agency shall ensure that a noise study is conducted to determine the existing exterior noise levels in the vicinity of the project. If the project would be impacted by ambient noise levels, feasible attenuation measures shall be used to reduce operational noise to meet acceptable standards. In addition, noise insulation techniques shall be utilized to reduce indoor noise levels to thresholds set in applicable State and/or local standards. Such measures may include but are not limited to: dual-paned windows, solid core exterior doors with perimeter weather stripping, air conditioning system so that windows and doors may remain closed and situating exterior doors away from roads. The noise study and determination of appropriate mitigation measures shall be completed during the project's individual environmental review.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for land use projects are Stanislaus County and cities within the County. This mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during construction, as applicable.

Significance After Mitigation

Implementation of Mitigation Measure N-4 would reduce noise for sensitive land uses in areas that exceed noise standards. However, even with implementation of Mitigation Measure N-4, noise from buildout of proposed 2026 RTP/SCS may continue to impact nearby noise sensitive receptors and exceed acceptable standards. This impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 4:	Would 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, expose people residing or working in the project area to excessive noise levels?

Impact N-5 TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD BE LOCATED IN CLOSE PROXIMITY TO EXISTING AIRPORTS SUCH THAT APPLICABLE EXTERIOR AND INTERIOR NOISE THRESHOLDS WOULD BE EXCEEDED. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

The proposed 2026 RTP/SCS emphasizes infill development near transit and other transportation facilities. Public airports typically service entire regions, whereas smaller private airports or airstrips tend to serve local users. However, like other noise sources, noise from airports and aircraft flight events have the greatest effect on nearby land uses. As shown in Table 4.12-10, there are two public use and one private use airports in the StanCOG region that serve commercial and general aviation users.

Table 4.12-10 Public and Private Airports within the StanCOG Region

Airport	Public/Private Use	Airport Land Use Compatibility Plan (YES/NO)
Modesto City-County Airport (Harry Sham Field)	Public	Yes
Oakdale Municipal Airport	Public (Agricultural)	Yes
Turlock Airpark	Private	No

Modesto City-County Airport and Oakdale Municipal Airport have an active ALUCP to discourage incompatible land uses within the vicinity of the airport. However, even with ALUCPs the potential still exists for forecasted development consistent with the proposed 2026 RTP/SCS to occur in areas of 70 dBA CNEL, exceeding recommended airport noise thresholds of 65 dBA CNEL for residential land uses and the project-specific land use compatibility thresholds of 70 dBA CNEL.

In addition to consideration of exterior CNEL noise levels, increases in interior noise levels near airports have the potential to result in sleep disturbance at nearby sensitive land uses. This discussion addresses aviation related noise issues; impacts related to exposure to aviation related safety hazards are discussed in detail in Section 4.9, *Hazards and Hazardous Materials*. In accordance with the Federal Interagency Committee on Noise (FICON) guidance, aircraft-generated interior single-event noise levels of 65 dBA could result in a 5 percent or less chance of awakening someone (FICON 1992). Local land use compatibility standards contained in city and county general plans would typically dictate whether specific site review is required for construction of sensitive land uses in areas potentially affected by aircraft noise. However, given the regional scale of the proposed 2026 RTP/SCS, it is possible that the plan's forecasted land use development pattern could result in exposure to exterior and interior noise levels from existing airports or airstrips that exceed applicable thresholds. There would be a potentially significant impact resulting from excessive airport noise levels if a projected development were to occur in close proximity to existing airports or airstrips. Because implementation of the proposed 2026 RTP/SCS land use development pattern could potentially result in land use development being located in close proximity to existing airports such that applicable exterior and interior noise thresholds would be exceeded, people residing or working in the area may be exposed to excessive noise levels. This is a potentially significant impact.

Some transportation projects in the proposed 2026 RTP/SCS would be within the vicinity of a private airstrip or an airport land use plan. Individuals would not be exposed to airport-related noise during operation of these projects, as they would not entail habitable structures or other facilities in which people would work or visit. However, during construction of these projects, construction personnel would be exposed to excessive noise levels. Such exposure would be temporary and therefore considered less than significant.

Mitigation Measures

Stanislaus County and cities within the County can and should implement the following mitigation measure where relevant to land use projects implementing the proposed 2026 RTP/SCS near existing public or public use airports, and where feasible and necessary based on project and site specific considerations. Project-specific environmental documents may adjust this measure as necessary to respond to site-specific conditions.

N-5 Noise Mitigation Near Airports

Local lead agencies for all new development proposed to be located within an existing airport influence zone, as defined by the locally adopted ALUCP or local general plan, or within two miles of

a private use airport, shall require a site specific noise compatibility study. The study shall consider and evaluate existing aircraft noise, based on specific aircraft activity data for the airport in question, and shall include recommendations for site design and building construction. Such measures may include but are not limited to: dual-paned windows, solid core exterior doors with perimeter weather stripping, air conditioning system so that windows and doors may remain closed, and situating exterior doors away from roads. The noise study and determination of appropriate mitigation measures shall be completed during the project's individual environmental review.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for land use projects are Stanislaus County and cities within the County. This mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during construction, as applicable.

Significance After Mitigation

To the extent that a local agency requires an individual project to implement Mitigation Measure N-5, the appropriate design and building construction would ensure compliance with relevant plans or codes, and this impact would be reduced to a less than significant level. However, even with implementation of Mitigation Measure N-5, noise from buildout of the proposed 2026 RTP/SCS may continue to impact nearby noise sensitive receptors and exceed acceptable standards. This impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

4.12.4 Cumulative Impacts

Noise resulting from roadway improvement projects envisioned in the proposed 2026 RTP/SCS could influence ambient noise levels in adjoining counties, if and where the projects are located in proximity to adjoining counties. Therefore, the cumulative impact analysis area for noise consists of the StanCOG region and the adjoining counties. Information regarding these adjoining counties can be found in Chapter 3, *Environmental Setting, 3.3.4 Approach for Cumulative Analysi*s. Future development in this region that would result in cumulative significant and unavoidable noise impacts is considered in the analysis.

Construction activities occurring throughout the StanCOG region, including public infrastructure projects and private development, contribute to ongoing localized construction noise conditions that can temporarily exceed local noise standards. When multiple construction activities overlap, cumulative construction noise levels may increase beyond what would occur from any single activity. Construction associated with implementation of the proposed 2026 RTP/SCS and the land use scenario it supports would add to these cumulative conditions. Although individual transportation projects and associated development are generally located far enough away from adjoining counties where construction noise would generally not combine with ambient noise levels in these areas. However, construction noise resulting from either the transportation projects or the land use scenario could combine with other ongoing noise or additional construction noise within the StanCOG region, resulting in localized construction noise levels exceeding local standards. Cumulative impacts of construction noise would be significant. Given the number, geographic distribution, and extended implementation timeframe of transportation improvements and development envisioned under the 2026 RTP/SCS, construction noise associated with the plan would incrementally contribute to cumulative construction noise conditions within the region. Implementation of Mitigation Measure N-1 would reduce some construction noise impacts;

however, the proposed 2026 RTP/SCS contribution to the cumulative impact would be cumulatively considerable.

Traffic noise from vehicles is a common cumulative condition affecting roadway corridors, generated predominantly from vehicles, such as the noise of engines or the noise generated from the friction between tires and the roadway surface. Generally, these noises affect ambient noise levels near the roadways. Across a broader geographic area, cumulative traffic activity on regional and inter-regional facilities can result in excessive noise conditions that exceed applicable thresholds. Implementation of the proposed 2026 RTP/SCS would increase traffic volumes on certain regional and inter-regional roadways, including facilities such as SR 99, in response to projected growth and planned transportation improvements. As a result, the proposed 2026 RTP/SCS would contribute to traffic noise outside the region. The cumulative impact would be significant, and despite implementation of Mitigation Measures N-2 and N-4, the contribution of the proposed 2026 RTP/SCS to cumulative traffic noise impacts would be cumulatively considerable.

Traffic growth associated with the implementation of the proposed 2026 RTP/SCS could result in increased roadway activity that could contribute to higher traffic noise levels on roadway segments throughout the cumulative impact analysis area. In combination with existing development and other cumulative conditions, these increases could exceed applicable noise thresholds in certain communities outside of the region. Even with implementation of Mitigation Measures N-3(a) and N-3(b) the proposed 2026 RTP/SCS could contribute to a cumulative traffic noise impact that would be cumulatively considerable.

Implementation of transportation projects in the proposed 2026 RTP/SCS would not involve the development of habitable structures or other facilities in which people would work or visit. Construction activities associated with transportation improvements could occur in close proximity to existing airports, resulting in temporary exposure of construction personnel to excessive noise levels. However, due to the temporary nature of construction of transportation projects, exposure would be limited in duration, and impacts would be less than significant. At a regional scale, the land use patterns supported by the proposed 2026 RTP/SCS, could result in residential or employment uses being located near existing airports or airstrips, where noise levels may exceed applicable thresholds. People residing or working in close proximity to existing airports could be exposed to excessive noise levels from aircraft. Therefore, the proposed 2026 RTP/SCS would contribute to the exposure of people residing or working in the area to excessive noise levels. The cumulative impact would be significant, and the overall contribution of the proposed 2026 RTP/SCS to exposure of people residing or working in the area to excessive noise levels, despite implementation of Mitigation Measure N-5. Impacts would be cumulatively considerable.

4.13 Population and Housing

This section analyzes the impacts of the proposed 2026 RTP/SCS relative to population and housing. In addition, this section includes a discussion of employment, as it pertains to population and housing factors in the region.

4.13.1 Setting

Existing Population, Housing, and Employment

Existing population, housing units and employment for unincorporated Stanislaus County and the eight cities in the StanCOG region are shown in Table 4.13-1. As of 2025, the region contains 555,765 residents, 187,534 housing units, 267,255 jobs, and 3.03 persons per household (California Department of Finance [DOF] 2025). From 2021 to 2025, the number of housing units in the StanCOG region increased by approximately four percent. As of 2025, the median home price in the region was approximately $489,900 (Realtor.com 2025).

Table 4.13-1 2025 Population, Housing and Employment for the StanCOG Region

Jurisdiction	Population	Housing Units	Persons Per Household	Jobs
Ceres	49,305	13,880	3.52	24,626
Hughson	7,977	2,699	3.06	1,310
Modesto	219,765	78,229	2.87	112,638
Newman	12,389	3,811	3.32	2,215
Oakdale	23,231	8,611	2.75	9,340
Patterson	25,868	7,501	3.57	10,996
Riverbank	26,090	8,013	3.31	5,387
Turlock	72,219	25,646	2.87	37,165
Waterford	9,169	2,794	3.37	1,054
Balance of County	109,752	36,350	3.16	62,524
StanCOG Total	**555,765**	**187,534**	**3.03**	**267,255**

Source: DOF 2025; Stanislaus County 2025a

Growth Forecasting

The 2025 Regional Growth Forecast projects the region's population, housing, and employment to 2050. The 2026 Regional Growth Forecast is used to support regional planning efforts, such as the Regional Travel Demand Model and the proposed 2026 RTP/SCS, as well as local planning efforts, such as the development of General Plans and project review.

The population, housing, and employment forecast estimates for the StanCOG region that are used in the proposed 2026 RTP/SCS are based on data from the University of the Pacific Center for Business and Policy Research. The economic and demographic forecasts were prepared using the Regional Economic Models (REMI), an econometric regional forecasting model. The REMI model uses historical data from several government sources to estimate economic and demographic forecast predictions at national, then regional levels. For the proposed 2026 RTP/SCS, the University of the Pacific's REMI model forecasts were generated at the county level, the smallest geography

available for the REMI model. The county-level forecast was then broken down to local areas using growth trends from available local data, with adjustments for consideration of local market factors and plans, based on University of the Pacific's local knowledge and consultation with local officials. StanCOG's proposed new growth forecast is summarized in Table 4.13-2 in Section 4.13.3, *Impact Analysis.*

4.13.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

Federal Uniform Relocation and Real Property Acquisition Policies Act

The Federal Uniform Relocation and Real Property Acquisition Policies Act (Uniform Act), 42 United States Code Section 4601 et seq., passed by Congress in 1970, is a federal law that establishes minimum standards for federally funded programs and projects that require the acquisition of real property (real estate) or displace persons from their homes, businesses, or farms. The Uniform Act's protections and assistance apply to the acquisition, rehabilitation, or demolition of real property for federal or federally funded projects.

Title 23 Code of Federal Regulations 450.322(f)

Title 23 Code of Federal Regulations 450.322(f) requires that Metropolitan Planning Organizations update the RTP using the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity.

b. State Laws, Regulations, and Policies

California Relocation Assistance Act

The California Relocation Assistance Act of 1971 (Government Code Section 7260 et seq.) is similar to the Uniform Act (federal). However, it applies to State and local programs and projects that receive State funding, regardless of whether they receive federal funding. The Act requires notification, counseling, social services, and financial assistance for persons displaced by transportation and land redevelopment projects. These procedural protections and benefits apply when the project causing the displacement has received State funding during any phase of the program or project, even if it did not receive federal funding.

Homeowners and Private Property Protection Act

Proposition 99, the Homeowners and Private Property Protection Act, was approved by voters in 2008. Proposition 99 amended the State Constitution and prohibits local agencies from using eminent domain to acquire owner-occupied residences and transferring it to private entities.

California Government Code Section 65583

California Government Code Section 65583 specifies the State Housing Element requirements. The Housing Element is one of the State-mandated elements of the General Plan and is updated every eight years. The California Department of Housing and Community Development is responsible for reviewing Housing Elements to ensure compliance with State law.

Regional Housing Needs Allocation

California Government Code Sections 65583(a)(1) and 65584 require that each Council of Government (COG) consult with the California Department of Housing and Community Development, which determines each region's existing and projected housing need through preparation of a Regional Housing Needs Determination. The COG is then responsible for allocating a share of the regional housing need to each city and county based on a COG-approved methodology.

The Regional Housing Needs Allocation (RHNA) Plan documents the preparation of the RHNA methodology and each jurisdiction's housing allocation. The existing and future need for housing is determined primarily by the forecasted growth in households in a community, based on historical growth patterns, job creation, household formation rates, and other factors to estimate how many households will be added to each community over the projection period. The housing need for new households is then adjusted to account for an ideal level of vacancy needed to promote housing choice, maintain price competition, and encourage acceptable levels of housing upkeep and repair. The Regional Housing Needs Determination also accounts for units expected to be lost because of demolition, natural disaster, or conversion to non-housing uses. The sum of these factors—household growth, vacancy need, overcrowding, cost burden, and replacement need—form the "determination" assigned to each region. Finally, RHNA considers how each jurisdiction might grow in ways that will decrease the concentration of low-income households in certain communities. The need for new housing is distributed among income groups so that each community moves closer to the regional average income distribution. StanCOG prepares RHNA Plan for Stanislaus County.

Housing Element Law

California's Housing Element Law (Government Code Sections 65580–65589.8), enacted in 1969, requires local governments to adequately plan to meet the housing needs of all economic segments of their communities. It mandates adoption of land use plans and regulatory systems that provide feasible opportunities for housing development without undue constraints. The California Department of Housing and Community Development plays a central role in reviewing local housing elements for compliance and issuing written findings. The law was strengthened in 2007 by Senate Bill (SB) 2, which requires jurisdictions to identify sites for emergency shelters and limits local discretion to deny emergency, transitional, and supportive housing developments.

Since then, multiple reforms have further enhanced housing element law and related regulations. Notably, SB 7 (2025) expanded participation requirements to include households with special housing needs (e.g., elderly, disabled, and farmworkers) and required the Department of Housing and Community Development to review and report on allocation methodologies in shorter time frames. Several 2024-2025 laws, including Assembly Bill (AB) 1886, clarify and expand provisions of the Housing Accountability Act and the "Builder's Remedy," closing loopholes local governments used to resist housing approvals and clarifying the conditions under which housing elements are "substantially compliant" with state law.

Additional recent legislation has also introduced new penalties for jurisdictions that persistently violate housing element law and increased enforcement authority for the Department of Housing and Community Development. These reforms facilitate more transparent public participation, require governmental constraints disclosures during housing element updates (as under AB 610 of 2025), and continue to support CEQA streamlining for housing projects. Laws like SB 450 (2024) and

SB 9 amendments further increase housing production feasibility by limiting local restrictions on subdivision and duplex developments.

Together, these ongoing legislative updates reinforce California's commitment to accelerating housing production, improving compliance with state housing goals, expanding protections for affordable housing developers, and ensuring local plans comprehensively address a broad spectrum of housing needs.

Senate Bill 375

SB 375 (Chapter 728, Statutes of 2008) focuses on aligning transportation, housing, and other land uses to achieve regional greenhouse gas (GHG) emission reduction targets established under the California Global Warming Solutions Act. SB 375 requires California metropolitan planning organizations to develop an SCS as part of the RTP. The SCS must:

- Identify the general location of land uses, residential densities, and building intensities within the region;
- Identify areas within the region sufficient to house all the population of the region;
- Identify areas within the region sufficient to house an eight-year projection of the regional housing need;
- Identify a transportation network to service the regional transportation needs;
- Gather and consider the best practically available scientific information regarding resource areas and farmland in the region;
- Set forth a forecasted development pattern for the region, which, when integrated with the transportation network, will reduce GHG emissions from automobiles and light trucks to achieve the GHG emissions reductions target approved by CARB; and
- Quantify the reduction in GHG emissions projected to be achieved by the SCS and, if the SCS does not achieve the targeted reductions, set forth the difference between the amount that the SCS would reduce GHG emissions and the target for the region.

SB 375 now synchronizes the schedules of the RHNA and RTP processes. The RHNA, which is adopted concurrently with the RTP, must also allocate housing units within the region consistent with the development pattern included in the SCS.

Existing law requires local governments to adopt a housing element as part of their general plan. Unlike the rest of the general plan, where updates sometimes occur at intervals of 20 years or longer, under previous law the housing element was required to be updated as frequently as needed and no less than every five years. Under SB 375, this period has been lengthened to eight years and timed so that the housing element period begins no less than 18 months after adoption of the RTP to encourage closer coordination between the housing and transportation planning completed by local governments and metropolitan planning organizations. SB 375 also changes the implementation schedule required in each housing element. Previous law required the housing element to contain a program that set forth a five-year schedule to implement the goals and objectives of the housing element. SB 375 instead requires this schedule of actions to occur during the eight-year housing element planning period and requires that each action have a timetable for implementation.

Senate Bill 330

The Housing Crisis Act of 2019 (SB 330) seeks to speed up housing production in the next half decade by eliminating some of the most common entitlement impediments to the creation of new housing, including delays in the local permitting process and cities enacting new requirements after a housing development application is complete and undergoing local review - both of which can exacerbate the cost and uncertainty that sponsors of housing projects face. In addition to speeding up the timeline to obtain building permits, the bill prohibits local governments from reducing the number of homes that can be built through down-planning or down-zoning or the introduction of new discretionary design guidelines.

Assembly Bill 130

Effective June 30, 2025, AB 130 introduces substantial reforms to streamline housing development under CEQA. The bill establishes a statutory CEQA exemption for qualifying infill housing projects located in urban areas up to 20 acres, provided they meet specific criteria such as adjacency to urban uses and avoidance of historic or environmentally-sensitive sites. This exemption is designed to reduce environmental review burdens for projects that align with local zoning and planning standards. AB 130 also makes several provisions of the Permit Streamlining Act permanent, including timelines for application completeness and project approval, and limits the number of public hearings for qualifying housing projects. In addition, the bill codifies elements of the Housing Accountability Act and SB 330, including protections for vested rights and restrictions on growth control measures. A notable provision is the statewide freeze on residential building code updates from October 1, 2025, through June 1, 2031, which aims to reduce regulatory uncertainty and development costs. AB 130 also enhances the role of the California Department of Housing and Community Development in overseeing RHNA methodologies, further aligning local planning efforts with state housing goals.

Senate Bill 131

SB 131 complements AB 130 by focusing on CEQA streamlining for infrastructure and public-serving projects. It introduces a new review pathway for “near miss” projects - those that narrowly fail to qualify for a CEQA exemption due to a single disqualifying condition. Under this provision, CEQA review is limited to the environmental effects of that specific condition, and such projects are exempt from analyzing alternatives or growth-inducing impacts. SB 131 also creates and expands CEQA exemptions for a range of project types, including advanced manufacturing facilities on industrial-zoned land, broadband infrastructure in public rights-of-way, updates to climate adaptation plans, High-Speed Rail maintenance facilities, and local rezoning actions that implement Housing Element commitments. In addition, the bill mandates biennial updates to the *CEQA Guidelines* to ensure regulations are current, mitigate litigation, and streamline housing and infrastructure development. These changes reflect a broader policy shift toward facilitating development while maintaining targeted environmental protections, and they are expected to significantly impact the planning and approval processes for both housing and infrastructure projects across California.

California Government Code Section 7261(a)

California Government Code Section 7261(a) requires that programs or projects undertaken by a public entity must be planned in a manner that (1) recognizes, at an early stage in the planning of the programs or projects and before the commencement of any actions which will cause

displacements, the problems associated with the displacement of individuals, families, businesses, and farm operations and (2) provides for the resolution of these problems in order to minimize adverse impacts on displaced persons and expedite program or project advancement and completion. The displacing agency must ensure the relocation assistance advisory services are made available to all persons displaced by the public entity. If the agency determines that any person occupying property immediately adjacent to the property where the displacing activity occurs is caused substantial economic injury as a result of the displacement, the agency may also make the advisory services available to that person.

c. Local Laws, Regulations, and Policies

General plans can be described as a city or county's "blueprint" for future development. They represent the community's view of its future; a constitution made up of the goals and policies upon which the planning commission and the city council and/or board of supervisors will base their land use decisions. To illustrate its importance, all subdivisions, public works projects, and zoning decisions (except in charter cities) must be consistent with the general plan. State law requires that each city and each county adopt a general plan containing the following seven components or "elements": land use, circulation, housing, conservation, open space, noise, and safety (California Code Sections 65300 et seq.). At the same time, each jurisdiction is free to adopt a wide variety of additional elements covering subjects of particular interest to that jurisdiction such as recreation, urban design, or public facilities.

Pursuant to SB 375, Housing Elements are required to be updated every eight years. Within the StanCOG region, Stanislaus County and the incorporated cities within each contain a periodically updated housing element. Each city emphasizes an array of affordable housing units that allow every resident of the County to attain a safe and sanitary living environment. Though each city differs regarding specific land use strategies to attain these goals, the lack of affordable housing is a common theme throughout the County; a plan to address this issue is a common theme throughout the region and addressed in the County's and incorporated cities' housing element updates.

The general plan of the largest jurisdictions that would experience the greatest impact from the proposed 2026 RTP/SCS, Stanislaus County, is detailed below.

Stanislaus County General Plan

The Stanislaus County General Plan guides the physical development, preservation, and conservation of areas within the unincorporated areas of Stanislaus County and identifies adopted goals, policies and implementation that govern development in unincorporated Stanislaus County. This document helps to ensure land use decisions are made in a manner that protects and furthers public interests related to the County's growth and development. It lays out specific goals for a safe and healthy community, a strong local economy and agricultural heritage, effective partnerships, a well-planned infrastructure system, and efficient delivery of public services and provides a land-use framework responsive to the needs and conditions of the unincorporated County in compliance with State general plan laws. It also lays out specific policies to guide and improve the county's employment. The General Plan Housing Element Update contains principles, policies and implementation programs that aim to improve the housing supply and the range of housing types and housing affordability levels. The goals of the General Plan Housing Element Update include the following (County of Stanislaus 2025b):

- **Goal 1.** Conserve and enhance the existing housing opportunities, viable housing stock, and neighborhoods in Stanislaus County.
- **Goal 2.** Assist in the development of housing affordable to lower- and moderate-income households.
- **Goal 3**. Increase housing production by providing adequate sites for a variety of housing types and removing constraints to residential development.
- **Goal 4**. Provide housing choices that serve the needs of special needs populations, including seniors, homeless, female-headed households, large families, and persons with disabilities.
- **Goal 5**. Ensure fair and equal housing opportunities.

City of Ceres General Plan

The City of Ceres' Housing Element focuses on addressing a significant shortfall in housing production by planning for 3,361 new units across all income levels, with an emphasis on affordable, multifamily, and special-needs housing. It prioritizes large specific plan areas, ADUs, zoning and permitting reforms, and infrastructure investment, while complying with state mandates such as Affirmatively Furthering Fair Housing. The plan aims to diversify housing types, reduce segregation, preserve existing affordable housing, and streamline development to better meet local and regional housing needs (City of Ceres 2025).

City of Modesto General Plan

The City of Modesto's Housing Element outlines a comprehensive strategy to accommodate roughly 11,248 new housing units by expanding mixed-use zoning, increasing density along key corridors, and promoting ADUs, duplexes, and infill development. Building on strong public outreach and past housing investments, the plan addresses affordability, homelessness, and special-needs housing through incentives, streamlined approvals, preservation of at-risk units, and extensive social service partnerships. A major focus is housing equity, bilingual outreach, and aligning land use with transit and community resources (City of Modesto 2024).

City of Turlock General Plan

The City of Turlock's Housing Element plans for 5,802 new housing units to respond to rapid growth, rising costs, and affordability challenges, with a strong emphasis on rezoning opportunity areas to allow higher-density, by-right multifamily housing. The plan combines large master-planned areas, downtown mixed-use development, ADUs, SB 9 opportunities, and partnerships with religious institutions to exceed RHNA requirements. It also emphasizes fair housing, infrastructure upgrades, anti-displacement strategies, and ongoing monitoring to ensure long-term compliance and housing availability across income levels (City of Turlock 2026).

Other City General Plans

Other incorporated cities within the StanCOG region are Hughson, Newman, Oakdale, Riverbank, Patterson, and Waterford. These cities, along with the vast majority of Stanislaus County, include areas of farmland. Population growth in Stanislaus County has led to, and will continue to lead to, land use conflicts between conflicting urban and agricultural uses, which has led to several cities in the StanCOG region to incorporate policies within their general plans to address this growing issue. Therefore, most cities have incorporated policies in their general plan updates that acknowledge population growth while protecting agricultural lands. In conjunction with an emphasis on infill

development, avoidance of land use conflicts when feasible, and the conversion of farmland when no other option is available, cities within the StanCOG region have been able to manage to balance this issue with similar goals and policies. Noise, safety, circulation, and open space elements are common to each city's general plan and all work towards these goals.

4.13.3 Impact Analysis

a. Methodology and Significance Thresholds

The methodology for determining the significance of population and housing impacts compares the existing conditions to projected future horizon year 2049 conditions, as required in *CEQA Guidelines* Section 15126.2(a). The 2026 RTP/SCS includes transportation projects and a land use growth pattern that may influence population, housing, and employment growth. The analysis herein analyzes the potential impacts of transportation projects and the land use pattern proposed in the 2026 RTP/SCS.

Appendix G of the *CEQA Guidelines* identifies the following criteria for determining whether a project's impacts would have a significant impact to population and housing:

1. 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); and/or
2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

b. Project Impacts and Mitigation Measures

The following section discusses potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2026 RTP/SCS. Due to the programmatic nature of the proposed 2026 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not feasible at this time. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the proposed 2026 RTP/SCS could result in the impacts described in the following section.

Threshold 1:	Would the project 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)?

Impact POP-1 TRANSPORTATION AND LAND USE PROJECTS IMPLEMENTING THE PROPOSED 2026 RTP/SCS WOULD NOT INDUCE SUBSTANTIAL UNPLANNED POPULATION GROWTH, EITHER DIRECTLY OR INDIRECTLY. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

From 2025 to 2050, the region's total population is forecasted to increase by 551,907 residents to 587,479 residents. Table 4.13-2 shows the forecasted population growth for the region as a whole and by jurisdiction between 2025 and 2050, the closest year with available forecast data to the 2026 RTP/SCS buildout year of 2049.

Table 4.13-2 Forecasted Population Growth for the StanCOG Region

Year	Population	Housing Units	Jobs
2025	551,907	175,744	267,255
2030	554,704	176,627	269,469
2035	561,445	178,771	275,725
2040	568,871	181,134	281,340
2045	577,903	184,009	287,050
2050	587,479	187,057	293,063

Source: StanCOG 2025a

As shown in Table 4.13-2, the regional population is forecasted to increase by approximately 6.4 percent from 2025 to 2050. The proposed 2026 RTP/SCS would accommodate planned population growth directly through the development of the SCS land use scenario and indirectly as a result of the transportation projects included in the proposed 2026 RTP/SCS. Between 2025 and 2050, the StanCOG region would grow by approximately 35,572 people, 11,879 housing units, and 25,808 jobs. The land use scenario envisioned by the proposed 2026 RTP/SCS would encourage infill, mixed use, and transit-oriented development within existing urbanized areas. The scenario also consists of an intensified land use distribution approach that concentrates the forecasted population and employment growth in existing urban areas. The scenario emphasizes compact, mixed-use development, especially in the downtowns of the County's existing urban areas. This focus intends to limit growth outside of city boundaries in order to minimize impacts on rural areas that contain the majority of agricultural land throughout the County. The transportation network scenario also includes additional highway, local street, active transportation, and transit investments to serve a more concentrated urban growth pattern.

Government Code Section 65080(b)(2)(B)(ii) requires that an RTP/SCS accommodate all the population of the region, including all economic segments of the population, over the course of the planning period of the regional transportation plan. In compliance with these requirements, the proposed 2026 RTP/SCS includes strategies to accommodate new housing units through 2049. The housing strategies would continue the StanCOG region's commitment to growth in infill areas but are also intended to protect current residents from displacement, preserve existing affordable housing, and produce new housing to secure long-term affordability for lower income populations. As mandated by State Housing Law as part of the periodic (every eight years) process of updating local General Plan Housing Elements, the California Department of Housing and Community Development provides a Regional Housing Needs Determination to StanCOG. StanCOG is responsible for developing a methodology for the allocation of the Regional Housing Needs Determination regional to jurisdictions in Stanislaus County. StanCOG must have enough housing capacity to accommodate the RHNA allocations for the current (6th Cycle), and local governments will be responsible for accommodating their 6th Cycle RHNA allocations in their housing element updates.

Implementation of the proposed 2026 RTP/SCS land use development pattern would in some cases result in greater density/intensity of growth than included in current adopted local general plans because the 2026 RTP/SCS is designed to meet long-term sustainability and climate goals, such as reducing GHG emissions, by promoting compact, transit-oriented development, which may exceed the density levels currently permitted by local jurisdictions. The proposed 2026 RTP/SCS would not change local land use policies; individual jurisdictions retain land use authority. As such,

implementation of the proposed 2026 RTP/SCS would require local jurisdictions to consider and resolve those differences through appropriate amendments to local planning documents, including Housing Element updates, and appropriate environmental review, thus avoiding impacts related to unplanned growth at the local level.

The proposed 2026 RTP/SCS would accommodate forecasted growth through implementation of the envisioned proposed 2026 RTP/SCS land use strategies to intensify density in developed areas, rather than induce unplanned growth. Transportation projects included in the proposed 2026 RTP/SCS would not induce population growth because these projects would be growth-accommodating and are generally intended to improve existing transportation networks. The transportation projects included in the proposed 2026 RTP/SCS would result in increased transit use and an increase in regional VMT above the Baseline (2025) Conditions as a result of expanded public transit fleets (see Section 4.14, *Transportation*, for additional information). By improving community connectivity, expanded transit fleets would support more compact, sustainable, and efficient development without inducing the type of population growth that would require development of more land for urban purposes. The land use and transportation projects in the proposed 2026 RTP/SCS would therefore not result in substantial unplanned population growth. Impacts from implementation of the proposed 2026 RTP/SCS would be less than significant.

Mitigation Measure

Mitigation measures are not required because this impact would be less than significant, as jurisdictions are required to follow the protection policies and ordinances as described above.

Threshold 2:	Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Impact POP-2 TRANSPORTATION AND LAND USE PROJECTS INCLUDED IN THE PROPOSED 2026 RTP/SCS WOULD TEMPORARILY DISPLACE EXISTING HOUSING AND PEOPLE BUT WOULD NOT NECESSITATE THE CONSTRUCTION OF REPLACEMENT HOUSING ELSEWHERE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Land use development included in the proposed 2026 RTP/SCS would likely displace existing housing and people, primarily low and medium density single family and multi-family dwelling units, as existing housing units are demolished to make way for new development. However, new residential development would generally occur at higher densities and be more modern, frequently as part of mixed-use development. During construction of individual projects, residents may be temporarily displaced. However, there are normal factors in the marketplace to offset this impact. Historically, vacancies within the existing housing stock absorb displacement of residents.

Transportation project under the proposed 2026 RTP/SCS would also not result in any significant housing displacement impacts. Existing laws and regulations require the provision of assistance in relocating households for federally funded transportation projects. As described in Section 4.13.2, *Regulatory Setting*, the Uniform Act and California Relocation Assistance Act require public agencies to provide relocation assistance when a federally or State funded action by the agency displaces residences. Thus, impacts from short-term displacement would be reduced through both existing regulation and normal market factors.

In the long run, the proposed 2026 RTP/SCS would result in a net increase in housing units. Between 2025 and 2050, the projected increase in housing capacity in the region would be 11,879 units, or an increase of 6.4 percent (County of Stanislaus 2025a). The 2026 RTP/SCS would result in a net increase in housing units, but would displace existing housing or people temporarily as some

residential structures are demolished to make way for new development. However, displacement would not be substantial and would be minimized through existing housing programs within the StanCOG region. Displacement would not necessitate the construction of replacement housing. In effect, the proposed 2026 RTP/SCS includes the replacement housing that would be necessitated by individual projects.

Some transportation network improvements, such as road widening or extension projects, would require acquisition of right-of-way in areas with high-density housing or businesses along transportation corridors and may displace residential or commercial units. Specific projects would be required to undergo separate environmental review under CEQA. The corresponding project-specific environmental documentation would identify potentially significant impacts with regard to displacement of private property, if any, and provide the appropriate mitigation measures. Impacts from federally and State funded transportation improvements would consider relocation assistance in accordance with the Uniform Act and California Relocation Assistance Act. In addition, as noted above, the proposed 2026 RTP/SCS would result in a net increase of 11,879 housing units in the region. Therefore, in effect, the RTP/SCS includes the replacement housing that would be necessitated by individual projects. As a result, impacts related to housing and population displacement would be less than significant.

Mitigation Measures

Mitigation measures are not required because this impact would be less than significant, as jurisdictions are required to follow the protection policies and ordinances as described above.

4.13.4 Cumulative Impacts

The cumulative impact analysis area for population and housing consists of the StanCOG region and adjoining counties. Information regarding these adjoining counties can be found in Chapter 3, *Environmental Setting, 3.3.4 Approach for Cumulative Analysi*s. This cumulative extent is used to evaluate potential unplanned population growth or displacement of housing, within the context of region.

Development in the cumulative impacts analysis area would result in population growth. Generally, the population growth in the cumulative impacts analysis area is planned for in general plans developed and adopted by counties and cities in the area. For example, the City of Modesto recently updated its General Plan to accommodate growth expected in the City through 2050. While most jurisdictions have already adopted and approved their respected cycle housing elements, several cities and counties in the region are still updating their general plans if they are out of compliance. General plan housing element growth projections are based on RHNA mandates from the state to meet housing needs targets distributed among jurisdictions by income level, based on the region's growth forecasts, housing need, and statutory factors. In contrast, the proposed 2026 RTP/SCS uses demographic, economic, and travel modeling to forecast where and how regional population, housing, and jobs will grow over a long-term horizon. These forecasts guide regional land use patterns, transportation investments, and policies to meet climate and mobility goals. Because population growth would be planned for in both jurisdiction general plan housing elements and regional RTP/SCS's for adjoining counties, cumulative impacts related to inducing substantial unplanned population growth would be less than significant.

The general plans and zoning ordinances of counties and cities also designate areas for housing development to accommodate planned population growth. While some development may require the demolition of existing housing, each county and city in the cumulative impacts assessment area

must continue to demonstrate it can meet housing requirements established through the RHNA program, enacted throughout the state. Cumulative impacts related to displacement are potentially significant. However, additional population, housing, and employment, as forecasted, would occur with or without implementation of the proposed 2026 RTP/SCS. The proposed 2026 RTP/SCS provides a strategy to accommodate growth in such a way as to achieve a more balanced jobs/housing ration and to optimize transportation projects that support those land uses. The land use growth footprint assumes several residential units adequate to meet the forecasted demand, taking into account localized displacement of some households within the region. Therefore, implementation of the proposed 2026 RTP/SCS would not result in displacement at the regional scale, and localized displacement would not be expected to increase development in areas surrounding the StanCOG region. Thus, while the cumulative impact related to displacement would be potentially significant, the proposed 2026 RTP/SCS's contribution to the cumulative impacts related to population and housing would not be cumulatively considerable.

4.14 Transportation

This section examines the impacts of the proposed 2026 RTP/SCS on transportation conditions.

4.14.1 Setting

The environmental setting is a description of existing conditions relevant to transportation within the StanCOG region, including nine incorporated cities (Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock, and Waterford) as well as the unincorporated communities in Stanislaus County. The existing transportation system in the StanCOG region consists of a complex network of State highways, County-maintained roads, and local streets; transit services; a series of bicycle paths and pedestrian walkways; railroad lines; and a number of aviation facilities.

Roadway Network

Stanislaus County contains more than 1,500 miles of road infrastructure in unincorporated areas (County of Stanislaus 2016a), along with approximately 1,341 miles in incorporated cities (StanCOG 2022). The regional roadway network in the unincorporated areas of Stanislaus County is primarily organized as a grid-based system of rural two-lane roads connecting individual communities and providing access to agricultural fields, while urban development is mainly concentrated in the central and western portions of the county within the nine incorporated cities (County of Stanislaus 2016a). Road infrastructure includes approximately 183 miles of US Highway and State Routes, 1,546 miles of county roads, and 1,245 miles of local roads and streets maintained by incorporated cities (StanCOG 2026).

The primary transportation corridors in the StanCOG region include Interstate 5 (I-5), a four-lane freeway that traverses the western side of Stanislaus County in a north-south corridor, and State Route (SR)-99, a six-way freeway that traverses the central portion of Stanislaus County in a north-south corridor (County of Stanislaus 2016a). Both I-5 and SR-99 serve all of the county's major population centers. Other multi-lane state highways in the county include SR-4, a two-lane east-west facility that runs through the northeastern part of the county; SR-33, a two-lane north-south facility that parallels I-5 on the western side of the county; SR-108, a primarily east-west facility that travels through the center of the cities of Modesto, Riverbank, and Oakdale; SR-120, an east-west facility that travels through the city of Oakdale and near the unincorporated community of Knights Landing in the northeastern part of the county; SR-132, a primary east-west facility that travels the width of the County from Interstate 580 and I-5 just west of the San Joaquin County line to Coulterville in Mariposa County; SR-165, a north-south facility located in the southern portion of the county; and, SR-129, a short east-west facility that begins at an interchange with SR-99 in the unincorporated community of Salida and ends at an interchange with SR-108 east of the unincorporated community of McHenry (County of Stanislaus 2016). Smaller arterial facilities that provide for regional travel and connect the cities and unincorporated communities within Stanislaus County include Santa Fe Avenue (county Route J7), Geer/Albers Road (J14), Howard/Grayson Road (J16), Keyes Road (J16), West Main Street/Las Palmas Avenue (J17), Crows Landing Road, and a portion of McHenry Avenue (J6) (County of Stanislaus 2016a).

The functional classification system of roadways within the StanCOG region is generally based upon the Federal Highway Administration (FHWA) Functional Classifications System of Streets and Highways. The local classifications used by each of the nine major incorporated cities in the StanCOG region also generally follow the FHWA functional classification system, with each city

maintaining a variety of arterials, collectors, and local streets. The design standards, geometrics, and the overall specific design criteria for each street classification varies slightly between each jurisdiction. Figure 4.14-1 identifies the major roadways within the StanCOG region along with the classification of each.

Operations

A variety of performance measures are used to assess transportation systems. Depending on the type of performance evaluation required, performance measures may be very specific and focus on intersections or roadway segments, or performance measures may be aggregated to evaluate the overall operation of a regional transportation system. A regional travel model typically only contains information on the number of lanes, posted speed and link capacity on roadway segments and lacks information detailed enough to calculate accurate intersection information.

Because of the programmatic nature of the proposed 2026 RTP/SCS, the performance measures discussed herein are aggregated as a region to evaluate the overall performance of the transportation system. Roadway transportation performance measures that address performance goals include:

1. Total vehicle miles traveled (VMT); and,
2. VMT per capita.

The basic measure of the amount of roadway transportation generated is VMT. One vehicle traveling one mile constitutes one vehicle mile traveled, regardless of the size of the vehicle or the number of passengers in the vehicle. Increases in VMT are associated with regional growth that would occur with or without implementation of the proposed 2026 RTP/SCS. Thus, VMT data may not reflect deficient traffic operations,[1] although VMT may have a strong correlation with congestion.

Baseline VMT data for the StanCOG region is shown in Table 4.14-1, below. The 2023 baseline is used as the baseline for analysis within this EIR for technical sections relying on RTP/SCS modeling data, this includes transportation impacts, air quality, energy, and greenhouse gas. Total VMT data accounts for all vehicle types and all travel within the region, including trips that originate and/or end outside of the StanCOG region, and that pass-through the region without having an origin or destination within the StanCOG region.

Table 4.14-1 Baseline VMT for StanCOG Region

Baseline	Regional VMT	VMT per Capita[1]
2023 (2026 RTP/SCS Baseline)	11,736,343	21.29

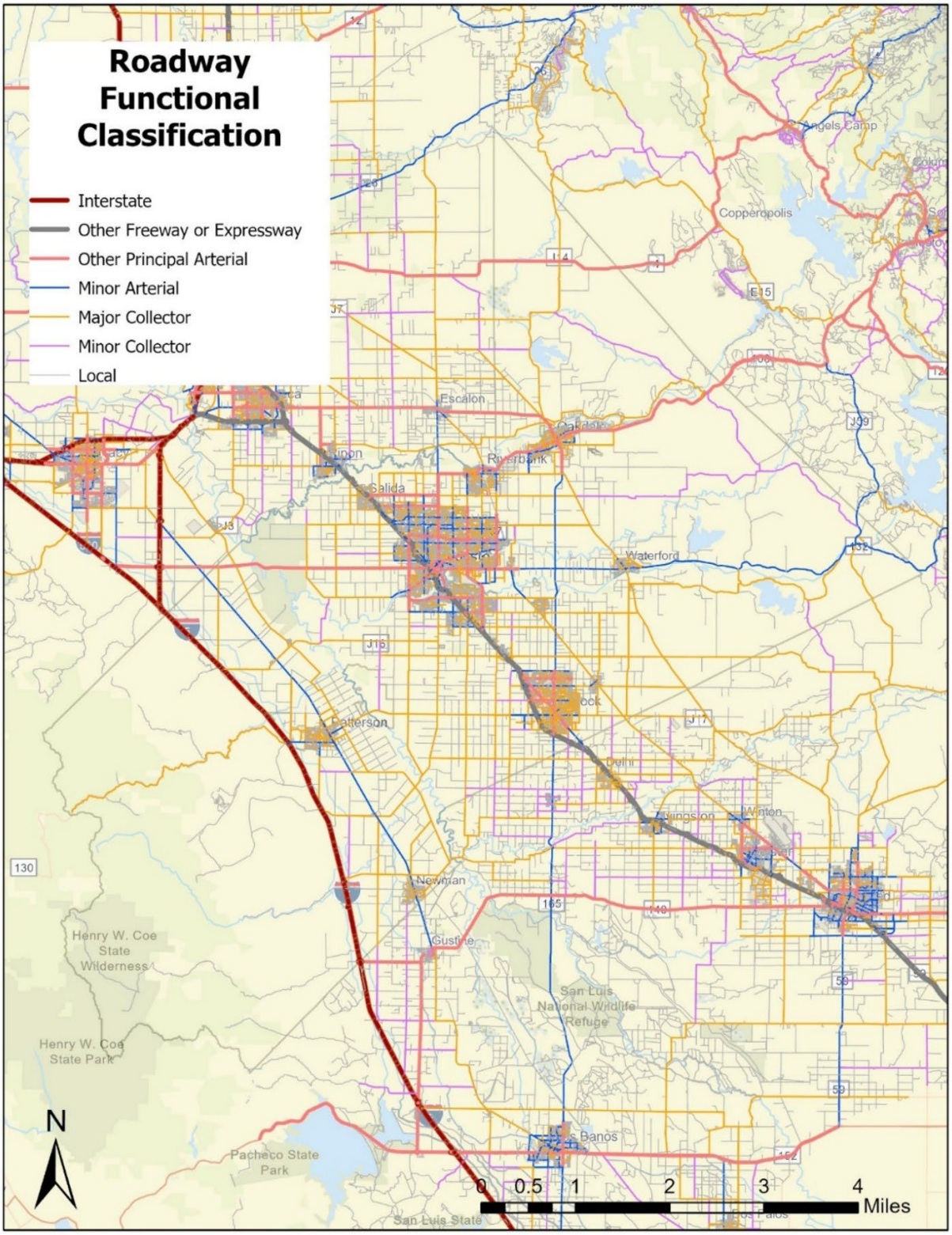
Source: StanCOG Model, Appendix E

[1] VMT per capita is based on a population size of 551,297 persons (California Department of Finance 2025)

Comprehensive documentation of the modeling methodology, assumptions, calibration, and inputs used for the StanCOG Model is provided in Appendix E of this EIR.

[1] Traffic operational measures such as roadway congestion and delay are not considered CEQA impacts.

Figure 4.14-1 Major Roadways and Classifications



Source: StanCOG 2026 RTP/SCS

Public Transit

The Stanislaus Regional Transit Authority (StanRTA) operates 32 reliable and convenient fixed-route transit services in addition to intercity shuttle services, commuter shuttles, Medivan services, Dial-a-Ride services, and Americans with Disabilities Act complementary paratransit services. A majority of StanRTA's service area is within the Cities of Ceres, Modesto, and Turlock along SR-99. However, StanRTA also provides exclusive service to other rural areas in the region, as well as to areas in unincorporated Stanislaus County. StanRTA's weekday service begins as early as 3:00 a.m. and ends as late as 11:30 p.m. Saturday service is provided as early as 7:00 a.m. and ends as late at 10:00 p.m., while Sunday service operates from 8:45 a.m. to 8:15 p.m. (StanCOG 2026). Specific route and schedules can be references on the StanRTA website (StanRTA 2026).

In addition to StanRTA, a single intra-city bus line still operates within the StanCOG region. The City of Turlock operates Turlock Transit, offering six fixed routes in addition to Dial-A-Ride services. General weekday hours of operation are from 6:00 a.m. to 9:00 p.m., and Saturday service is provided from 9:00 a.m. to 7:00 p.m. on all six fixed routes (StanCOG 2026).

Other public transportation carriers within the StanCOG region include the Altamont Commuter Express, a commuter train that runs between Stockton and San Jose with stations in Stockton, Lathrop-Manteca, Tracy and various stops in the Bay Area; San Francisco Bay Area Rapid Transit, a commuter train service running from Dublin-Pleasanton to various Bay Area locations; Amtrak, a commuter train that runs through the San Joaquin Valley and throughout the United States; and, Greyhound, a passenger bus service with stops in both Modesto and Turlock (StanCOG 2021b; StanCOG 2026).

Rail

Passenger rail in the StanCOG region is facilitated by the Altamont Commuter Express, San Francisco Bay Area Rapid Transit, and Amtrak. Rail freight operations in Stanislaus County include high speed mainline operations on the BNSF Railway and Union Pacific Railroad as well as low speed mainline and switching operations on the BNSF Railway, Union Pacific Railroad, Sierra Railroad, California Northern Railroad, Modesto and Empire Traction Company Railroad, and Tidewater Southern Railroad (Stanislaus County 2016b).

The Union Pacific Railroad in Stanislaus County includes operations on the main line which passes through Salida, Modesto, Ceres, Keyes, and Turlock (north to south). The Union Pacific Railroad also operates on the California Northern Railroad line located on the west side of the Stanislaus County, passing through Westley, Patterson, Crows Landing, and Newman. Operations on the BNSF Railway in Stanislaus County occur on the mainline, which runs through Riverbank, Hughson, Empire, and Denair. A branch line connects the mainline at Riverbank with the Sierra Railroad in Oakdale. The Sierra Railroad operates between Oakdale and Standard in Tuolumne County. The Sierra Railroad freight trains are operated by Union Pacific and BNSF, which typically operate roughly three times per week. The Modesto and Empire Traction Company is a short-line railroad that connects switching operations between the Union Pacific Railroad in Modesto and the BNSF Railway in Empire. Train lengths can vary from one locomotive with four cars to up to several locomotives with 60 cars. The Tidewater Southern Railroad is a branch line operation of the Union Pacific Railroad. The line runs in a general north-south route through Stanislaus County, from the City of Stockton to North Modesto and from the City of Turlock to South Modesto. The portion of the line from just south of Bangs Avenue through Modesto to Bonniefair was abandoned in 2000, and sections were removed or paved over in 2003. North of Bangs Road, operations typically occur three days per

week on Tuesday, Thursday, and Saturday. However, service may be operated more or less frequently depending on demand.

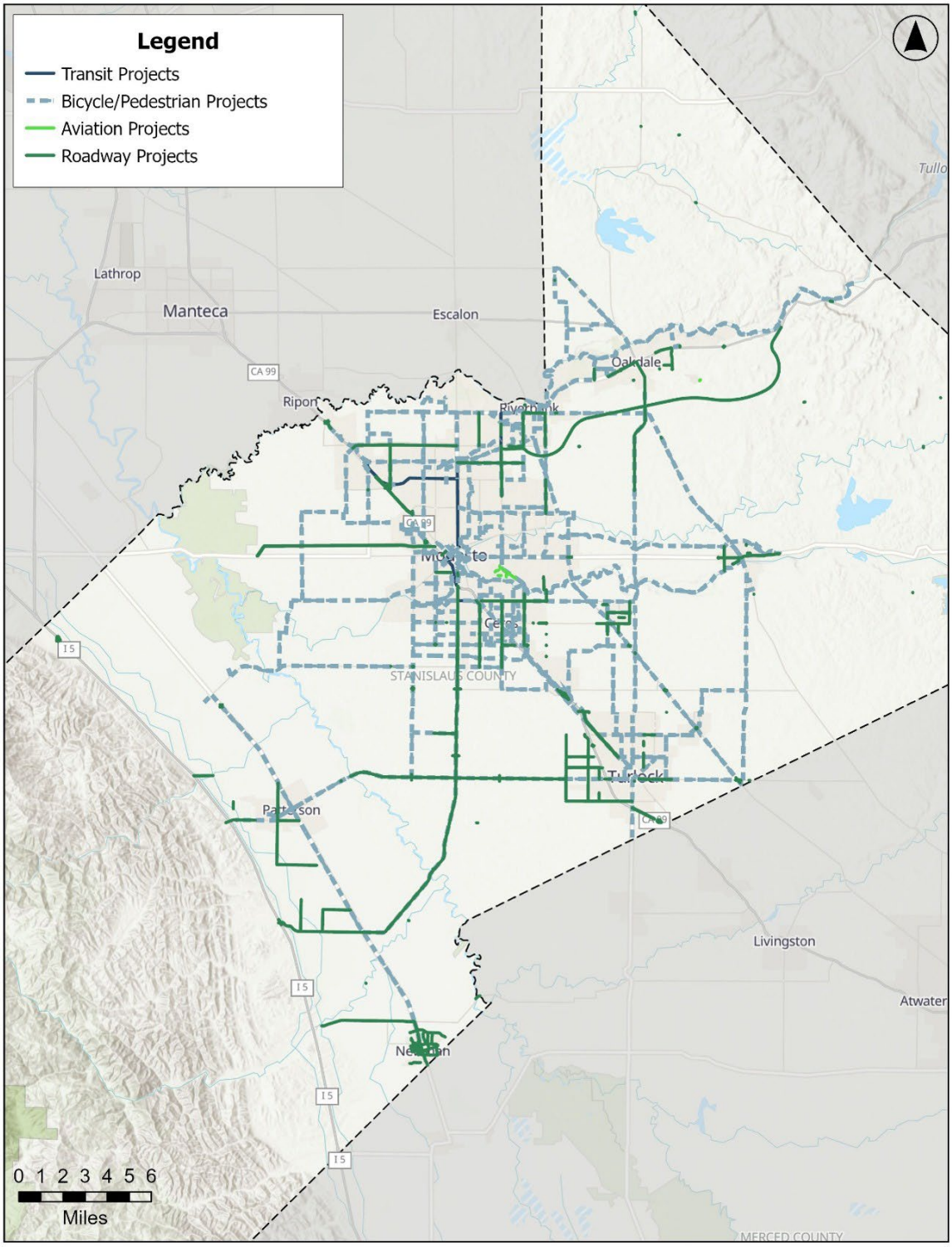
Active Transportation (Bicycle and Pedestrian Facilities)

Both bicycling and walking within the StanCOG region are attractive transportation alternatives due to the relatively flat topography and temperate climate during much of the year. Bikeways are facilities that provide primarily for, and promote, bicycle travel. The five types of bikeways identified by the California Manual on Uniform Traffic Control Devices and recognized in the StanCOG region are identified below (Caltrans 2026).

- **Class I (Off-Street Bike Paths or Multi-Use Paths).** A Class I bikeway provides physical separation from motor vehicles and are often fully separated from the street. Interactions between bicyclists and vehicles are limited to roadway crossings.
- **Class II (On-Street Bicycle Lanes).** A Class II bikeway is striped adjacent to vehicle travel lanes, delineated either by a solid white line or by a larger hatched buffer space.
- **Class III (Bike Routes).** A Class III bikeway designates certain roadways as preferred streets for bicyclists. They typically include wayfinding signage for bicyclists as well as additional signage to increase driver awareness to the potential presence of bicyclists. Bicycle boulevards are a specific type of Class III Bike Route, best suited for low-speed, low- volume neighborhood streets with traffic calming enhancements. Rural bike routes are another type of Class III Bike Route that usually feature wide shoulders, striping, and intermittent rumble strips to provide space for cyclists to ride on rural roads or highways.
- **Class IV (Separated Bike Lanes).** A Class IV bikeway is located on the street, adjacent to vehicular traffic. Separated bike lanes provide more physical separation between bicyclists and motor vehicles than Class II, as separation always includes both vertical separation (parked vehicles, raised concrete curbs, planters, bollards, etc.) and horizontal separation (striped buffer, landscaped areas, etc.).

Information regarding existing bicycle facilities in Stanislaus County was gathered in coordination with local jurisdictions as part of the 2021 StanCOG Non-Motorized Transportation Plan. The existing bicycle facilities in the StanCOG region and their classifications are presented in Figure 4.14-2, below, while the existing mileage of each bikeway classification in the StanCOG region is presented in Table 4.14-2.

Figure 4.14-2 Existing Bicycle Facilities in StanCOG Region



Source: StanCOG 2026 RTP/SCS

Table 4.14-2 Bikeway Mileage in the StanCOG Region by Classification

Bikeway Class	Mileage
Class I (Multi-Use Path)	45
Class II Bicycle Lane	103
Class III (Bike Routes)	57
Class IV	0.7
Total	205.7

Source: StanCOG 2021b

A large majority of roadways in Stanislaus County (95 percent) do not have any designated bikeways. Most roadways with associated bikeways are found in incorporated areas with dense street networks. In general, the existing bicycle network within each incorporated jurisdiction serves only some key destinations and residential areas. While the Cities of Modesto and Turlock have the most bikeway miles within their jurisdictions, these networks still have several gaps that do not provide all communities with access to key destinations. There is very limited bicycle network connectivity between the incorporated cities (StanCOG 2021b).

In addition to bicycling, walking is another active transportation option in the StanCOG region. Common pedestrian facilities include well-connected sidewalks with crossing treatments, multi-use paved trails, unpaved pedestrian trails, pedestrian signals, and paved shoulders. However, there are still many locations in Stanislaus County that lack sidewalks or designated pedestrian walkways (StanCOG 2021b).

Air Transportation

Stanislaus County currently has nine operational private and public airports and heliports (Federal Aviation Administration [FAA] 2018). Stanislaus County also contains the publicly owned and privately used Crows Landing Airport, formerly the Crows Landing Naval Auxiliary Landing Field (County of Stanislaus 2016c); however, this airport is closed indefinitely, according to the FAA (FAA 2018). As shown in Table 4.14-3, one of the nine operational aeronautical facilities in the StanCOG region is a heliport: the privately owned and privately used Emanuel Medical Center heliport. The eight operational airports in Stanislaus County, and their affiliated ownership and use, are also listed in Table 4.14-3, below.

The two publicly owned and operated airports in Stanislaus County include Modesto City-County Airport and Oakdale Municipal Airport. As Stanislaus County's largest airport, the Modesto City-County Airport provides daily commercial service to San Francisco. However, the airport primarily offers general aviation services for non-commercial flights (Stanislaus County 2016c). The airport is located approximately two miles east of downtown Modesto and is regionally accessible by SR-132. Oakdale Municipal Airport is a 117-acre exclusively general aviation facility served by a single runway, located approximately 2.5 miles east of the City of Oakdale (Stanislaus County 2016b). The airport, which is accessible from Sierra Road and Laughlin Road, is classified as an ARC A-I airport, indicating that it can only accommodate small aircraft weighing less than 12,500 pounds (Stanislaus County 2016b).

Table 4.14-3 Airports and Heliports in StanCOG Region

Name of Facility	Type of Facility	Ownership[1]	Use[1]	Airport Status Code[2]
Crows Landing	Airport	PU	PR	CI
Flying Bull	Airport	PR	PR	O
Mapes Ranch	Airport	PR	PR	O
Modesto City-County Airport	Airport	PU	PU	O
Oakdale Municipal Airport	Airport	PU	PU	O
Del Mar Farms	Airport	PR	PR	O
Emanuel Medical Center	Heliport	PR	PR	O
Turlock Airpark	Airport	PR	PR	O
Valley Crop Dusters, Inc	Airport	PR	PR	O
Crows Landing	Airport	PU	PR	CI

1. PU = Public; PR = Private
2. CI = Closed Indefinitely; O = Operational

Source: FAA 2018

Emerging Travel and Mobility Options and Technology

New transportation technologies can have an important influence on regional and national transportation systems, and some have already started to change longstanding transportation behaviors. Transportation innovations include the following: on-demand ridesharing; connected and autonomous vehicles; mobility aggregation applications that provide users with one source for mobility services (e.g., Moovel, CityMapper); transportation network companies (i.e., Lyft, Uber); coordinated and adaptive traffic signals; active traffic management, which provides the ability to dynamically manage traffic through use of strategies such as adaptive ramp metering and adaptive traffic signal control; and unmanned aircraft systems. These and other emerging technologies have the potential to transform mobility choices and alter the transportation landscape The effect these technologies will have on the transportation system is uncertain and will be shaped by regulations and policies surrounding their use.

Transportation Demand Management/Transportation System Management

Transportation Demand Management refers to all programs and strategies that are intended to reduce the number of vehicle trips required over the transportation network or shift the distribution of trips between time periods across the network (FHWA 2012). Transportation System Management represents a variety of management techniques designed to improve the efficiency and effectiveness of the transportation system. These techniques improve operations and/or services of existing and future transportation networks (FHWA 2012).

Vehicle Flow Management

The Department of Energy's Fuel-Efficient Traffic Signal Management Program has assisted in increasing the number of synchronized traffic signals within the region to promote free flowing vehicle transportation conditions, less use of vehicle fuel, and decreased pollution due to less vehicle miles traveled. In the past, some jurisdictions have implemented minor design improvements to the existing transportation infrastructure in lieu of costly capital construction or

reconstruction. In the future, signalization, channelization, and the construction of acceleration and deceleration lanes with ramp metering at key interchanges are expected to achieve roadway vehicle flow improvements.

Intermodal Transportation

Transportation engineers and planners in the StanCOG region have employed one or more of the following methods of enhancing intermodality to increase the use of the existing transportation capacity more efficiently:

1. Coordinate transit routes and schedules with those of inter-city rail and bus service;
2. Provide amenities and facilities for bicycle and pedestrian access to transit stops;
3. Facilitate and encourage access to the regional air carrier airport by paratransit, transit, taxi, transportation network companies and bicycle; and
4. Provide park and ride facilities with bicycle, pedestrian and transit access amenities.

Ridesharing

Rideshare programs help reduce congestion and improve traffic flow. Regionally, StanCOG operates a rideshare program serving the City of Modesto. The rideshare program is designed to facilitate carpooling, vanpooling, bicycling, walking, and riding transit.

Preferential Transit/Carpool Treatment/Electric Vehicle Charging

Methods employed by local jurisdictions to encourage people to reduce their use of single-occupant vehicles include preferential parking for carpools and vanpools; subsidized transit passes; use of agency vans for vanpooling; and provision of an on-site transportation coordinator. Regional transit agencies strive to ensure that major developments within their service areas are transit accessible and that transit stops are located to promote transit use.

Shared Parking Facilities

Parking management refers to programs that result in more efficient use of parking resources and can either provide an incentive or disincentive to single occupant vehicle use. Parking facilities that are shared between multiple users and destinations are found within the region. Park and ride lots are a form of off-site shared parking facilities that facilitate ridesharing. Park and ride lots within the region have been placed in locations where people can easily meet and form carpool trips, such as the park and ride facility located near the Roger K. Fall Transit Center in Turlock. Parking garages are also associated with shared parking in the StanCOG region and are often located near destinations attracting a large number of visitors. Parking regulations which control when and how long vehicles may park and the cost of the parking in a location is another form of parking management.

4.14.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

U.S. Department of Transportation Metropolitan Transportation Plan Requirements

Pursuant to Title 23 of the Code of Federal Regulations (CFR), Section 450.324 and Title 49 U.S. Code Section 5303, every Metropolitan Planning Organization (MPO) is required to prepare a MTP, also known as an RTP. The MTP or RTP serves as a long-range planning document that outlines strategies and investments to develop and maintain multimodal transportation system over a minimum 20-year horizon, while remaining fiscally constrained. The plan must be updated every five years in attainment areas and every four years in nonattainment or maintenance areas for air quality. The MTP or RTP must address current and projected transportation demand, identify existing and proposed transportation infrastructure, and report on progress toward meeting performance targets (U.S. Department of Transportation Federal Transit Administration 2022).

Infrastructure Investment and Jobs Act/Bipartisan Infrastructure Law

The Infrastructure Investment and Jobs Act (IIJA), also known as the Bipartisan Infrastructure Law (Public Law 117-58), was signed into law on November 15, 2021. The IIJA reauthorizes surface transportation programs through fiscal year 2026 and builds upon the policy framework and performance-based planning provisions established under Moving Ahead for Progress in the 21st Century Act and the Fixing America's Surface Transportation Act. The IIJA maintains the core metropolitan and statewide transportation planning requirements under 23 U.S. Code § 134 and § 135, while expanding the scope of planning to further address climate change, equity, resiliency, and infrastructure modernization. In the development of the MTP and RTPs, the IIJA continues to require MPOs and regional transportation planning agencies (RTPAs) to:

- Coordinate with officials responsible for other types of planning activities affected by transportation, such as land use, housing, economic development, environmental protection, freight, and emergency management.
- Engage traditionally underserved and disadvantaged communities to ensure equitable access to transportation planning and project benefits.
- Incorporate consideration of climate change, environmental justice, and resilience, particularly regarding the impact of extreme weather and natural disasters on transportation infrastructure.
- Improve infrastructure condition, safety, and system efficiency, while supporting economic vitality, freight mobility, and multimodal connectivity.

The IIJA adds emphasis on:

- Reducing greenhouse gas emissions through transportation planning and investments.
- Increasing resilience to natural hazards and climate-related events.
- Investing in complete streets, bicycle/pedestrian infrastructure, and multimodal transportation.
- Strengthening public involvement and interagency coordination, including with housing and health agencies.
- Supporting equitable access to transportation options for disadvantaged communities.

The 2026 RTP/SCS prepared by StanCOG has been developed to comply with the planning requirements of the IIJA and its associated regulations under 23 CFR Part 450.

Federal Aviation Administration (FAA) Review – 14 CFR Parts 77.5, 77.7, and 77.9

FAA regulations in 14 CFR Part 77 establish procedures for protecting navigable airspace. These regulations require proponents of certain construction activities—including tall structures, towers, cranes, wind turbines, and other objects exceeding specified height thresholds or located near airports—to notify the FAA before construction. Upon receiving notice, the FAA conducts an aeronautical study to determine whether the proposed structure would constitute a hazard to air navigation or interfere with airport operations, flight procedures, or navigational facilities. The FAA then issues a determination identifying whether the project would have a substantial adverse effect on the safe and efficient use of navigable airspace and may recommend measures to reduce aviation-related impacts.

b. State Laws, Regulations, and Policies

California Transportation Plan

The California Transportation Plan is prepared by the California State Transportation Agency every five years to provide a long-range policy framework to meet the State's future mobility needs and reduce greenhouse gas emissions to goals set by the California Global Warming Solutions Act of 2006 (AB 32, discussed in Section 4.8, *Greenhouse Gas Emissions/Climate Change*) and implementing legislation SB 375 (discussed below). The most recent California Transportation Plan was adopted in 2021 (Caltrans 2021). The California Transportation Plan defines goals, performance-based policies, and strategies to achieve the State's collective vision for California's future statewide, integrated, multimodal transportation system by envisioning a sustainable system that improves mobility and enhances quality of life. The California Transportation Plan is developed in collaboration with transportation stakeholders such as StanCOG. Through ongoing engagement, the California Transportation Plan is intended to provide goals and visions to support a fully integrated, multimodal, sustainable transportation system that supports the quality of life, prosperous economy, human and environmental health, and social equity.

In 2024, an addendum to the California Transportation Plan, known as the State Climate Resilience Improvement Plan for Transportation (SCRIPT), was passed. The SCRIPT "supports the [California Transportation Plan] 2050 Climate Goal of increasing resilience to climate change" (Caltrans 2026a). The SCRIPT was created in response to the Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation Federal Aid Program, which invited states to create resilience improvement plans. The SCRIPT summarizes existing climate adaptation policies, tools, guidance, and activities. Additionally, the SCRIPT discusses existing and planned climate adaption efforts, explains the foundation of existing climate resilience planning, and explains how the Cost-Saving Transportation Federal Aid Program is administered in California (Caltrans 2024).

Assembly Bill 130

AB 130 was signed into law on June 30, 2025. The legislation introduces a new fee-based option for mitigating VMT impacts under CEQA. AB 130 establishes the Transit-Oriented Development Implementation Fund, administered by the California Department of Housing and Community Development. Starting July 1, 2026, lead agencies may mitigate significant VMT impacts to less than significant by funding or facilitating VMT-reducing projects or through contributions to the Transit-

Oriented Development Implementation Fund. The bill adds Section 21080.44 to the Public Resources Code, authorizing lead agencies to mitigate significant transportation impacts by facilitating or funding VMT-reducing projects, including through contributions to the Transit-Oriented Development Implementation Fund. However, lead agencies retain discretion to require additional mitigation measures if necessary. The Governor's Office of Land Use and Climate Innovation issued draft guidelines for implementing the AB 130 VMT Mitigation Program in April 2026 (Governor's Land Use and Climate Innovation [LCI] 2026).

Climate Action Plan for Transportation Infrastructure

The Climate Action Plan for Transportation Infrastructure (CAPTI) was adopted in July 2021. CAPTI details how the state recommends investing billions of discretionary transportation dollars annually to aggressively combat and adapt to climate change while supporting public health, safety and equity. CAPTI builds on executive orders signed by Governor Gavin Newsom in 2019 and 2020 targeted at reducing greenhouse gas (GHG) emissions in transportation, which account for more than 40 percent of all emissions, to reach the state's ambitious climate goals. Throughout 2024, the California State Transportation Agency engaged with public stakeholders to develop new strategies which informed an updated CAPTI 2.0 adopted in January 2025 (California State Transportation Agency 2025).

CAPTI 2.0 builds on the original plan and introduces four new strategies, which include the following:

- S1. Transforming the Future of the State Highway System
- S2. Reducing GHG Impacts of Transportation Investments
- S3. Delivering Equitable Outcomes
- S4. Improving Transparency and Accountability

Each strategy includes specific actions, for a total of 14 new actions necessary for further implementation of the CAPTI framework to align transportation infrastructure investments with California's climate goals and support the Caltrans Transit Policy, which prioritizes transit movement on the state highway system and reaffirms California's commitment to achieving VMT neutrality (California State Transportation Agency 2025).

State Regional Transportation Plan Requirements

Government Code Sections 65080 et seq. state that MPOs must prepare and adopt a long-range transportation plan, such as an RTP directed at achieving a coordinated and balanced regional transportation system, including, but not limited to, mass transportation, highway, railroad, maritime, bicycle, pedestrian, goods movement and aviation facilities and services. The plan must be action-oriented and pragmatic, considering both the short-term and long-term planning, and shall present clear, concise policy guidance to local and state officials. The transportation plan must consider factors specified in the IIJA metropolitan transportation planning rules (23 CFR Part 450 and 49 CFR Part 613), and each transportation planning agency must consider and incorporate, as appropriate, the transportation plans of cities, counties, districts, private organizations and state and federal agencies.

Pursuant to Government Code Section 65080(d), transportation planning agencies, such as StanCOG, that are in nonattainment and monitoring areas must update their long-range transportation plans at least every four years.

The California Transportation Commission has developed RTP guidelines to assist MPOs with developing their RTPs so that they are consistent with federal and state transportation planning requirements. The guidelines are updated and adopted periodically, as needed. For the first time, two separate guidelines were adopted in January 2024 to guide RTP development in MPOs and RTPAs. Both documents incorporate new legislation and the associated goals, particularly related to reducing GHG emissions and improving air quality. The 2024 RTP Guidelines for RTPAs (California Transportation Commission, 2024b) specify that the requirements outlined in the documents apply to all RTP updates begun following adoption. Since the 2026 RTP was started after the January 2024 adoption date of the 2024 RTP Guidelines, StanCOG, as the transportation planning agency for Stanislaus County, has used the 2024 RTP Guidelines for the 2026 RTP.

Senate Bill 375

The Sustainable Communities and Climate Protection Act of 2008 (Chapter 728, Statues of 2008) (SB 375) diversified the areas of study from past MTPs and RTPs to include land use impacts and climate change issues. Specifically, SB 375 requires MPOs to prepare an SCS that demonstrates how the region will meet its GHG reduction targets through integrated land use, housing, and transportation planning. The SCS must identify a transportation network that, when integrated with the forecasted development pattern for the AMBAG region, will reduce GHG emissions from automobiles and light trucks in accordance with targets set by CARB. See Section 4.8, *Greenhouse Gas Emissions/Climate Change*, for a more in-depth discussion of SB 375 and its implications for the proposed 2026 RTP/SCS.

Under SB 375, some development and transportation projects assumed as a part of the 2026 RTP/SCS may be eligible to use a streamlined version of the environmental review process. Among other criteria, these projects must be consistent with the land use designation, density, intensity, and policies of the 2026 RTP/SCS, and fall within the identified criteria for development and transportation projects. Streamlining under SB 375 is described in more detail in Section 1.5.1.

Senate Bill 743

SB 743 (2013) changed the way that public agencies evaluate the transportation impacts of projects under CEQA, recognizing that roadway congestion, while an inconvenience to drivers, is not itself an environmental impact. (See PRC Section 21099(b)(2) [“automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to [CEQA]”].)

Under SB 743, LCI (formerly known as the Office of Planning and Research) established VMT as the preferred metric for measuring transportation impacts of most projects in place of vehicle level of service or related measures of congestion as the primary metric. The use of VMT for determining significance of transportation impacts has become commonplace since the certification of this provision and the release of LCI’s Technical Advisory on Evaluating Transportation Impacts in CEQA in December 2018 (LCI 2018) and, beginning July 1, 2020, is the required metric statewide.

For land use projects, SB 743 provides opportunities to streamline transportation analysis under CEQA for qualifying urban infill development near major transit stops in metropolitan regions statewide, as described in more detail in Section 1.4.3, *Streamlining Under SB 743*. Additionally, the legislation establishes that aesthetic and parking impacts of these projects are not considered significant impacts on the environment.

SB 743 can also substantially affect the review of transportation projects under CEQA. Some projects, such as expanding facilities for bicycle, pedestrian, or transit only use, will not result in adverse transportation impacts because they are assumed not to substantially increase automobile trips. However, for roadway capacity projects, the *CEQA Guidelines* (Section 15064.3) give lead agencies some discretion over what metric is used to evaluate transportation impacts, as some roadway expansion projects can induce vehicle travel. If using a metric besides VMT, however, the change in vehicle travel should still be reported. A program-level assessment of roadway projects in a regional plan may also be used to streamline project level analysis (LCI 2018).

Caltrans has provided two guidance documents to address VMT impacts on the state highway system consistent with the requirements of SB 743 and the LCI Technical Advisory:

- The Transportation Analysis under CEQA (TAC) provides information to support CEQA practitioners in making CEQA significance determinations for transportation impacts of projects on the state highway system. These could include land use projects or transportation projects (Caltrans 2020a).
- The Transportation Analysis Framework (TAF) guides the preferred approach for analyzing the VMT attributable to proposed projects (induced travel) in various project settings, with particular focus on the analysis of induced travel associated with transportation projects which would add road capacity to the transportation system (Caltrans 2020b).

State Aeronautics Act (California Public Utilities Code Sections 21167 et seq.)

The California State Aeronautics Act regulates aviation and airport-related activities within the state and seeks to protect public safety, promote orderly airport development, and preserve airspace needed for aircraft operations. Under these provisions, development projects located near airports or within airport influence areas must be reviewed for potential hazards to aviation, including impacts on aircraft flight paths, airport operations, and navigable airspace. The Act also authorizes the California Department of Transportation (Caltrans) Division of Aeronautics to review certain projects and provide recommendations regarding aviation safety and airport compatibility.

CEQA Guidelines Section 15064.3 and LCI Technical Advisory

CEQA Guidelines Section 15064.3 implements SB 743 and establishes VMT as the most appropriate measure of transportation impacts. The primary components of Section 15064.3 include:

- Identifies VMT as the most appropriate measure of transportation impacts;
- Declares that a project's effect on automobile delay shall not constitute a significant environmental impact (except for projects increasing roadway capacity);
- Creates a rebuttable presumption of no significant transportation impacts for (a) land use projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor, (b) land use projects that reduce VMT below existing conditions, and (c) transportation projects that reduce or have no impact on VMT;
- Allows a lead agency to qualitatively evaluate VMT if existing models are not available; and
- Gives lead agencies discretion to select a methodology to evaluate a project's VMT, but requires lead agencies to document that methodology in the environmental document prepared for the project.

CEQA lead agencies were required to comply with the State Guideline Section 15064.3 no later than July 1, 2020. Some jurisdictions within the StanCOG region have adopted or are in the process of

developing thresholds for purposes of evaluating VMT impacts of projects within their jurisdictions. Other local jurisdictions and agencies in the StanCOG region have not formally adopted numeric thresholds for evaluating VMT impacts, but instead generally use a threshold of 15 percent less VMT per capita than existing average VMT for the area. The 16 percent below existing VMT threshold for land use projects is based on guidance provided by the LCI in its *Technical Advisory on Evaluating Transportation Impacts in CEQA* (LCI 2018).

2022 Scoping Plan

The California Air Resources Board (CARB) 2022 Scoping Plan for Achieving Carbon Neutrality (CARB 2022) concludes that California cannot meet its GHG reduction targets through vehicle electrification alone and identifies a reduction in per capita VMT of approximately 25 percent below 2019 levels by 2030 and 30 percent below 2019 levels by 2045 as necessary benchmarks to support achievement of the State's climate goals.

Assembly Bill 1358

AB 1358, also known as the Complete Streets Act of 2008, amended the California Government Code Section 65302 to require that any substantive revisions to a city or county's Circulation Element include provisions for accommodations of all roadway users, including bicyclists and pedestrians.

California Bicycle Transportation Act

The California Bicycle Transportation Act of 1994 required all cities and counties to have an adopted bicycle master plan to apply for the Bicycle Transportation Account funding source. As of 2013, the Bicycle Transportation Account, along with older programs such as the Transportation Alternatives Program, and Safe Routes to School, have been consolidated into the Active Transportation Program, which is now the primary source of funding for infrastructure and non-infrastructure projects and planning to promote walking and biking in California. The Program is administered by Caltrans and the Division of Local Assistance, Office of State Programs, and supports a wide range of projects that facilitate active modes of transportation. Jurisdictions are encouraged to develop and maintain comprehensive Active Transportation Plans to maintain eligibility for Active Transportation Program funding.

California Manual on Uniform Traffic Control Devices

Pursuant to California Vehicle Code Section 21400 and the recommendations of the California Traffic Control Devices Committee, Caltrans has revised the 2014 California Manual on Uniform Traffic Control Devices to establish uniform standards for all official traffic control devices in the State of California. Effective January 18, 2026, the 2026 Manual replaces the previous iteration of the Manual (California Manual on Uniform Traffic Control Devices 2014 Revision 9), and includes policy revisions to California Traffic Control Devices Committee recommendations and various corrections and format changes (Caltrans 2026).

Active Transportation Program

Pursuant to SB 99 (Chapter 359, Statutes of 2013) and AB 101 (Chapter 354, Statutes of 2013), the Active Transportation Program (ATP) was created to encourage increased use of active modes of transportation, such as biking and walking. The ATP consolidates various federal and state transportation programs, including the Transportation Alternatives Program, Bicycle Transportation

Account, and State Safe Routes to School, into a single program with a focus to make California a national leader in active transportation (Caltrans 2025). The ATP is administered jointly by the California Transportation Commission and Caltrans and combines many federal and state funding streams previously used for bicycle, pedestrian, safety, and other related purposes into one funding stream.

Strategic Highway Safety Plan

The California Strategic Highway Safety Plan (SHSP) is a comprehensive, statewide transportation safety plan which provides a collaborative framework for reducing fatalities and serious injuries across all travel modes and on all public roads. The SHSP utilizes a data-driven process to identify key safety needs and guides resource and investment decisions that provide the greatest potential to achieve the plan's goal of zero traffic fatalities and serious injuries on all of California's public roadways. It is a statewide-coordinated safety plan that provides a comprehensive framework for reducing highway fatalities and serious injuries on all public roads. (Caltrans 2020x).

California Transportation Commission Regional Transportation Plan Guidelines

The California Transportation Commission publishes and periodically updates guidelines for the development of long-range transportation plans, such as STANCOG's proposed 2026 RTP/SCS. Pursuant to Government Code Section 65080(d), each RTPA is required to adopt and submit an updated RTP to the California Transportation Commission and Caltrans every four years. STANCOG is the designated RTPA for Stanislaus County.

Regional Transportation Planning Agency Transportation Plans

As described in Section 1.2, *Project Background*, StanCOG functions as both the federally-designated MPO and the State-designated regional transportation planning agency RTPA for Stanislaus County. Under federal regulations (23 CFR 450.322(c)) and State law (Government Code 65080(d)), StanCOG is required to prepare a long-range (at least 20-year) transportation planning document, known as the RTP. The RTP must be updated every four years and must be consistent with the California Transportation Plan. The RTP is generally an action-oriented document used to achieve a coordinated and balanced regional transportation system.

c. Local Laws, Regulations, and Policies

General Plans

State law requires cities and counties to adopt general plans, which must incorporate a circulation element, also often called a transportation element. A general plan's transportation/circulation element is an infrastructure plan and policy document used to determine the needed expansion or modification of the transportation network (including services) to accommodate planned population and employment growth. The elements generally address expectations for transportation network operations and safety based on goals and policies of the city or county. The elements also often address goods movement, public transit, bicycle facilities and pedestrian facilities.

Transportation provisions in applicable county and city general plans for the StanCOG region are discussed below.

Stanislaus County General Plan

The Stanislaus County General Plan's Circulation Element includes goals that focus on providing and maintaining a transportation system throughout the County for the movement of people and goods that also meets land use and safety needs for all modes of transportation; maintaining a safe, balanced, and efficient transportation system that facilitates inter-city and interregional travel and goods movement; and, providing and managing parking to accommodate vehicle usage while minimizing the impacts of excessive parking supply (County of Stanislaus 2015).

City of Ceres General Plan

The Ceres General Plan 2035 Transportation & Circulation Element provides goals and policies aimed at providing mobility choices for travel within and connecting to Ceres, such as providing for the long-range planning, development, and maintenance of the city's roadway system to ensure the safe and efficient movement of people and goods through a variety of travel modes; maintaining acceptable multi-modal travel flow along Ceres' major corridors; protecting residential areas from high-volume and high-speed traffic and its effects and promote bicycling and walking on residential streets; providing a sufficient amount of convenient, safe, and attractive vehicle and bicycle parking to serve existing and new development throughout the city; promoting provision of safe and efficient transit service to reduce congestion, improve the environment, and provide viable non-automotive means of transportation within and connecting to Ceres; providing a safe, comprehensive, and integrated system of facilities for non-motorized transportation; maintaining a balanced freight transportation system to provide for the safe and efficient movement of goods that balances the needs of other roadway system users; and, developing a financially sustainable transportation system that includes planning, design, construction, maintenance and operations funding from a variety of sources (City of Ceres 2018).

City of Modesto General Plan

The City of Modesto General Plan Transportation Element includes goals that focus on providing meaningful transportation choices, increasing non-automobile mode share, and facilitates complete streets; reducing trip lengths and vehicle miles traveled; evaluating system changes; increasing walking trips; increasing bicycle trips; increasing transit use; supporting passenger rail; improving the roadway network for safety and public health; and improving air transportation (City of Modesto 2019).

City of Turlock General Plan

The City of Turlock General Plan Circulation Element provides a framework to guide the growth of Turlock's transportation-related infrastructure over a 20 year planning horizon. The Circulation Element also includes goals and policies related to a safe and efficient roadway system; implementation of planned roadway improvements; design of complete streets; efficient use of existing transportation facilities; coordination of local and regional actions; reduction in VMT; circulation system enhancements, and; funding for improvements, among others (City of Turlock 2012).

Other City General Plans

The cities of Hughson, Newman, Oakdale, Patterson, Riverbank, and Waterford have developed General Plans, which guide development and growth within each City's jurisdiction or sphere of influence including development of their transportation systems similar to those described above.

Non-Motorized Transportation Plans and Active Transportation Plans

City- and countywide bicycle and pedestrian master plans, active transportation plans and other mode-specific plans serve as policy documents to guide the development and maintenance of the transportation network, support facilities and non-infrastructure programs. These plans describe the acceptable operating service standards, facility classifications, opportunity sites, and mode-specific goals and policies of a given city or county.

Numerous existing bicycle and other modal plans have been adopted for the StanCOG region. For example, the StanCOG 2021 Non-Motorized Transportation Master Plan was adopted by StanCOG in 2021 and focuses on reducing congestion and vehicle-miles traveled to lower greenhouse gas emissions and improving regional air quality; enhancing opportunities for walking, bicycling, and other forms of non-motorized transportation; increasing access to public transportation; developing a non-motorized transportation network that focuses on equity and inclusivity to address the region's unique needs; and, making the Stanislaus region more competitive for statewide grant funding opportunities (StanCOG 2021b). Other applicable non-motorized transportation master plans and active transportation plans within the StanCOG region include the City of Ceres City-Wide Active Transportation Plan (2021), the City of Hughson Non-Motorized Transportation Plan (2008), the City of Modesto Non-Motorized Transportation Master Plan (2024), the City of Newman Non-Motorized Transportation Plan (2012), the City of Patterson Active Transportation Plan (2022), the City of Turlock Active Transportation Plan (2015), and the City of Riverbank Active Transportation Plan (2021). Each of these plans is intended to guide the development of pedestrian and bicycle facilities within each individual jurisdiction's planning area.

4.14.3 Impact Analysis

a. Methodology and Significance Thresholds

StanCOG develops and applies state-of-the-art models, integrated into a comprehensive modeling and forecasting framework to develop growth projections, travel forecasts, and emissions estimates to support the Region's various planning programs. StanCOG updated the land use and roadway network assumptions for each analysis year in its sub-area version of the MIP2 travel demand model for the 2026 RTP/SCS (StanCOG Model). The StanCOG Model is a sub-area version reduced from the 3-County MIP2 travel demand model to a 1-County model covering only the Stanislaus County area for the purposes of improving model performance and validation. The StanCOG Model was originally developed as a part of the 2022 RTP/SCS and as part of the 2026 RTP/SCS, the updates to the StanCOG Model include the sociodemographic detail and the roadway network. These updates reflect planned projects to support the development of the 2026 RTP/SCS.

The criteria for determining whether the RTP/SCS would have significant environmental impacts related to transportation and traffic were based in part on the environmental checklist in Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.) and on performance measures established by StanCOG. Significant impacts to transportation would occur if the plan would:

1. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;
2. Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), specifically resulting in
    a. An overall increase in total regional VMT above baseline (2023) conditions;
    b. A change in VMT per capita in the region that fails to reach 15 percent below baseline (2023) VMT per capita conditions; and/or
    c. A substantial increase in induced travel due to roadway capacity expansions;
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
4. Result in inadequate emergency access; and/or
5. Substantially impair an adopted emergency response plan or emergency evacuation plan.

When additional capacity is provided on a roadway, a short-term gain in reducing delay on the roadway as typically observed. However, additional capacity will often encourage additional trips amongst existing users in the long term, thus increasing VMT overall. These new trips are generated for a variety of reasons, including drivers who were using an alternative mode previously but now are driving (e.g., driving instead of taking transit), or drivers who now choose to make a trip that previously they had forgone (e.g., someone going shopping or picking up dinner that was previously staying home for dinner). This phenomenon is referred to as induced demand. Induced demand effects are generally considered under two-time frames: short term (0-5 years), which includes effects such as diverted trips, mode shift resulting from driving becoming more attractive, and latent trips (new trips that were previously suppressed by congestions); and long term (5-10 years), which includes effects such as destination changes from new land uses, mode shift resulting from transit service provider impacts, and increasing auto dependency.

To account for induced demand associated with the proposed 2026 RTP/SCS in a manner consistent with CARB requirements, it was determined that the VMT data obtained from the travel demand model should be augmented using the California Induced Travel Calculator. This calculator allows a user to estimate the total (both short-term and long-term) induced demand VMT annually added as the result of the new construction of general-purpose lane miles, high-occupancy vehicle lane miles, or high-occupancy toll lane miles. In particular, induced demand analysis is required by CARB during SB 375 analysis for FHWA functional classifications of Interstate (class 1), other freeway and expressways (class 2), and other principal arterials (class 3). Based on a review of model sensitivities, it was determined that the travel demand adequately accounts for the effects of short term induced demand and, as such, only the long-term effects of induced demand from the calculator were added to VMT results from the travel demand model in order to fully account for induced demand. More details regarding model validation can be found in Appendix E.

b. Project Impacts and Mitigation Measures

The following section discusses potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2026 RTP/SCS. Due to the programmatic nature of the proposed 2026 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement

projects and future projects under the land use scenario envisioned by the proposed 2026 RTP/SCS could result in the impacts as described in the following section.

Threshold 1:	Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Impact TRA-1 TRANSPORTATION PROJECTS AND LAND USE PROJECTS IMPLEMENTING THE PROPOSED 2026 RTP/SCS WOULD NOT CONFLICT WITH ANY PROGRAM, PLAN, ORDINANCE OR POLICY ADDRESSING THE CIRCULATION SYSTEM, INCLUDING TRANSIT, ROADWAY, BICYCLE AND PEDESTRIAN FACILITIES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The proposed StanCOG 2026 RTP/SCS is intended to improve the circulation system for all modes of transportation so that motor vehicles and non-motorized vehicles can use the streets simultaneously and safely. Specifically, the proposed 2026 RTP/SCS includes goals and objectives on a federal, state, and regional level that aim to: achieve a significant reduction in traffic fatalities and serious injuries on all public roads; maintain the highway infrastructure asset system in a state of good repair; achieve a significant reduction in congestion on the National Highway System; improve the efficiency of the surface transportation system; enhance the performance of the transportation system while protecting and enhancing the natural environment; and, improve overall mobility and accessibility. Overall, the goals and objectives included in the proposed 2026 RTP/SCS are intended to ensure that future transportation projects would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Transportation projects included under the proposed 2026 RTP/SCS consist of capacity and operational improvements, maintenance, and safety upgrades. These projects include widening existing roadways; constructing expressways, interchanges, and freeway segments; implementing intersection improvements and traffic signal upgrades; and deploying Intelligent Transportation System technologies. In addition, the program includes investments in roadway rehabilitation, bridge replacements and seismic upgrades, and safety improvements. Collectively, these projects would improve regional system capacity, reduce congestion, enhance safety, and improve overall circulation and system reliability. Therefore, the proposed 2026 RTP/SCS would be consistent with the California Transportation Plan and individual jurisdiction General Plans, as well as the goals and objectives outlined within the proposed 2026 RTP/SCS, which are described above.

Active transportation projects included under the proposed 2026 RTP/SCS would expand and enhance pedestrian and bicycle infrastructure throughout the region. These projects include construction of new sidewalks, Class I multi-use paths, Class II bicycle lanes, Class II bicycle boulevards, and Class IV separated bikeway; development of bicycle and pedestrian bridges and trail connections; and installation of bicycle parking and support facilities. The program also includes improvements to existing facilities, such as enhancing signage and striping, Americans with Disabilities Act compliant upgrades, and implementation of Safe Routes to School programs, as well as regional and local non-motorized transportation plan projects. Collectively, these improvements are intended to enhance connectivity, accessibility, and safety for pedestrians and bicyclists, while supporting mode shift and complete streets objectives. Pedestrian and bicycle facilities would be designed and constructed in compliance with applicable safety regulations, such as the California Manual of Uniform Traffic Control Devices (Caltrans 2026).

Transit projects included under the proposed 2026 RTP/SCS would consist of a comprehensive set of service expansions, capital improvements, and systemwide operational investments. These projects

include expansion of the Altamont Corridor Express system through construction of new rail infrastructure, including additional track, bridges, and station facilities, and extension of passenger rail service to Ceres, Merced, Modesto, and Turlock. The program also includes proposed implementation of Bus Rapid Transit enhancements to transit service frequency and reliability, and continued operation of fixed-route and paratransit services. Additional investments include construction and modernization of transit centers, mobility hubs, and operations and maintenance facilities; installation of passenger amenities such as shelters, lighting, and fare collection systems; deployment of Intelligent Transportation System technologies such as transit signal priority; and fleet modernization, including acquisition of zero-emission buses. Such projects would result in enhances transit capacity, accessibility, and user experience, facilitating increased transit ridership and improved regional mobility. Therefore, the proposed 2026 RTP/SCS would be consistent with individual jurisdictions' General Plans and Non-Motorized Transportation Plans, as well as the goals and objectives included in the 2022 RTP/SCS and the proposed 2026 RTP/SCS.

Since the proposed 2026 RTP/SCS would result in additional and improved facilities to accommodate pedestrian, bicycle, and transit travel modes, there would not be substantial disruption of bicycle, pedestrian, and transit facilities. In addition, the proposed 2026 RTP/SCS would result in roadway capacity increases, congestion relief, safety improvements, and overall circulation improvements. Therefore, the proposed 2026 RTP/SCS would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. This impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 2: Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

a. An overall increase in total regional VMT above baseline (2023) conditions would be considered a significant impact;

b. A change in VMT per capita in the region that fails to reach 16 percent below baseline (2023) VMT per capita conditions would be considered a significant impact; or

c. A substantial increase in induced travel due to roadway capacity expansions would be considered a significant impact.

Impact TRA-2 THE PROPOSED 2026 RTP/SCS WOULD RESULT IN AN OVERALL INCREASE IN REGIONAL VMT ABOVE BASELINE (2023) CONDITIONS. THE PROPOSED 2026 RTP/SCS WOULD RESULT IN AN INCREASE IN VMT PER CAPITA ABOVE THE BASELINE (2023) CONDITIONS. REGIONAL VMT AND VMT PER CAPITA IMPACTS FROM IMPLEMENTATION OF THE PROPOSED 2026 RTP/SCS WOULD BE SIGNIFICANT AND UNAVOIDABLE. THE INDUCED TRAVEL IMPACT AT THE REGIONAL LEVEL WOULD ALSO BE SIGNIFICANT AND UNAVOIDABLE.

Table 4.14-4, below, compares the total daily regional VMT and VMT per capita for baseline conditions in 2023 and for anticipated 2030, 2035, 2045, and 2049 conditions with implementation of the proposed StanCOG 2026 RTP/SCS on all roadways for the StanCOG region as a whole. The daily VMT and VMT per capita anticipated in 2035 and 2046 without implementation of the proposed 2026 RTP/SCS are also provided in Table 4.14-4 for informational and comparative purposes.

Overall Increase in Regional VMT

The StanCOG Model used to estimate VMT includes the regional transportation system elements shown in Table 4.14-4. Regional VMT data accounts for automobiles and light duty trucks, as well as all travel within the region, including trips that originate or end outside of the StanCOG region. An area's VMT per capita is the total VMT divided by the population of that area and is a measure of the average vehicle miles each person travels on a typical weekday.

Table 4.14-4 VMT Results Summary

Scenario	Regional VMT	VMT per Capita[1]
2005 Baseline	9,129,037	18.47
2023 Baseline	11,736,343	21.29
2030 Conditions with proposed 2026 RTP/SCS	11,949,978	22.74
2035 Conditions with proposed 2026 RTP/SCS	12,249,388	21.82
2045 Conditions with proposed 2026 RTP/SCS	12,686,997	21.20
2049 Conditions with proposed 2026 RTP/SCS	12,863,205	21.61

Source: StanCOG Model, Appendix E

[1] VMT per capita is based on a 2005 population size of 494,144 (DOF 2010), 2023population size of 551,297 persons (DOF 2025), a 2030 population size of 554,704, a 2035 population size of 561,445 persons, a 2045 population size of 577,903, and a 2049 population size of 602,220 (StanCOG 2025).

As shown in Table 4.14-4, above, the proposed 2026 RTP/SCS is projected to increase the total regional VMT above 2023 baseline conditions. With implementation of the proposed 2026 RTP/SCS, total daily regional VMT would increase by approximately 213,635 miles by 2030 and 1,275,787 miles by 2049, representing an increase of approximately two percent by 2030 and approximately 11 percent by 2049 compared to 2023 baseline conditions. Therefore, this impact would be significant for both 2030 and 2049. These increases reflect the influence of projected population and employment growth within the StanCOG region. As such, even with implementation of the proposed 2026 RTP/SCS, regional travel demand would continue to grow, resulting in higher total VMT. Because total regional VMT would increase above baseline (2023) conditions, the impact would be potentially significant.

Per Capita Vehicle Miles Traveled

Table 4.14-4 shows that daily VMT per capita would increase from 21.29. to 22.74 miles by 2030, representing an increase of approximately 6.8 percent, and from 21.29 to 21.61 miles by 2049, representing an increase of approximately 1.5 percent with implementation of the proposed 2026 RTP/SCS. As such, the proposed 2026 RTP/SCS would fail to reach 16 percent below baseline (2023) VMT per capita conditions in 2030 and 2049. Therefore, this impact would be potentially significant.

Induced Travel

It should be noted that although this is a program-level analysis, and not project specific, some of the proposed 2026 RTP/SCS projects include expanding the capacity of State highways in the region. These projects include widening segments of State Routes, constructing or expanding expressways and interchanges, and adding travel lanes on county and locally maintained roadways in jurisdictions such as Ceres, Modesto, Oakdale, Patterson, Riverbank, and unincorporated areas of

Stanislaus County. Numerous studies and research suggest that an expansion of highway capacity may induce travel (LCI 2018) According to LCI, the initial reduction in traffic congestion and travel times from increased capacity is attractive to travelers, resulting in more trips on the facility and increasing the total daily VMT.

Regarding land use changes, the proposed 2026 RTP/SCS coordinates land use and transportation projects through the 2049 horizon year. The SCS identifies a land use strategy that supports the objectives of SB 375 to achieve, among other things: increased roadway optimization, increased modes of travel other than single occupancy automobiles, increased access to jobs and amenities, minimized increases in VMT, and reduced GHG emissions. Among the strategies to meet these goals is a mix of land uses balanced to minimize VMT and maximize the ability for residents and visitors of the region to conduct everyday activities without the need to travel by car. As a consequence, the transportation system performance results discussed in the EIR's transportation impact analysis capture the effects of land use changes on overall travel demand in the region.

Given the rural nature of the StanCOG region, the induced vehicle travel effects of roadway expansion projects are anticipated to be substantially dampened. Although the StanCOG Model does not specifically evaluate long-term induced demand effects as described in the previous section, these effects may be negligible at the regional level compared to the overall amount of travel. However, in order to address specific CARB requirements, an induced demand analysis consistent with stated CARB requirements was undertaken. Given the many limitations of this analysis, the additional VMT identified during the course of this analysis should be considered a worst-case scenario and is included strictly for the purpose of demonstrating SB 375 target compliance under those conditions. Note that, based on these considerations, the analysis of induced demand described below was limited to SB 375 analysis requirements within the RTP/SCS and SB 743 analysis requirements within this EIR. Based on the analysis, as shown in Table 4.14-5 below, the additional effect of induced demand adds an addition 180,850 VMT in 2030 and an addition 347,950 VMT in 2049.

Table 4.14-5 Induced Demand Effect on VMT

Scenario	2023	2030	2049
Base VMT			
No Project	11,736,343	12,030,707	13,012,130
Plus Project	11,736,343	11,949,978	12,863,205
Induced VMT			
No Project	0	180,850	347,950
Plus Project	0	180,850	347,950
Total VMT			
No Project	11,736,343	12,211,557	13,360,080
Plus Project	11,736,343	13,044,055	13,211,155

Source: StanCOG Model, Appendix E

Based on the program level analysis of capacity-increasing roadway projects included in the proposed 2026 RTP/SCS, additional VMT resulting specifically from induced travel demand is determined to be substantial based on CARB requirements, and the induced travel impact is considered significant in both 2030 and 2049.

The following mitigation measures would reduce regional VMT and VMT per capita impacts.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the proposed 2026 RTP/SCS where applicable for transportation projects. For land use projects under their jurisdiction, the County and incorporated cities in the StanCOG region can and should implement the following mitigation measures. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

TRA-2(a) Land Use Project VMT Analysis and Reduction

Regionally, implementing agencies shall require implementation of VMT reduction strategies through Transportation Demand Management programs, impact fee programs, mitigation banks or exchange programs, in-lieu fee programs, and other land use project conditions that reduce VMT. Programs shall be designed to reduce VMT from existing land uses, where feasible, and from new discretionary residential or employment land use projects. The design of programs and project specific mitigation shall focus on VMT reduction strategies that increase travel choices and improve the comfort and convenience of sharing rides in private vehicles, using public transit, biking, or walking.

At a project level, implementing agencies shall evaluate VMT as part of project specific CEQA review and discretionary approval decisions for land use projects. Where project level significant impacts are identified, implementing agencies shall identify and implement measures that reduce VMT. Examples may include but are not limited to:

- Provide car-sharing, vanpool, bike sharing, and ride-sharing programs
- Implement or provide access to commute reduction programs
- Encourage telecommute programs
- Purchase AB 130 VMT mitigation credits
- Incorporate affordable housing into the project
- Increase density, infill, and transit oriented development
- Increase mixed uses within the project area
- Incorporate improved pedestrian connections within the project/neighborhood
- Incentivize development in low VMT communities
- Incentivize housing near commercial and offices
- Increase access to goods and services, such as groceries, schools, and daycare
- Orient the project toward transit, bicycle, and pedestrian facilities
- Implement complete streets
- Provide traffic calming
- Provide bicycle parking
- Reduce parking requirements
- Separate out parking costs from building costs
- Provide parking cash-out programs

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for land use projects are the County and incorporated cities in the StanCOG region. This mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during project operation, as applicable.

TRA-2(b) Transportation Project VMT Analysis and Reduction

Implementing agencies shall evaluate transportation projects that involve increasing roadway capacity for their potential to increase VMT. Where project-level increases are found to be significant, implementing agencies shall, or can and should, identify and implement measures that reduce VMT. Examples of measures that reduce VMT include:

- Tolling new lanes to encourage carpools and fund transit improvements
- Converting existing general purpose lanes to high occupancy vehicle lanes
- VMT banks
- Implementing or funding offsite travel demand management
- Providing a bus rapid transit system
- Implement bus on shoulder operations during peak congestion periods
- Improving pedestrian or bicycle networks, or transit service
- Providing transit passes
- Incorporating neighborhood electric vehicle network

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. This mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during project operation, as applicable.

Significance After Mitigation

If implementing agencies adopt and require the mitigation measures outlined above, impacts would be reduced because less VMT would be added to the StanCOG region. However, the implementation of project-level VMT-reducing measures, such as mixed uses, transit-oriented development, or participation in a VMT Mitigation Banks other fee-based VMT mitigation program may not be feasible or may not be able to fully mitigate an individual project's impact. Therefore, this impact would remain significant and unavoidable for both increased VMT and in induced travel demand. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

Threshold 3:	Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

Impact TRA-3 TRANSPORTATION AND LAND USE PROJECTS IMPLEMENTED UNDER THE PROPOSED 2026 RTP/SCS WOULD NOT SUBSTANTIALLY INCREASE HAZARDS DUE TO GEOMETRIC DESIGN FEATURES OR INCOMPATIBLE USES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Transportation Design Features

The regional growth pattern of the proposed 2026 RTP/SCS does not define design level features of roadways. While the proposed 2026 RTP/SCS expands development and increases density in growth geographies, this growth would not impact geometric design features or roadway uses in a consistent way, as those design standards and uses are established and enforced at the local jurisdictional level. Specific transportation projects identified in the proposed 2026 RTP/SCS consist of widening existing roadways; constructing expressways and freeways; and installing medians, all of which would result in improved circulation and safety. Future transportation projects would also be subject to design guidelines established by the State or the local jurisdiction with authority over the project, including curve radii on curving road segments, maximum road grade/slope, and minimum separating distance between intersections and driveways.

Construction activities resulting from implementation of the proposed 2026 RTP/SCS would be short term, intermittent, and geographically dispersed. At the regional level, these disruptions would be localized, and impacts would be limited and would not represent a significant impact to the operations of the regional transportation system. At the local level, construction activities could increase travel on local roads and result in detours or increased congestion in certain locations. The actual construction details of land use development projects and proposed transportation projects are not known, because the projects are in the early stages of planning. Construction impacts would be evaluated at the project level as more information about the timing, design, scope, and construction program are available. Generally, construction activities for land use development and transportation projects would be required to be conducted in accordance with, and subject to review by, all applicable State and/or local jurisdictions with authority over the project; thus, ensuring projects would be designed to minimize the potential for hazardous conditions and to ensure safe travel by all modes.

Future transportation projects would be required to conform to the design standards of the public agency responsible for implementation, including safety standards. As such, the proposed 2026 RTP/SCS is would not negatively impact the design of transportation facilities by increasing hazards. Rather, investments would incentivize design improvements to make roadways safer. Therefore, the proposed 2026 RTP/SCS would not substantially increase hazards due to geometric design features or incompatible land uses, and the impact would be less than significant.

Incompatible Uses

The proposed StanCOG 2026 RTP/SCS would not adversely impact the compatible use of transportation facilities. Rather, investments would incentivize design improvements to make roadways safer. The SCS does not introduce new agricultural uses or other similar uses that would result in increased incompatible vehicle uses on roadways in the region, such as slow-moving farm equipment. In addition, specific transportation projects under the proposed 2026 RTP/SCS would be subject to and would follow the allowable uses established by the State or the local jurisdiction with

authority over the project. Therefore, the proposed 2026 RTP/SCS would not substantially increase hazards due to incompatible uses.

Furthermore, the 2026 RTP/SCS does not include components that would result in changes in air traffic patterns that would result in substantial safety risks. To minimize any unanticipated safety risks, any development and subsequent planning decisions in proximity to airports would be subject to review under the State Aeronautics Act provided under Public Utilities Code Sections 21167 et seq. Specific projects that may affect navigable airspace are also subject to FAA review, as outlined under 14 CFR Parts 77.5, 77.7 and 77.9.

Overall, this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 4:	Would the project result in inadequate emergency access?
Threshold 5:	Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

Impact TRA-4 TRANSPORTATION AND LAND USE PROJECTS IMPLEMENTING THE PROPOSED 2026 RTP/SCS WOULD NOT RESULT IN INADEQUATE EMERGENCY VEHICLE ACCESSOR SUBSTANTIALLY IMPAIR AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Transportation infrastructure plays a key role in providing access to destinations during emergencies. These systems must be able to accommodate emergency response vehicles, personnel, and equipment. In the event of an emergency or disaster, the StanCOG region's roads and other transportation networks can determine the success or failure of the region during the emergency and in recovery. The proposed 2026 RTP/SCS would not implement specific design features or specifications for new project-level development or other transportation facilities. However, the specific projects and programs identified in the proposed 2026 RTP/SCS would entail upgrades and improvements to existing transportation infrastructure, resulting in increased roadway capacity, congestion relief, circulation improvements, and overall roadway safety improvements. As such, implementation of the proposed 2026 RTP/SCS would improve performance of the transportation system in the StanCOG region, which would improve emergency response and facilitate more effective emergency evacuation.

The actual design details of land use development projects and proposed transportation projects are not known, because the projects are in the early stages of planning. However, both Caltrans and local jurisdictions have design standards for new and existing development and roadways to ensure adequate passage of emergency vehicles. Standards include specifications related to clear width, effective turning radius and turnouts, curve radii on curving road segments, maximum road grade/slope, and minimum separating distance between intersections and driveways. Transportation projects would be subject to review with regard to emergency vehicle requirements by State and/or local jurisdictions with authority over the project as well as responsible emergency service agencies; thus, ensuring projects would be designed to meet all applicable emergency design standards.

Construction activities could temporarily impair emergency access points used for emergency vehicle access. However, standard construction procedures for development of a construction management plan would address these conditions and would require provision of alternative emergency vehicle access points. Specifically, in accordance with Caltrans permitting requirements, a traffic control plan would be required that adheres to the standards set forth in the California Manual of Uniform Traffic Control Devices (Caltrans 2026). In addition, while implementation of proposed 2026 RTP/SCS's land use scenario and transportation projects could temporarily impede emergency access at project locations during construction periods, construction projects would conform to State, regional, and local regulations requiring maintenance of emergency access during construction. Based on the above analysis, the impacts of the proposed 2026 RTP/SCS on emergency vehicle access and on interference with an adopted emergency response plan or emergency evacuation plan would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.14.4 Cumulative Impacts

The cumulative impacts analysis area for transportation consists of the StanCOG region and the seven adjoining counties. Movement within, through, and beyond the StanCOG region is necessary for commuters, personal travel, and goods movement. Thus, it is important to consider both the StanCOG region as well as the connection with the adjoining counties.

The federal, State, and regional laws, regulations, and policies outlined in Section 4.14.2, *Regulatory Setting,* apply to surrounding counties in the same manner as they apply to projects within the StanCOG region, thereby avoiding the potential for cumulative conflict between the transportation planning for the StanCOG region and the surrounding counties. Therefore, the potential cumulative impacts resulting from cumulative development related to conflict with programs, plans, and ordinances or policies addressing the circulation system would be less than significant.

Development in the cumulative impact analysis area would result in significant and unavoidable increase in regional VMT as well as daily VMT per capita from baseline (2023) conditions, partially due to commuters travelling to and from employment in the adjoining counties. However, the 2026 RTP/SCS is designed to maintain and foster the balance between jobs and housing within the StanCOG region and provides a strategy to allocate growth in such a way as to achieve a more balanced jobs/housing ratio and to optimize transportation investments that support those land uses.

As discussed above, implementation of the 2026 RTP/SCS would increase daily VMT by approximately 213,635 miles by 2030 and 1,275,787 miles by 2049 compared to the baseline 2023 conditions, which would be an approximately two percent increase from the baseline 2023 conditions for 2030 and 11 percent increase from the baseline 2023 conditions for 2049. While the majority of the VMT would be expected to remain within the StanCOG region, some portion of the VMT would inevitably extend to areas within the adjoining counties. The most reasonable assumption is that VMT to adjoining counties would be concentrated to the most heavily traveled roadways in the counties with the highest relative employment, such as I-5 and SR-99 into San Joaquin and Merced counties, SR-132 into Mariposa County, and SR-120 into Santa Clara County. The increased VMT in adjoining county areas would be in addition to the VMT generated from the increased population growth of such counties into the future. Per capita VMT in the cumulative impact area would be unlikely to reach 15 percent below the baseline VMT per capita by 2030 or

2049 due to increased VMT in the region, both with without implementation of the proposed 2026 RTP/SCS. The implementation of project-level VMT-reducing measures, such as mixed uses and transit-oriented development, may not be feasible and cannot be guaranteed on a project-by-project basis. Regional VMT reduction programs, such as VMT banks, may also not be feasible as there are no procedures or policies in place to establish such programs. Thus, cumulative impacts on VMT would be significant, the proposed 2026 RTP/SCS contribution to cumulative VMT impacts would be cumulatively considerable, and this contribution would remain cumulatively considerable post-mitigation.

Some types of transportation impacts are related to site- and project-specific characteristics and conditions and would not be significantly affected by other development outside of the StanCOG region. As discussed in Impacts TRA-3 and TRA-4, there are existing federal, State, and local regulations that govern transportation hazards and emergency access associated with development and infrastructure projects. Regulations and oversight, as outlined in the impact analysis above, would effectively reduce the potential for individual projects to create a transportation hazards or emergency access impact within the StanCOG region and surrounding counties. Thus, cumulative impacts related to the transportation hazards and emergency access would be less than significant.

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4.15 Tribal Cultural Resources

This section evaluates effects on tribal cultural resources in the StanCOG region that would result from implementation of the proposed 2026 RTP/SCS.

4.15.1 Setting

a. Ethnographic Context

Prior to Euro-American settlement, the StanCOG region was primarily inhabited the Northern Valley Yokuts; however, the county partially overlaps the ancestral territory of two other aboriginal California Native American groups as well: the Plains Miwok and Ohlone (or Costanoan).

Northern Valley Yokut

Most of the StanCOG region is located in an area historically occupied by the Penutian-speaking Yokuts (Kroeber 1925, Wallace 1978, Latta 1999). Three geographical divisions of the Yokuts are the Northern Valley, Southern Valley, and Foothill Yokuts. The distinction between the three groups is primarily based on language dialect (Mithun 2001).

The Yokuts established large permanent village settlements, or closely associated smaller settlements, such as the Tulamniu village. Residential structures were most often of two types: single-family dwellings and larger communal residences that housed ten families or more. Villages frequently included mat-covered granaries and a sweathouse (Mithun 2001; Sutton et al. 2016).

The basic economic unit among the Yokuts was the nuclear family. The nuclear family was linked to totemic lineages based on patrilineal descent. Totem symbols were passed from father to offspring. Families that shared the same totem formed an exogamous lineage. Totems were associated with one of two moieties. This moiety division played a role during ceremonies and other social events (Wallace 1978).

Yokuts were split into self-governing local groups that included several villages. Each group had a chief who directed ceremonies, mediated disputes, handled punishment of those doing wrong, hosted visitors, and provided aid to the impoverished. In certain cases, settlements had two chiefs, one for each moiety. Other political positions included the chief's messenger and the spokesman (Wallace 1978).

Shamans were an important part of Yokut village life. A Yokut Shaman gained power through a dream or vision. If, after this vision, the man accepted the role as shaman, he would pray, fast, and acquire talismans to aid him in his future work. Shamans had the ability to heal the sick and served a primary role in religious life (Wallace 1978).

Yokuts subsistence strategy was based on a mixed economy focused on fishing, collecting, and hunting small game. Fishermen employed tule rafts and caught fish with nets, spears, basket traps, and bow and arrow. They often gathered mussels and hunted turtles in lakes, rivers, and streams. Wild seeds and roots contributed a large portion to the Yokuts diet. Tule roots were gathered, dried, and pounded into a flour which was prepared as a mush. Tule seeds and grass and flowering herb seeds were prepared in the same way. Leaves and stems of certain plants, such as clover and fiddle-neck, were also collected. Acorns, a staple of most California Native Americans, were not readily available in the ethnographic territory of the Yokuts. Some Yokuts tribes traded for acorns with neighboring groups, such as the Salinan and Chumash to the west, the Foothill Yokuts to the east,

and the Kawaiisu and Kitanemuk to the southeast (Kroeber 1925). Waterfowl was frequently hunted with snares, nets, and bow and arrow. Land mammals and birds contributed a smaller part of the Yokuts diet. Small game was occasionally taken in snares or traps or shot with bows and arrows (Wallace 1978; Sutton et al. 2016).

Yokuts technology depended primarily on tule. Stems of the plant served as the raw material for baskets, cradles, boats, housing, and many other items. Manos and metate were used to process food and animal hides (Sutton et al. 2016). Tools such as knives, projectile points, and scraping tools were made from imported lithic materials because stone was not readily available in the Central Valley. Some tools, such as bead drills, could be made from local obsidian (Sutton et al. 2016). Marine shells secured through trade with coastal groups were used as shell money and personal adornment items, such as Olivella beads (Sutton et al. 2016; Wallace 1978).

Plains Miwok

The eastern edge of Stanislaus County overlaps the traditional tribal territory of the Plains Miwok, members of the larger Miwokan subgroup of the Utian language family inhabiting an area along the lower reaches of the Mokelumne and Cosumnes rivers and both banks of the Sacramento River roughly from Rio Vista north to Freeport (Levy 1977). Plains Miwok subsistence practices centered on the use of acorns and of seeds as primary plant food sources and on hunting of mule deer, tule elk, pronghorn antelope, and various species of waterfowl. Hunting was typically done with a sinew-backed bow and arrow. Fishing was a particularly important activity for the Plains Miwok, primarily with various types of nets. Seines were used in large rivers and sloughs where the pace of water flow was slow. Hook and line was typically used to take sturgeon, while harpoons were the most common implement for salmon fishing (Levy 1977).

The Plains Miwok made both twined and coiled basketry, usually from willow and redbud. They also manufactured tule mats used as floor covering. Woven blankets were often made of rabbit skin strips or feathers attached to cordage woven from plant fibers. Tule balsa rafts were crafted and used to navigate rivers and sloughs (Levy 1977).

Plains Miwok settlements typically included thatched, conical houses and semisubterranean earth-covered dwellings in winter, constructed by higher-status families. Houses generally had a central hearth and an earth oven for cooking purposes. Large, semisubterranean assembly houses were constructed for use as a ritual and social gathering place. In summer, a circular brush hut was constructed for use in mourning ceremonies. Other structures included sweathouses for curing disease and purification prior to hunting, small conical structures used by menstruating women, and grinding houses built over bedrock mortars to permit food processing in inclement weather. Acorn granaries were constructed for long-term acorn storage (Levy 1977).

Political organization centered on small tribelets of approximately 300 to 500 people and several distinct settlements. Each tribelet was headed by a chief, and each settlement had a representative of the chief overseeing local affairs. Chiefs acted as advisors and managed use of natural resources by preventing trespassing on tribelet territory and determining the appropriate time to begin acorn harvest each season. The chief also arbitrated any disputes and sanctioned the punishment of criminal offenders.

Miwok social organization followed the moiety pattern, with all living things belonging to one of two categories: land and water. Moieties were typically exogamous and played an important role in many ceremonies (Levy 1977).

Ohlone (Costanoan)

The far western portion of Stanislaus County partially overlaps an area traditionally occupied by the Ohlone (or Costanoan) people. Ohlone territory extends along the California coast from the point where the San Joaquin and Sacramento Rivers merge into the San Francisco Bay to Point Sur. Their inland boundary was limited to the interior Coast Ranges (Kroeber 1925:462). The Ohlone language belongs to the Penutian family, with several distinct dialects throughout the region (Kroeber 1925:462). It is divided into eight regional dialects: Karkin, Chochenyo, Ramaytush, Awaswas, Taymen, Mutsun, Rumsen, and Chalon (Jones 2015).

The pre-contact Ohlone were semi-sedentary, with a settlement system characterized by base camps and seasonal reserve camps composed of tule reed houses with thatched roofs made of matted grass (Schick 1994; Skowronek 1998). Just outside base camps, large sweat houses were built into the ground near stream banks used for spiritual ceremonies and possibly hygiene (Schick 1994, Jones 2015). Villages were divided into small polities, each of which was governed by a chief responsible for settling disputes, acting as a war leader during times of conflict, and supervising economic and ceremonial activities (Skowronek 1998; Kroeber 1925:468). Social organization appeared flexible to ethnographers and any sort of social hierarchy was not apparent to mission priests (Skowronek 1998).

Archaeological investigations inform Ohlone mortuary rituals. Cemeteries were set away from villages and visited during the annual Mourning Anniversary (Leventhal and DiGiuseppe 2009). Ceremonial human grave offerings might include Olivella beads, as well as tools like drills, mortars, pestles, hammerstones, bone awls, and utilized flakes (Leventhal and DiGiuseppe 2009). Ohlone mythology included animal characterization and animism, which was the basis for several creation narratives. Ritually burying of animals, such as a wolf, squirrel, deer, mountain lion, gray fox, elk, badger, grizzly bear, blue goose, and bat ray, was commonly practiced. Similar to human burials, ceremonial offerings were added to ritual animal graves like shell beads, ornaments, and exotic goods (Kroeber 1925; Field and Leventhal 2003; Jones 2010).

Ohlone subsistence strategies were based on hunting, gathering, and fishing (Kroeber 1925:467, Skowronek 1998). Larger animals, like bears, might be avoided, but smaller game was hunted and snared on a regular basis (Schick 1944:17). Like the rest of California, the acorn was an important staple and was prepared by leaching acorn meal in openwork baskets and in holes dug into the sand (Kroeber 1925:467). The Ohlone also practiced controlled burning to facilitate plant growth (Kroeber 1925:467, Skowronek 1998). During specific seasons or in times of drought, the reserve camps would be utilized for gathering seasonal food and accessing food storage (Schick 1994). Fishing would be done with nets and gorge hooks out of tule reed canoes (Schick 1994:16-17). Mussels were a particularly important food resource. Sea mammals such as sea lions and seals were hunted and beached whales were exploited (Kroeber 1925:467).

Seven Franciscan missions were built within Ohlone territory in the late 1700s, and all members of the Ohlone group were eventually brought into the mission system (Kroeber 1925:462, Skowronek 1998). After the establishment of the missions, Ohlone population dwindled from roughly 10,000 people in 1770 to 1,300 by 1814 (Skowronek 1998). In 1973, the population of people with Ohlone descent was estimated at fewer than 300. The descendants of the Ohlone united in 1971 and have since arranged political and cultural organizations to revitalize aspects of their culture (Skowronek 1998).

4.15.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

The Department of Transportation Act

Passed in 1966, the Department of Transportation Act (49 United States Code 303, formerly 49 United States Code 1651(b)(2) and 49 United States Code 1653(f) includes Section 4(f), which states that the Federal Highway Administration and other U.S. Department of Transportation agencies cannot approve the use of land from public and private historical sites unless certain conditions apply. These conditions are the following: If there is no feasible and prudent avoidance alternative to the use of land, and if the action includes all possible planning to minimize harm to the property resulting from such use; or if the Federal Highway Administration determines the use of the property will have a de minimis impact.

Archaeological Resources Protection Act

This regulation was enacted to protect archaeological resources and sites that are on public lands and tribal lands, to foster increased cooperation and exchange of information between government representatives, the professional archaeological community, and private individuals. Section 4 of the statute and Sections 16.5-16.12 of the uniform regulations describe the requirements that must be met before federal authorities can issue a permit to excavate or remove any archaeological resource on federal or tribal lands. The curation requirements of artifacts, other materials excavated or removed, and the records related to the artifacts and materials are described in Section 5 of the ARPA. This section also authorizes the Secretary of the Interior to issue regulations describing in more detail the requirements regarding these collections.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act of 1978 (AIRFA) (42 U.S. Code Section 1996) pledges to protect and preserve the traditional religious rights of American Indians, Aleuts, Eskimos, and Native Hawaiians. It establishes a national policy that traditional Native American practices and beliefs, sites (and right of access to those sites), and the use of sacred objects shall be protected and preserved. If a place of religious importance to American Indians could be affected by a federal undertaking, AIRFA promotes consultation with Indian religious practitioners, which could be coordinated with Section 106 consultation. Amendments to Section 106 of the NHPA in 1992 strengthened the interface between AIRFA and the NHPA by clarifying the following: (1) properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization could be determined to be eligible for inclusion in the NRHP; and (2) in carrying out its responsibilities under Section 106, a federal agency shall consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to properties described under (1).

Native American Graves Protection and Repatriation Act

The intent of the Native American Graves Protection and Repatriation Act of 1990 (25 U.S. Code Section 3001) is to identify Native American affiliation or lineal descent and ensure the rightful disposition, or repatriation, of Native American human remains, funerary objects, sacred objects, and items of cultural patrimony that are in federal possession or control. The regulations implementing the requirements of Native American Graves Protection and Repatriation Act relating

to the inadvertent discovery of human remains and objects of cultural patrimony of Native American origin on federal or tribal lands are described in 43 CFR Section 10.4.

b. State Laws, Regulations, and Policies

Assembly Bill 52

California Assembly Bill (AB) 52 expanded CEQA by defining a new resource category, "tribal cultural resources." AB 52 establishes that "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (Public Resources Code [PRC] Section 21084.2). AB 52 further states when feasible, the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource (PRC Section 21084.3). PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe," and meets either of the following criteria:

a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k).
b. 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified or adopted. AB 52 requires that lead agencies "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed in the jurisdiction of the lead agency.

AB 52 (PRC Section 21084.3(b)) describes mitigation measures that may avoid or minimize the significant adverse impacts to TCRs. Examples include:

1. Avoiding and preserving the resources in place, including, but not limited to, planning and constructing to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria
2. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
    a. protecting the cultural character and integrity of the resource
    b. protecting the traditional use of the resource
    c. protecting the confidentiality of the resource
3. Establishing permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places
4. Protecting the resource

In accordance with the requirements of AB 52, StanCOG conducted AB 52 consultation as the lead agency for implementation of the proposed 2026 RTP/SCS. StanCOG sent letters in April of 2025to seven Native American organizations (Amah Mutsun Tribal Band, the Muwekma Ohlone Tribe of the SF Bay Area, the Northern Valley Yokut/Ohlone Tribe, the Southern Sierra Miwuk Nation, the Tule River Indian Tribe, Wilton Rancheria, and the Wuksachi Indian Tribe/Eshom Valley Band) who are listed as contacts for the region by the Native American Heritage Commission. No responses have been received as of the date of this EIR. StanCOG has met their obligations under AB 52 and tribal consultation has been closed. Consultation did not result in identification of any tribal cultural resources.

c. Local Laws, Regulations, and Policies

City of Ceres General Plan

The City of Ceres General Plan 2035 Land Use & Community Design Element includes Goal 4.J Protect Ceres' Native American Heritage, which includes policies related to outreach and coordination with Native American Tribes to identify opportunities to highlight Native American history and to revie and protect tribal cultural resources at development sites, to conduct consultation required by AB 52 and SB 18 early in the development process, and to prioritize avoidance of tribal cultural resources.

City of Modesto General Plan

The Environmental Resources, Open Space, and Conservation Element of the Modesto General Plan includes policies to conduct consultation with Native American tribes, consistent with the requirements of AB 52 and to require Native American monitors to observe all ground disturbing activities likely to affect Native American resources.

City of Turlock General Plan

The City of Turlock General Plan includes policies designed to minimize impacts to Native American cultural and historical resources through the regulation of development activities, the identification and protection of sensitive sites, and the implementation of measures to address inadvertent discoveries, including consultation and appropriate mitigation.

Other City General Plans

The cities of Newman, Oakdale, Patterson, Riverbank, and Waterford include General Plan policies intended to protect Native American cultural resources. Collectively, these policies emphasize identification and preservation of archaeological sites, consultation with Native American tribes in accordance with State requirements such as SB 18, and the protection of culturally sensitive areas. The jurisdictions also include provisions to minimize impacts through development review, maintain the confidentiality of site locations, and implement mitigation measures or permanent preservation strategies where feasible.

4.15.3 Impact Analysis

a. Methodology and Significance Thresholds

In accordance with the requirements of AB 52, StanCOG conducted AB 52 consultation for the proposed 2026 RTP/SCS, which consisted of written communication with the: Amah Mutsun Tribal Band, the Muwekma Ohlone Tribe of the SF Bay Area, the Northern Valley Yokut/Ohlone Tribe, the Southern Sierra Miwuk Nation, the Tule River Indian Tribe, Wilton Rancheria, and the Wuksachi Indian Tribe/Eshom Valley Band. No response was received. Therefore, AB 52 consultation has concluded.

Appendix G of the *CEQA Guidelines* identifies the following criteria for determining whether a project's impacts would have a significant impact to tribal cultural resources:

1. 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:
    a. 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), and/or
    b. 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.

b. Project Impacts and Mitigation Measures

The following section discusses potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2026 RTP/SCS. Due to the programmatic nature of the proposed 2026 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement projects and future projects under the land use scenario envisioned by the proposed 2026 RTP/SCS could result in the impacts as described in the following section.

Threshold 1:	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: a. 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 b. 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?

Impact TCR-1 TRANSPORTATION PROJECTS AND THE LAND USE SCENARIO ENVISIONED IN THE PROPOSED 2026 RTP/SCS WOULD CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A TRIBAL CULTURAL RESOURCE. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

As stated above, AB 52 consultation did not result in identification of any tribal cultural resources. However, it is possible that Native American burial sites, village or occupation sites, traditional resource gathering locations, and natural landforms of importance to the local tribes could exist in the StanCOG region. Therefore, tribal cultural resources could be encountered during implementation of the transportation improvement projects included in the proposed 2026 RTP/SCS and the land use scenario envisioned by the proposed 2026 RTP/SCS. Effects on tribal cultural resources are highly dependent on the individual project site conditions and the characteristics of a project. Impacts to tribal cultural resources may include damage or destruction of the resources. Adherence to the requirements of AB 52 encourages tribal consultation with local Native Americans and requires the identification of project-specific substantial adverse effects on tribal cultural resources and appropriate project-specific mitigation measures. If the transportation project sponsor agencies determine that a specific transportation or land use project could cause a substantial adverse change in the significance of a tribal cultural resource, the impact would be significant.

Mitigation Measures

For transportation projects under their jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement Mitigation Measure TCR-1 below and Mitigation Measure CUL-2(b), Unanticipated Discoveries During Construction, in Section 4.5, *Cultural Resources*, where applicable for projects implementing the proposed 2026 RTP/SCS with the potential to impact tribal cultural resources. Cities in the StanCOG region and the County can and should implement these measures, where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

TCR-1 Identified Tribal Cultural Resources Impact Minimization

Implementing agencies shall, or can and should, comply with AB 52, which may require formal tribal consultation. If the implementing agency determines that a project may cause a substantial adverse change to a tribal cultural resource, they shall implement mitigation measures identified in the

consultation process required under PRC Section 21080.3.2, or shall implement the following measures where feasible to avoid or minimize the project-specific significant adverse impacts:

- Avoidance and preservation of the resources in place, including, but not limited to: designing and building the project to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space to incorporate the resources with culturally appropriate protection and management criteria.
- Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
  - Protecting the cultural character and integrity of the resource
  - Protecting the traditional use of the resource
  - Protecting the confidentiality of the resource
  - Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places
- Native American monitoring by the appropriate tribe during soil disturbance for all projects in areas identified as sensitive for potential tribal cultural resources and/or in the vicinity (within 100 feet) of known tribal cultural resources.
- If potential tribal cultural resources are encountered during ground-disturbing activities; work in the immediate area must halt and the appropriate tribal representative(s), the implementing agency, and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find and determine the proper course of action.

CUL-2(b) Unanticipated Discoveries During Construction

During construction activities, implementing agencies shall, or can and should, implement the following measures. If evidence of any prehistoric or historic-era subsurface archaeological deposits (e.g., ceramic sherds, refuse scatters, lithic scatters, habitation debris, etc.), are discovered during construction-related earthmoving activities all ground-disturbing activity proximate to the discovery shall be halted until a qualified archaeologist (36 CFR Section 61) can assess the significance of the find. If the find is a prehistoric archaeological site, the appropriate Native American group shall be notified. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the archaeologist determines that further information is needed to evaluate significance, a testing plan shall be prepared and implemented. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall work with the implementing agency to avoid disturbance to the resources, and if complete avoidance is not feasible in light of project design, economics, logistics and other factors, shall recommend additional measures such as the preparation and implementation of a data recovery plan. All cultural resources work shall follow accepted professional standards in recording any find including submittal of standard DPR Primary Record forms (Form DPR 523) and location information to the appropriate California Historical Resources Information System office for the project area. If the find is a prehistoric archaeological site, the culturally affiliated California Native American tribe shall be notified and afforded the opportunity to monitor mitigative treatment. During evaluation or mitigative treatment, ground disturbance and

construction work could continue in other parts of the project area that are distant enough from the find not to impact it, as determined by the qualified archaeologist.

IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are StanCOG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

Significance After Mitigation

Mitigation Measure TCR-1 would require implementation of mitigation identified through tribal consultation or other feasible mitigation to avoid impacts to identified tribal cultural resources. This measure would protect the resource's character, traditional use, and confidentiality. Mitigation Measure CUL-2(b) would ensure that impacts to unanticipated tribal cultural resources activities would be mitigated in consultation with tribal representatives. Implementation of the above measures would reduce impacts to tribal cultural resources. However, it cannot be guaranteed that all future project-level impacts can be mitigated and as such, impacts would be significant and unavoidable.

4.15.4 Cumulative Impacts

The cumulative impact analysis area for tribal cultural resources consists of the StanCOG region and adjoining counties. Information regarding these adjoining counties can be found in Chapter 3, *Environmental Setting, 3.3.4 Approach for Cumulative Analysi*s. Tribal cultural resources are regionally specific and determined by the local tribes. However, development in the cumulative impact analysis area would increasingly extend into previously undeveloped areas. The StanCOG region would continue to develop under the SCS and could result in expansion of urban areas into undeveloped land and that development could encourage development in adjoining counties that have the potential to impact tribal cultural resources near or bordering the StanCOG region that could have an impact on tribal cultural resource in the StanCOG region by impacting the serenity of the tribal site or views from the resource, or projects in the StanCOG region having a similar impact to tribal cultural resources in any of the adjacent counties. The increase in growth in previously undisturbed areas would contribute to regional impacts on tribal cultural resources. Cumulative impacts would be significant.

Development in the StanCOG area would increase under the proposed 2026 RTP/SCS by increasing mobility and growth. The increase in growth in previously undisturbed areas contributes to regional impacts on tribal cultural resources. If there may be tribal cultural resources at the location of a project site, tribal consultation in accordance with AB 52 would help ensure protection of tribal cultural resources. However, tribal territory often crosses the boundaries of multiple jurisdictions within and outside of the StanCOG region, and there could be several minor impacts to tribal cultural resources that together would result in a significant cumulative impact. The cumulative impact would be significant, and the overall contribution of the proposed 2026 RTP/SCS to significant cumulative tribal cultural resources impacts, despite implementation of Mitigation Measures TCR-1 and CUL-2(b), would be cumulatively considerable.

4.16 Wildfire

This section evaluates impacts on wildfire from implementation of the proposed 2026 RTP/SCS.

4.16.1 Setting

In California, responsibility for wildfire prevention and suppression is shared by federal, State, and local agencies. Federal agencies are responsible for federal lands in Federal Responsibility Areas. California has determined that some non-federal lands in unincorporated areas with watershed value are of statewide interest and have classified those lands as State Responsibility Areas (SRA), which are managed by the California Department of Forestry and Fire Protection (CAL FIRE). All incorporated areas and other unincorporated lands are classified as Local Responsibility Areas (LRA).

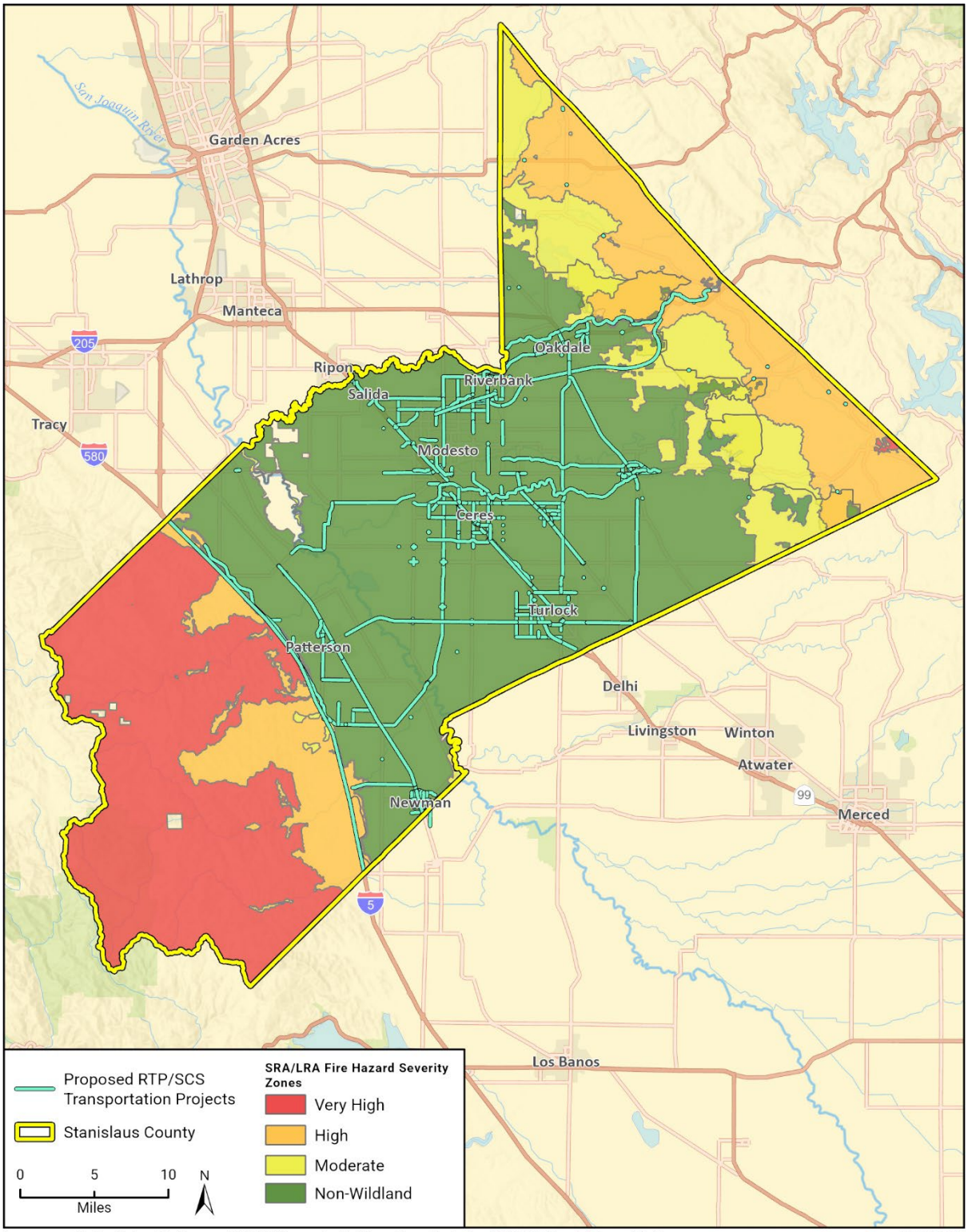
a. Wildfire Behavior and Controlling Factors

Human influence on wildfire includes direct influences, such as the ignition and suppression of fires, and indirect influence through climate change, the alteration of native vegetation, fire suppression, and development patterns. Human-induced wildfire ignitions can change fire regime characteristics in two ways: (1) changing the distribution and density of ignitions and (2) changing the seasonality of burning activity. Human-induced ignition sources include escapes from debris and brush-clearing fires, electrical equipment malfunctions, campfires, smoking, fire play (e.g., fireworks), vehicles, and arson. Consequently, areas near human development more frequently experience fires than very remote or urban areas. Figure 4.16-1 displays the Fire Hazard Severity Zones in the StanCOG region.

Once a fire is started, the spread and behavior of a fire become a function of fuel characteristics, terrain, and weather conditions. People have intervened deliberately and dramatically in the natural fire regime through fire suppression and, more recently, actions that affect fuel connectivity. Historically, fire suppression was used to prevent and limit wildfires. Over time, this land management practice (combined with forest regrowth after extensive logging in the late 19th century) has led to a buildup of forest fuels and an increase in the occurrence and threat of large, severe fires. Contemporary fire management practices include fuel management activities that are intended to reduce the intensity and severity of wildfires. Reducing fuels through mechanical treatments and prescribed fire have been found to be effective at reducing fire frequency, fire severity, and annual area burned when applied at the landscape scale over an extended period.

Wildfire activity is closely related to temperature and drought conditions, and in recent decades, increasing drought frequency and warming temperatures have resulted in increased fire activity and the largest, most destructive, and deadliest wildfires in California history. Climate change will continue to produce conditions that facilitate a longer fire season, which, when coupled with human-caused changes in the seasonality of ignition sources, will produce more, longer, and bigger fires during more times of the year. According to California's Fourth Climate Change Assessment, Statewide Summary Report (LCI 2019), if greenhouse gas emissions continue to rise, the frequency of extreme wildfires burning over 25,000 acres could increase by 50 percent by 2100, and the average area burned Statewide could increase by 77 percent by the end of the century.

Figure 4.16-1 StanCOG Region Fire Hazard Severity Zone Map



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b. California Wildfire Hazards

While all of California is subject to some degree of wildfire hazard, there are specific features that make certain areas more hazardous. CAL FIRE is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors (Public Resources Code [PRC] 4201-4204 and California Government Code 51175-89). Factors that increase an area's susceptibility to fire hazards include slope, vegetation type, and condition and atmospheric conditions. CAL FIRE has identified two types of wildfire risk areas: 1) Wildland Areas That May Contain Substantial Forest Fire Risks and Hazards and 2) Very High Fire Hazard Severity Zones (FHSZ). The first hazard area corresponds with those lands designated as SRAs, as described above, and the second hazard area corresponds with areas designated as Local Responsibility Areas. Each risk area carries with it code requirements to reduce the potential risk of wildfires. Under state regulations, areas within very high fire hazard risk zones must comply with specific building and vegetation management requirements intended to reduce property damage and loss of life within these areas.

Based on the FHSZ Map for Stanislaus County, SRAs moderate and high hazard zones are present in the northeastern and eastern edges of the County. There are high and very high FHSZs along the western edge of the county and along the Interstate 5 I-5 corridor. The location of the proposed 2026 RTP/SCS projects and mapped Fire Hazard Severity Zones in SRAs are shown in Figure 4.16-1.

Development that has spread into less densely populated, often hilly areas, has increased the number of people living in heavily vegetated areas that are prone to wildfire and more difficult to battle due to the hilly terrain. The area where wildlands meet urban development is referred to as the wildland-urban interface (WUI), where urban wildfires occur. The 2020 Santa Clara Unit (SCU) Lightning Complex Fire started in multiple locations throughout Santa Clara County, Alameda County, Contra Costa County, San Joaquin County, Merced, and Stanislaus County and is ranked as the fourth largest wildfire in California history (CAL FIRE 2020). The SCU Lightning Complex Fire resulted in 396,624 burned acres, 175,804 of which were in Stanislaus County (CAL FIRE 2020a). The fire also destroyed a total of 222 structures (CAL FIRE 2020b) and is an example of the major losses that can result from a fire in the WUI.

4.16.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

International Fire Code

The International Fire Code (IFC), created by the International Code Council, is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The IFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The IFC and the International Building Code use a hazard classification system to determine what protective measures are required for fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the IFC employs a permit system based on hazard classification. The IFC is updated every three years and is the basis for the California Fire Code (CFC) (also updated triennially). Local jurisdictions, including StanCOG region; cities and County, then adopt the CFC, in some cases with local amendments.

Federal Disaster Mitigation Act

The Disaster Mitigation Act of 2000 provided a new set of mitigation plan requirements that encourage state and local jurisdictions to coordinate disaster mitigation planning and implementation. States are encouraged to complete a "Standard" or an "Enhanced" Natural Mitigation Plan. "Enhanced" plans demonstrate increased coordination of mitigation activities at the state level and, if completed and approved, increase the amount of funding through the Hazard Mitigation Grant Program. The California State Hazard Mitigation Plan (SHMP) complies with this act.

National Fire Plan

The U.S. Department of the Interior's National Fire Plan is intended to ensure an appropriate federal response to severe wildland fires, reduce fire impacts on rural communities, and ensure sufficient firefighting capacity in the future. The Rural Fire Assistance program is funded to enhance the fire protection capabilities of rural fire districts and safe and effective fire suppression in the wildland/urban interface. The program promotes close coordination among local, state, tribal, and federal firefighting resources by conducting training, equipment purchase, and prevention activities on a cost-shared basis.

b. State Laws, Regulations, and Policies

Strategic Plan for California

The Strategic Plan (CAL FIRE 2024) prepared by CAL FIRE and the California Natural Resources Agency lays out central goals for reducing and preventing the impacts of fire in the State. The goals are meant to establish, through local, State, federal, and private partnerships, a natural environment that is more resilient and human-made assets that are more resistant to the occurrence and effects of wildland fire.

In addition to the Strategic Plan for California, individual CAL FIRE units develop fire plans, which are major strategic documents that establish a set of tools for each CAL FIRE unit for its local area. Updated annually, unit fire plans identify wildfire protection areas, initial attack success, assets and infrastructure at risk, pre-fire management strategies, and accountability within their unit's geographical boundaries. The unit fire plan identifies strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work locally. The plans include contributions from local collaborators and stakeholders and are aligned with other plans for the area.

California Building Code

The California Building Code (CBC) has been codified in the California Code of Regulations as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The 2022 CBC is based on the 2021 International Building Code published by the International Code Council, though will be superseded by the 2025 CBC which became effective on January 1, 2026. In addition, the CBC contains necessary California amendments, which are based on reference standards obtained from various technical committees

and organizations, such as the American Society of Civil Engineers, the American Institute of Steel Construction, and the American Concrete Institute. American Society of Civil Engineers Minimum Design Standard 7-05 provides requirements for general structural design and includes means for determining earthquake loads, as well as other loads (e.g., flood, snow, wind), for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures throughout California. Specifically, Chapter 7A of the CBC (California Code of Regulations, Title 24, Part 2) includes specific requirements related to exterior wildfire exposure. These requirements establish minimum standards to protect buildings located in FHSZs within SRAs and within the WUI. This code includes provisions for ignition-resistant construction standards for new buildings.

California Fire Code

The 2025 CFC (California Code of Regulations, Title 24, Part 9) establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare for the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of this code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of buildings or structures or any appurtenances connected or attached to such building structures throughout California.

Wildland-Urban Interface Code

On September 20, 2007, the Building Standards Commission approved the Office of the State Fire Marshal emergency regulations amending the California Code of Regulations, Title 24, Part 2, known as the CBC. These codes, included in Chapter 7A of the CBC, which was updated in 2025, include provisions for ignition-resistant construction standards in the WUI.

California Emergency Services Act

The California Emergency Services Act of 2008 merged the duties, powers, purposes, and responsibilities of the California Governor's Office of Emergency Services (Cal OES) and the Governor's Office of Homeland Security into a new cabinet-level agency, the California Emergency Management Agency. In 2013, the Governor merged the California Emergency Management Agency with the Office of Public Safety Communications and renamed the organization Cal OES. Cal OES is responsible for overseeing and coordinating emergency preparedness, response, recovery, and homeland security activities within the California. Section 8687.7 of the California Disaster Assistance Act required the development of a Standard Emergency Management System (SEMS) program, for managing multiagency and multijurisdictional responses to emergencies in California. The Cal OES Emergency Management Systems Unit is a multi-agency group charged with methodical review, evaluation, and approval of needed improvements to SEMS. State agencies are required to use SEMS and local government entities must use SEMS in order to be eligible for any reimbursement of response-related costs under the State's disaster assistance programs.

Cal OES serves as the lead State agency for emergency management and coordinates the State response to major emergencies in support of local government. SEMS provides the mechanism by which local governments request assistance from Cal OES, and Cal OES maintains oversight of the State's mutual aid system.

California State Emergency Plan

The California State Emergency Plan outlines a state-level strategy to support local government efforts during a large-scale emergency. In accordance with the California Emergency Services Act, the California State Emergency Plan describes methods for carrying out emergency operations, mutual aid processes, emergency services of governmental agencies, resource mobilization, emergency public information, and continuity of government (Cal OES 2023a).

California State Hazard Mitigation Plan

The California Office of Emergency Services prepares the SHMP, which identifies hazard risks and includes a vulnerability analysis and a hazard mitigation strategy (Cal OES 2023b). The SHMP is required under the Disaster Mitigation Act of 2000 for the State to receive federal funding. The Disaster Mitigation Act of 2000 requires a State mitigation plan as a condition of disaster assistance.

The SHMP represents the state's primary hazard mitigation guidance document - providing an updated analysis of the state's historical and current hazards, hazard mitigation goals and objectives, and hazard mitigation strategies and actions. The plan represents the state's overall commitment to supporting a comprehensive mitigation strategy to reduce or eliminate potential risks and impacts of disasters in order to promote faster recovery after disasters and, overall, a more resilient state. State Hazard Mitigation Plans are required to meet the Elements outlined in the Federal Emergency Management Agency (FEMA) State Mitigation Plan Review Guide (FEMA 2025).

Cal OES is responsible for the development and maintenance of the State's plan for hazard mitigation. The SHMP was last approved by FEMA as an Enhanced State Mitigation Plan in 2023. The plan is designed to reduce the effects of disasters caused by natural, technological, accidental, and adversarial/human-caused hazards. The SHMP sets the mitigation priorities, strategies, and actions for the state. The plan also describes how risk assessment and mitigation strategy information is coordinated and linked from local mitigation plans into the SHMP and provides a resource for local planners of risk information that may affect their planning area. The State of California is required to review and revise its mitigation plan and resubmit for FEMA approval at least every five years to ensure continued funding eligibility for certain federal grant programs.

Senate Bill 1241

Senate Bill 1241 (Chapter 311, Statutes of 2012) requires cities and counties to address fire risk in SRAs and Very High FHSZs in the safety element of their general plans. It also requires cities and counties to make certain findings regarding available fire protection and suppression services before approving a tentative subdivision map or parcel map.

Assembly Bill 3074

AB 3074 of 2020 amends California's defensible space requirements under PRC Section 4291 to enhance wildfire mitigation in SRAs and Very High FHSZ within LRAs. The bill introduces a "Zone 0" ember-resistant zone, requiring the removal of flammable vegetation and materials within five feet of structures to reduce wildfire ignition risks. The California Board of Forestry and Fire Protection is responsible for implementing these regulations, which apply to new construction and, upon regulatory adoption, to existing structures.

SRA Fire Safe Regulations

The SRA Fire Safe Regulations, California Code of Regulations Title 14, Division 1.5, Section 1270 et seq. establishes CAL FIRE's basic wildland fire protection standards for new development and is applicable in all SRAs in California—areas in which CAL FIRE is responsible for wildfire protection.

Executive Order N-05-19

On January 9, 2019, Governor Gavin Newsom issued Executive Order N-05-19 to address wildfire in California. Executive Order N-05-19 directs CAL FIRE, in consultation with other state agencies and departments, to recommend immediate, medium-term, and long-term actions to help prevent destructive wildfires. In response, CAL FIRE created the Community Wildfire Prevention and Mitigation Report, which contains recommendations to reduce damage from wildfires across the state. Specifically, they focus on reducing wildfire fuel (such as vegetation clearing), long-term community protection (creating defensible space in communities), wildfire prevention, and forest health (CAL FIRE 2024).

c. Local Laws, Regulations, and Policies

County of Stanislaus General Plan

The Stanislaus County Safety Element contains goals and policies with the specific intention of reducing the region's risk of fire hazards. It was adopted in 2016 and demonstrates the County's compliance with fire prevention and protection requirements outlined in State law (County of Stanislaus 2015). Urban fires are generally man-caused fires that can be mitigated through proper building code requirements, fire flow minimums and zoning or subdivision ordinance requirements. Wildland fires are generally limited to the foothills on either side of the County. Although there is less of a hazard to structures and people, controlling such fires is more difficult because of their inaccessibility. The following policies are taken from the safety element and implementation measures show fire's impact specifically but can be grouped with the County's response to other hazards.

City of Ceres General Plan

The City of Ceres's General Plan was adopted in 2018 with a Health and Safety Element that is geared towards providing residents protection from hazards. Its purpose is to identify the natural and man-made public health and safety hazards that exist within the city, and to establish preventative and responsive policies and programs to mitigate their potential impacts (City of Ceres 2018). The main fire threat in Ceres and its Planning Area is urban fire affecting structures and vegetation in areas already developed for urban and agricultural uses. Fire risk in the city is mitigated in a number of ways, including through the enforcement of updated fire codes and involvement of the Fire Department in the development review process. Ceres and the surrounding Planning Area are at very low risk for wildland fires, due to the lack of forest, brush, or grasslands in the vicinity. The Planning Area has minimal surface fuels due to the developed nature of the city and irrigated croplands, and therefore has a low fire hazard. Goal 5.K in the Health and Safety Element calls for preventing and minimizing the risk of loss of life, injury, and damage to property and natural resources resulting from fires.

City of Modesto General Plan

The City of Modesto's Safety Element was adopted in 2019 and provides fire and life safety protection to the community through control of hostile fire, fire prevention, emergency medical services, emergency preparedness, and mitigation of hazardous materials incidents (City of Modesto 2019). The Policy's adopted by Modesto include the following:

City of Turlock General Plan

The City of Turlock's General Plan Safety Element was adopted in 2012 to guide fire and emergency response within the city limits. Areas outside city limits but within the Study Area are served by the Turlock Rural Fire District, the Keyes Fire Department, and the Denair Fire Department. Turlock Fire Department responds to commercial and residential structure fires, vehicle fires, rubbish fires, and vegetation fires. Wildland fire threats are greatest in mountain and foothill areas, where steep slopes, volatile vegetation, and windy conditions increase fire risk. Since the Study Area is almost all flat urbanized or agricultural land, fire risk is low.

Other City General Plans

The cities of Hughson, Newman, Oakdale, Patterson, Riverbank, and Waterford include General Plan policies and service frameworks addressing wildfire risk and fire protection. These jurisdictions generally provide fire protection through local or regional fire districts, supported by mutual aid agreements, and implement policies aimed at minimizing loss of life, property damage, and hazards associated with wildland and structural fires. Measures include requiring new development to meet fire safety standards, ensuring adequate water supply and emergency access, enforcing weed abatement and defensible space requirements, and incorporating ignition-resistant construction and site design in fire-prone areas. Some cities also emphasize public education, emergency preparedness, and coordination with fire agencies, as well as the adoption and enforcement of State fire and building codes to reduce wildfire risk and improve community resilience.

Multi-Jurisdictional Hazard Mitigation Plan

Due to the extensive history of natural disasters occurring throughout California, the State encourages communities to adopt Local Hazard Mitigation Plans to gather hazard risk data and ensure local-level mitigation and preparedness. Local jurisdictions develop, adopt and update hazard mitigation plans to establish guiding principles for reducing hazard risk, as well as specific mitigation actions to eliminate or reduce identified vulnerabilities. The Stanislaus Multi-Jurisdictional Hazard Mitigation Plan identifies risks posed by disasters and identifies ways to minimize damage from those disasters. The plan is a comprehensive resource document that serves many purposes, including enhancing public awareness and understanding, creating a decision tool for management, promoting compliance with State and Federal program requirements, enhancing local policies for hazard mitigation capability, and providing inter-jurisdictional coordination. It includes the cities of Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock, Waterford, and unincorporated areas (Stanislaus County 2022). The plan vulnerability assessment of wildfires in different areas of Stanislaus and provides mitigation goals and policies geared towards reducing fire severity and intensity in the region through wildfire prevention, fuels management, and coordination with local, State, and federal agencies.

4.16.3 Impact Analysis

a. Methodology and Significance Thresholds

The methodology used for the following evaluation is based on a review of CAL FIRE's FHSZ maps and responsibility areas regarding wildfire conditions in the StanCOG region to determine the potential for implementation of the potential for implementation of the proposed 2026 RTP/SCS to result in increased wildfire risks. This includes city and county planning documents. This program-level analysis is based on an overall understanding of the key fire safety concerns that could result from implementation of the proposed 2026 RTP/SCS. The evaluation of wildfire impacts reasonably assumes that the construction and development under the proposed 2026 RTP/SCS would adhere to the latest federal, state, and local regulations, and conform to the latest required standards in the industry, as appropriate for individual projects.

Appendix G of the *CEQA Guidelines* identifies the following criteria for determining whether a project's impacts would have a significant impact on wildfire:

If located in or near a SRA or lands classified as Very High FHSZ, would the project:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan;
2. 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;
3. 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;
4. 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; and/or
5. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Impacts related to impairment or interference of emergency response or evacuation plans (Threshold 1) are discussed in detail in Section 4.14, *Transportation*, under Impact TRA-4.

b. Project Impacts and Mitigation Measures

This section discusses impacts and mitigation measures associated with transportation projects and the land use scenario contained within the proposed 2026 RTP/SCS. Specific projects may generate wildfire impacts during construction and operation. Due to the programmatic nature of the proposed 2026 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement projects and future projects under the land use scenario envisioned by the proposed 2026 RTP/SCS could result in the impacts as described in the following sections.

Threshold 2:	Would the project 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?
Threshold 3:	Would the project 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?
Threshold 4:	Would the project 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?
Threshold 5:	Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Impact W-1 PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2026 RTP/SCS WOULD BE LOCATED IN OR NEAR AN SRA OR VERY HIGH FHSZS. THIS WOULD INCREASE WILDFIRE RISK ASSOCIATED WITH THE CONSTRUCTION OR MAINTENANCE OF INFRASTRUCTURE SUCH AS ROADS, POST-FIRE LANDSLIDES AND FLOODING, AND WILDFIRE RISK TO PEOPLE AND STRUCTURES. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Exacerbated Fire Risk

As shown in Figure 4.16-1, SRAs moderate and high FHSZs within SRAs and LRAs are present in the northeastern and eastern portions of the StanCOG region. Very high and high FHSZs are present along the western edge of the county and along the I-5 corridor. The land use scenario envisioned by the proposed 2026 RTP/SCS concentrates the forecasted population and employment growth in urban areas and corridors of the StanCOG region, such as incorporated cities, unincorporated towns, and major roadways, where the risk of wildfire is less than in more rural, forested, or mountainous areas where fuels are abundant and emergency response access is restricted. Proposed 2026 RTP/SCS transportation improvements, including roadway improvements, transportation demand management, and transit improvements, would not involve developing residential uses that would include occupants. While some transportation projects may include office or maintenance structures, occupation would be temporary and would not be situated in very high FHSZs or SRAs. Additionally, transportation projects associated with the proposed 2026 RTP/SCS would improve mobility in the StanCOG region, which could facilitate an expedited evacuation or escape during a wildfire. However, urban and outlying areas within the WUI are still at risk from wildfire.

Land use development envisioned in the proposed 2026 RTP/SCS that would be located within or less than two miles[1] from an SRA would cause significant wildfire impacts because existing codes and regulations cannot fully prevent wildfires from damaging structures or causing injury or death. These projects would increase the exposure of transportation infrastructure to risk of loss or damage from wildfire. Additionally, fire related impacts may extend far beyond the fire footprint through damage to homes, infrastructure, and ecosystems, and diminished air and water quality. People residing in residential development could be exposed to smoke and air pollution from wildfires regardless of their location within urbanized areas or the WUI. Thus, impacts associated with slope, prevailing winds, and other factors that would exacerbate wildfire risks and thereby

[1] For the purpose of this analysis, two miles is considered "near" an SRA or very high FHSZ.

expose occupants to pollutant concentrations from a wildfire or uncontrolled spread of a wildfire would be significant.

Requirements to adhere to the local hazard mitigation plan, as well as the local general plan policies and programs aimed at reducing the risk of wildfires through land use compatibility, training, sustainable development, brush management, public outreach, and service standards for fire departments would reduce the risk of wildfire for these projects. Additionally, CBC regulations have been prepared and adopted for the purpose of establishing minimum wildfire protection standards in conjunction with building, construction, and development in a SRA. Title 14 sets forth the minimum development standards for emergency access, including fuel modification, setback, signage, and water supply, which are intended to result in development that avoids or minimizes the hazards associated with development including associated infrastructure to roads, fuel breaks, emergency water sources, power lines or other utilities in wildfire-prone areas.

Although there are limited instances where the proposed land use pattern and planned transportation investments of the proposed 2026 RTP/SCS may result in growth in or near wildfire prone areas, substantial wildfire-related effects could still occur. The proposed 2026 RTP/SCS plans for the construction and maintenance of associated infrastructure and envisions land development near SRAs. Title 14 sets forth the minimum development standards for emergency access, fuel modification, setback, signage, and water supply, which are intended to result in development that avoids or minimizes the hazards associated with development including associated infrastructure to roads, fuel breaks, emergency water sources, power lines or other utilities in wildfire-prone areas. Global climate change will pose an increasing threat to wildland areas and nearby urban environments. The proposed 2026 RTP/SCS plans for the construction and maintenance of associated infrastructure and envisions land development within and near these areas. The potential for slope failure and landslides can be exacerbated in these regions in the aftermath of a wildfire. Due to the unpredictable nature of wildfires in California, it is anticipated that projects in the proposed 2026 RTP/SCS could exacerbate wildfire risk both in exposure to wildfires and in the aftermath conditions as a result of runoff, post-fire slope instability, or drainage changes as a result of wildfires denuding a slope. Even with implementation of required policies and measures, it is not possible to prevent the proposed 2026 RTP/SCS projects from exposing people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Therefore, wildfire impacts would be significant.

Construction and Fire Risk

There are proposed 2026 RTP/SCS transportation projects that are in or adjacent to SRAs. Construction activities for transportation and land use projects within the 2022 RTP/SCS involving the use of vehicles and heavy machinery could result in the ignition of a wildfire. During construction, heavy equipment and passenger vehicles driving on vegetated areas prior to clearing and grading could increase the risk of fire. Heated mufflers, explosives used during site preparation or line splicing, and improper disposal of cigarettes could potentially ignite surrounding vegetation. The use of heavy equipment, such as bulldozers and graders, has the potential to accidentally ignite a fire from sparks created when equipment blades strike rocks or metal objects. If noticed by the equipment operator or other project specific personnel, small ignitions can easily be suppressed by the construction equipment and/or on-site fire watch personnel. A fire could also be started during a project's construction by project personnel improperly disposing of burning cigarettes in areas covered with wildland vegetation and within 50 feet of combustible material storage.

Moreover, if the introduction of invasive, non-native plants is not controlled during construction, a project site could progressively become dominated by non-native plants which tend to increase the frequency and severity of wildfires. Based on recent scientific evidence, it is likely that anthropogenic climate change will continue to chronically enhance the potential for western U.S. forest fire activity when fuels are not limiting. As discussed further in Section 4.8, *Greenhouse Gas Emissions and Climate Change*, increasingly difficult drought conditions and extreme weather events will continue to raise wildfire risk within the StanCOG region.

New construction would be subject to the latest California Fire Code, which contains safety measures to minimize the threat from wildfires. Title 14 of the California Code of Regulations sets forth the minimum development standards for emergency access, fuel modification, setback, signage, and water supply, which help prevent loss of structures or life by reducing wildfire hazards. The codes and regulations would reduce the risk of loss, injury, or death from wildfire for new development envisioned by the proposed 2026 RTP/SCS, but not entirely. Therefore, impacts involving the installation or maintenance of associated infrastructure that may exacerbate fire risk would be significant.

Landslide Risk

Global climate change will pose an increasing threat to wildland areas and nearby urban environments. The potential for slope failure and landslides can be exacerbated in these regions in the aftermath of a wildfire, even with adherence to the above sited regulations. Hillsides can become denuded of vegetation and become unstable, increasing the potential for landslide risks and associated hazards downslope from such landslides. Potential impacts related to slope stability and landslides are discussed in Section 4.7, *Geology and Soils*. As discussed therein, stable slope conditions vary depending on location of the project within the region. Seismic related ground failure such as landslides may result from an earthquake in the StanCOG region. Unstable geologic formations susceptible to landslides occur in the Diablo Range to the west of I-5 and along river bluffs. As such, any projects located in these areas, including State Routes 4, 108, 120, 132, 219, and I-5, are particularly susceptible to landslides. The areas west of I-5 are classified as a landslide susceptibility class of four. In areas of high susceptibility to landslides (near foothill areas), proposed 2026 RTP/SCS projects would be required to conform Stanislaus County Code of Chapter 16.05.060, Amendment of CBC, Appendix J—Grading, prior to approval of construction. Even with this compliance, impacts exposing people or structures to significant risks, including landsides, as a result of post-fire slope instability would be significant.

Flooding and Pollutant Runoff

This same issue applies to runoff and flooding potential after a wildfire with denuded and unstable hillsides. Potential impacts related to flooding, runoff, and drainage are discussed in Section 4.10, *Hydrology and Water Quality*. Projects would be required to comply with existing design guidelines and Stanislaus Multi-Agency Regional Storm Water Resource Plan requirements for post-development peak stormwater flows and Best Management Practices to avoid and/or minimize flooding impacts and impacts to on-site and off-site drainage. Even through adherence to these regulations, impacts associated with exposure of people or structures to downslope or downstream flooding or landslides as a result of runoff due to post-fire slope instability would continue to be significant. However, even with adherence to these regulations, people or structures may still be exposed to downslope or downstream flooding or landslides as a result of runoff due to post-fire slope instability, and impacts would be significant.

The following mitigation measures would reduce the significant wildfire impacts discussed above.

Mitigation Measures

For transportation projects under its jurisdiction, StanCOG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures where applicable for transportation projects implementing the proposed 2026 RTP/SCS that would result in impacts to significant risks of loss, injury, or death from wildfires. The County and cities in the StanCOG region can and should implement these measures, where relevant to land use projects implementing the proposed 2026 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

W-1 Wildfire Risk Reduction

If an individual transportation or land use project included in the proposed 2026 RTP/SCS is within or less than two miles from a High or Very High FHSZ in the SRA as established by California Public Resources Code (PRC) Sections 4201 through 4204, or a High or Very High FHSZ in the LRA designated pursuant to California Government Code, Sections 51175 through 51189, the implementing agency shall require appropriate mitigation to reduce the risk. Examples of mitigation to reduce risk of loss, injury or death from wildlife include, but are not limited to:

- Require the use of fire-resistant vegetation native to Stanislaus County and/or the local microclimate of the project site and discourage the use of fire-prone species, especially nonnative, invasive species.
- Enforce defensible space regulations compliant with PRC Section 4291 or stricter as designated by the local governing body to keep overgrown and unmanaged vegetation, accumulations of trash and other flammable material away from structures.
- Provide public education about wildfire risk, fire prevention measures, and safety procedures and practices to allow for safe evacuation and/or options to shelter-in-place during a wildfire emergency.
- Require adherence to the local hazard mitigation plan, as well as the local general plan policies and programs aimed at reducing the risk of wildfires through land use compatibility, training, sustainable development, brush management, public outreach, and service standards for fire departments.
- Ensure sufficient emergency water supply and operations for wildland fire suppression.
- Encourage the development of landscaping maintenance schedules to include removal/ treatment of annual invasive species which may contribute to increased fuel loading.
- Require a fire safety plan be submitted to and approved by the local fire protection agency. The fire safety plan shall include all of the fire safety features incorporated into the project and the schedule for implementation of the features. The local fire protection agency may require changes to the plan or may reject the plan if it does not adequately address fire hazards associated with the project as a whole or the individual phase of the project.
- Prohibit certain project construction activities with potential to ignite wildfires during red-flag warnings issued by the National Weather Service for the project site location. Example activities that shall be prohibited during red-flag warnings include welding and grinding outside of enclosed buildings.

- Require fire extinguishers to be onsite during construction of projects. Fire extinguishers shall be maintained to function according to manufacturer specifications. Construction personnel shall receive training on the proper methods of using a fire extinguisher.
- Prohibit smoking and open fires at individual transportation or land use project sites implementing the proposed 2026 RTP/SCS during construction and operations. Provide the lead agency with a copy of the notification to all contractors regarding prohibited smoking.
- Encourage the use of external sprinklers for new development mapped within Very High FHSZs.
- Complete corridor-specific evaluations and implement traffic management measures, including coordination with local emergency response agencies.
- Incorporate post-fire debris-flow, erosion, or landslide risk assessments during the design phase for hillside facilities or projects located in areas subject to post-fire geologic hazards.

Significance After Mitigation

With implementation of Mitigation Measures W-1, the risk of loss of structures and transportation infrastructure and the risk of injury or death due to wildfires would be reduced. These measures would make structures and transportation infrastructure more fire resistant and less vulnerable to loss in the event of a wildfire. These measures would also reduce the potential for construction of proposed 2026 RTP/SCS projects to inadvertently ignite a wildfire. In addition, specific project impacts regarding wildfire risk would be addressed prior to project implementation during the planning and design process.

However, it is not feasible to prevent a significant risk of wildfires or fully protect people and structures from the risks of wildfires in all cases. Therefore, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

4.16.4 Cumulative Impacts

A wildfire ignited in the StanCOG region could spread into adjoining counties as identified in Chapter 3.3.4, *Cumulative Impact Methodology*. Likewise, wildfires ignited in counties adjoining the StanCOG region could spread into the StanCOG region. Therefore, the cumulative impact analysis area for wildfire consists of the StanCOG region and the adjoining counties. Information regarding these adjoining counties can be found in Chapter 3, *Environmental Setting, 3.3.4 Approach for Cumulative Analysi*s. This analysis is based on growth projections within the cumulative impact analysis area.

The proposed 2026 RTP/SCS is not expected to substantially increase wildfires, but the occurrence of wildfires always exists within the StanCOG region and transportation and land use projects under the proposed 2026 RTP/SCS could place people and structures within or less than two miles from an SRA or Very High FHSZ. Construction and operation of projects would risk exacerbating these existing fire hazards by creating additional potential sources of fire ignition.

During construction and operation of cumulative projects within the analysis area, including those in the StanCOG region and adjacent counties, multiple projects occurring simultaneously could result in wildland fire ignitions. If more than one ignition were to occur at the same time, these fires could interact or combine, increasing fire intensity and spread beyond existing conditions. In addition, cumulative growth and development in adjacent counties would increase human activity in fire-prone areas, further elevating the likelihood of wildfire ignitions that could spread across jurisdictional boundaries into the StanCOG region. The combination of these factors could increase

the frequency, intensity, and geographic extent of wildfires above natural conditions. Therefore, cumulative wildfire impacts would be significant.

The land use scenario envisioned in the proposed 2062 RTP/SCS would result in some projects located within or less than two miles from an SRA or Very High FHSZ, causing significant wildfire impacts, as existing codes and regulations cannot fully prevent wildfires from being generated and damaging structures or populations. These projects would increase the potential to ignite fires and therefore risk exacerbating the potential for loss or damage from wildfire. This added risk could start wildfires that could spread outside the StanCOG region impacting adjacent counties and communities. As a result, the proposed 2026 RTP/SCS would contribute to significant cumulative wildfire impacts, and its contribution would be cumulatively considerable.

Mitigation Measure W-1, described earlier in this section, would reduce the proposed 2026 RTP/SCS contribution to this cumulative impact. However, the overall cumulative increase in fire frequency would continue to be substantial, and impacts related to the impairment of emergency response and evacuation plans, exposure of project occupants to wildfire, increased wildfire risk, or exposure of project occupants to wildfire-related risk would remain significant and unavoidable. As such, the proposed 2026 RTP/SCS's contribution would be cumulatively considerable after mitigation.

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4.17 Effects Considered Less Than Significant

Section 15128 of the *CEQA Guidelines* requires an EIR to briefly describe any possible significant effects that were determined not to be significant. The environmental factors discussed below represent the remainder of the checklist questions as listed in Appendix G of the *CEQA Guidelines* that were not discussed in the other impact sections of the EIR.

4.17.1 Mineral Resources

1. *Would the project 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?*
2. *Would the project 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?*

The proposed 2026 RTP/SCS primarily involves modifications to existing roadways, including improvements related to intersections, safety, and widening as well as alternative transportation projects. In addition, infill and transit-oriented development projects envisioned by the proposed 2026 RTP/SCS would be located within existing urbanized areas. As indicated in the County of Stanislaus's General Plan Land Use Element, minerals commercially excavated in the county are located in the floodplains of rivers and streams, particularly by the Tuolumne and Stanislaus Rivers and Orestimba Creek (County of Stanislaus 2016a) and not within incorporated cities. These mineral resource areas are protected by the Stanislaus County Code of Ordinances Section 21.88.170, which does not allow incompatible land uses to be placed next to a mineral resource zone unless granted conditions of approval. In addition, pursuant to Implementation Measure 2 of Policy 27 of the County of Stanislaus's General Plan Conservation/Open Space Element, any approval of potentially incompatible land uses in and surrounding areas containing significant deposits of extractive mineral resources shall include conditions mitigating the significant land use conflicts (County of Stanislaus 2016b). Furthermore, any future individual projects would be required to identify and mitigate project-specific impacts pertaining to mineral resources during the environmental review under CEQA.

There are no projects under the proposed 2026 RTP/SCS that would directly result in the extraction, exploration, or digging for mineral resources, or prevent such activities. Therefore, the proposed 2026 RTP/SCS would not result in the loss of a known mineral resource that would be of value to the region and the residents of the State or result in the loss of availability of a locally important mineral resource recovery site. Impacts related to mineral resources would be less than significant.

4.17.2 Public Services

1. *Would the project 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:*
    a. *Fire protection?*
    b. *Police protection?*
    c. *Schools?*

d. Parks?

e. Other public facilities?

Transportation projects under the proposed 2026 RTP/SCS would not generate demand for police or fire services, schools, parks, or other public facilities beyond what is already planned for in the incorporated cities and unincorporated county area of the StanCOG region. The majority of these projects are related to maintenance and pedestrian improvement that would not involve the construction of new public services infrastructure. Transportation projects would not increase the population of the StanCOG region, and transportation projects would not require the removal or replacement of existing public service facilities. New projects at Turlock and Oakdale Airports include pavement preservation construction, infrastructure improvements, new runway construction and various other improvements. These projects similarly aim to improve existing transportation services in the SJCOG region. As such, they would not increase demand on public services such as fire and police protection, schools, parks, or other public facilities.

Future growth and land use development may increase demand for public services; however, demand is not expected to exceed that already anticipated within the general plans and regional growth forecasts prepared for each respective area in which proposed SCS development would be located. As discussed in Section 4.13, *Population and Housing*, growth in the StanCOG region would not be a result of the proposed 2026 RTP/SCS. The proposed 2026 RTP/SCS is designed to accommodate the people, households, and jobs identified in regional growth forecasts. While growth would occur, the proposed 2026 RTP/SCS distributes this growth consistent with adopted plans and would not induce population growth beyond what has been previously anticipated. Additionally, the proposed 2026 RTP/SCS includes land use strategies that would allow for denser, more compact development in identified infill development areas; therefore, service areas for existing providers are not anticipated to expand. The Stanislaus County General Plan includes policies and implementation programs to ensure adequate public services are maintained. Policy 24 of the Land Use Element states that future growth shall not exceed the capabilities of the provider of services for public safety or schools. In addition, Policy 5, Implementation Measure 1 of the Land Use Element states that residential development shall not be approved at the maximum density if environmental impacts, such as those the public services, cannot be mitigated (County of Stanislaus 2016a). Cities have similar general plan policies. The StanCOG region has planned for growth that would be accommodated by the proposed 2026 RTP/SCS; thus, the proposed 2026 RTP/SCS would be consistent with Policies 5 and 24 of the Stanislaus County General Plan. Planning for growth will continue to occur throughout implementation of the proposed 2026 RTP/SCS, and individual jurisdictions would increase services as necessary and planned.

The number, location, physical sizes, and designs of future new and expanded fire and police protection facilities are unknown. As a result, specific environmental impacts associated with specific development cannot be speculated. However, if an individual jurisdiction chooses to increase fire or police protection facilities, the expansion of existing facilities and the development of new facilities would be subject to project-specific environmental review under CEQA whereby environmental impacts would be identified and mitigated accordingly. As mentioned above, growth that would be distributed by the proposed 2026 RTP/SCS has been accounted for within general plans and other regional growth forecasts. As such, any increased demand for fire or police protection facilities has been anticipated, and the proposed 2026 RTP/SCS would not induce growth such that increased fire or police protection facilities are necessary beyond what has already been determined by individual jurisdictions.

Future project sponsors are required by law to pay development impacts fees for schools at the time building permits are issued. The fees are used by school districts to mitigate impacts associated with long-term operation and maintenance of school facilities. Pursuant to Section 65996 of the California Government Code, payment of these fees fulfils complete mitigation of environmental impacts.

Through regulatory compliance, adequate parkland acreages would be maintained throughout the StanCOG region. For a full discussion of parks, refer to Section 4.17.3, *Recreation*, below.

Based on the above discussion, impacts related to public services would be less than significant.

4.17.3 Recreation

1. *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?*
2. *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?*

The proposed 2026 RTP/SCS would accommodate the people, households, and jobs identified within StanCOG's regional growth forecast. Transportation projects under the proposed 2026 RTP/SCS would not generate demand for parkland or recreational resources. However, the overall growth resulting from the land use pattern established by the proposed 2026 RTP/SCS would result in an increased demand for services including recreational facilities.

Development of the individual land use projects in the proposed 2026 RTP/SCS would be required on a project-by-project basis to pay development fees towards the applicable jurisdiction. Since passage of the 1975 Quimby Act, cities and counties have been authorized to adopt ordinances requiring developers to set aside land, donate conservation easements, or pay fees that can be used for purposes of acquiring parkland to maintain identified parkland acreages per 1,000 in population. In accordance with the Quimby Act, the County of Stanislaus requires three net acres of developed neighborhood parks per 1,000 residents through land dedication and development (County of Stanislaus 2016a). Cities throughout the StanCOG region have similar requirements implemented via their general plans. All future development under the proposed 2026 RTP/SCS would be required to comply with these regulations. The payment of fees or provision of parkland would go toward maintaining parks or providing new park space, which would also reduce use of existing recreational facilities. Reduced use of existing facilities would result in a corresponding decrease in deterioration of existing recreational facilities. Therefore, impacts related to recreation would be less than significant.

4.17.4 Utilities and Service Systems

1. *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*
2. *Would the project have sufficient water supplies available to serve the project and reasonably foreseeable development during normal, dry and multiple dry years?*

3. *Would the project result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's demand in addition to the provider's existing commitments?*
4. *Would the project 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?*
5. *Would the project comply with federal, state, and local management and reduction statutes related to solid waste?*

Future infill and development projects envisioned by the proposed 2026 RTP/SCS would occur in urbanized areas and would connect to existing utilities. However, the proposed 2026 RTP/SCS does not induce a population beyond what is generally projected and accounted for in local and regional plans. The proposed 2026 RTP/SCS is not inducing population growth but rather establishing a framework to accommodate anticipated growth. As such, any growth facilitated by the proposed 2026 RTP/SCS would not require new utilities facilities beyond what is already anticipated in regional growth forecasts, Capital Improvement Programs, and general plans.

Urban Water Management Plans (UWMPs) for the StanCOG region estimate and pursue the efficient use of available water supplies identifying short-term and long-term water demand management measures. UWMPs are generally updated every five years to account for water demand resulting from the growth envisioned in general plan updates and updated population growth forecasts. Therefore, the current UWMPs applicable to the StanCOG region generally account for the land development envisioned within the proposed 2026 RTP/SCS because it is largely consistent with relevant planning documents, such as general plans. Furthermore, Groundwater Sustainability Plans prepared under the Sustainable Groundwater Management Act are implemented in order to protect groundwater in the StanCOG area. The proposed 2026 RTP/SCS would adhere to the water conservation requirements set forth within these plans. Regional growth forecasted within the proposed 2026 RTP/SCS, general plans, and other documents are accounted for in UWMPs and Groundwater Sustainability Plans and any growth facilitated by the proposed 2026 RTP/SCS would not be in excess of anticipated growth forecasts. Thus, the proposed 2026 RTP/SCS would not result in insufficient water supplies or a determination by a wastewater treatment provider that inadequate capacity exists to serve the anticipated demand.

Transportation and land use development projects implementing the proposed 2026 RTP/SCS would be required to comply with the California Green Building Code and Senate Bill 1016, which require that construction operations recycle a minimum of 50 percent of waste generated. Similarly, land use projects would also be required to comply with federal, State, and local statutes and regulations related to solid waste, including Subtitle D of the Resource Conservation and Recovery Act and Title 40 of the Code of Federal Regulations, which establish criteria for municipal solid waste landfills, as well Assembly Bill 939, which mandates a 50 percent waste diversion rate, and Assembly Bill 341, which establishes a statewide goal of 75 percent waste diversion. In addition, projects implemented by the proposed 2026 RTP/SCS would be subject to local jurisdiction goals and policies for recycling and diversion of solid waste. Compliance with these requirements would ensure that solid waste generated from land use development would be minimized to the extent practical and that diversion rates would increase into the future as development included in the proposed 2026 RTP/SCS is built out. Non-diverted waste generated by transportation and land use development projects included in the proposed 2026 RTP/SCS would be disposed in the Fink Road landfill and at multiple transfer stations within the StanCOG region (County of Stanislaus 2016b). The Fink Road landfill is adequate for handling existing solid waste and future waste generated throughout

buildout of the proposed 2026 RTP/SCS because it has an estimated closure date of October 2050 and a remaining capacity of 18,993,322 cubic yards, as of 2019 (California Department of Recycling and Recovery 2026). Therefore, the proposed 2026 RTP/SCS would not generate solid waste in excess of State or local standards or conflict with federal, State, and local management and reduction statutes.

Based on the above discussion, impacts related to utilities and service systems would be less than significant.

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5 Other CEQA Required Discussions

This section discusses growth-inducing impacts, irreversible environmental impacts, and significant and unavoidable impacts from development facilitated by the proposed 2026 RTP/SCS.

5.1 Growth-Inducing Impacts

Section 15126.2(g) of the *CEQA Guidelines* requires a discussion of a proposed project's potential to induce growth. Specifically, an EIR must discuss the ways in which the proposed project could foster or facilitate economic or population growth, such as by providing employment opportunities or removing obstacles to population growth. In addition, the EIR must discuss how the project may encourage and/or facilitate other activities that could significantly affect the environment. It cannot be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment. Economic and population growth does not necessarily create significant and direct physical changes to the environment. However, depending upon the type, magnitude, and location of growth, it can result in significant environmental effects. A project's growth inducing potential is considered significant if growth generated by the project could result in significant effects to one or more environmental issue areas.

5.1.1 Employment, Household, and Population Growth

The StanCOG Board adopted a 2025 Stanislaus County Demographic and Employment Forecast in January 2025. The purpose of this forecast is to provide estimates of populations, households, and employment for Stanislaus County to support several planning initiatives. StanCOG does not hold land use authority and cannot directly affect populations growth, as development would be facilitated through implementation of the proposed 2026 RTP/SCS, rather than proposing individual growth-inducing projects. The proposed 2026 RTP/SCS intends to address economic and community vitality by facilitating economic development and opportunities through infrastructure investments that support goods movement within and through the region, including but not limited to the county's strategic freight corridors. The forecasts for household and employment opportunities, according to the 2025 forecast, is shown in Table 5-1.

Table 5-1 Household and Employment Forecast by Jurisdiction

Jurisdiction	2025		2035		2045		2050	
	Housing Units	Employment	Housing Units	Employment	Housing Units	Employment	Housing Units	Employment
Ceres	13,880	24,626	13,696	25,347	14,092	26,350	14,322	26,880
Hughson	2,699	1,310	2,428	1,346	2,519	1,395	2,572	1,420
Modesto	78,229	112,638	74,879	116,719	77,090	121,952	78,368	124,788
Newman	3,811	2,215	3,702	2,287	3,859	2,382	3,951	2,435
Oakdale	8,611	9,340	8,302	9,585	8,588	9,943	8,755	10,125
Patterson	7,50	10,996	6,746	11,760	7,051	12,641	7,205	13,126
Riverbank	8,013	5,387	7,407	5,481	7,653	5,660	7,797	5,765
Turlock	25,646	37,165	24,153	38,236	24,752	39,727	25,132	40,531
Waterford	2,794	1,054	2,662	1,097	2,740	1,152	2,786	1,180
Unincorporated Central	21,458	43,767	21,749	44,820	22,249	46,382	22,538	47,170
Unincorporated Northeast	3,631	2,894	3,694	2,966	3,802	3,057	3,865	3,095
Unincorporated South	6,536	10,426	6,634	10,629	6,805	10,909	6,903	11,033
Unincorporated West	2,653	5,436	2,702	5,451	2,789	5,499	2,839	5,516
(Sub-Total Unincorporated)	*36,3502*	*62,524*	*34,779*	*63,867*	*35,644*	*65,847*	*36,146*	*66,814*
Total	**187,534**	**267,255**	**178,771**	**275,725**	**184,009**	**287,050**	**187,057**	**293,063**
Increase*	–	–	**1.72%**	**3.17%**	**4.70%**	**7.41%**	**6.44%**	**9.66%**

Source: DOF 2025; Stanislaus County 2025

*Increase refers to the percent increase from 2025

As discussed in Chapter 2, *Project Description,* the proposed 2026 RTP/SCS intends to provide framework on how to plan for expected growth, accommodate the inevitable growth of the region, and distribute growth. The land use scenario envisioned by the proposed 2026 RTP/SCS would facilitate the development of infill and transit-oriented development projects within existing urbanized areas and therefore could redistribute growth patterns. As discussed in Section 4.11, *Land Use and Planning,* the proposed 2026 RTP/SCS projects have been anticipated by the general plans of applicable local jurisdictions, as all improvements have been coordinated with applicable local jurisdiction. The improvements are designed and intended to accommodate anticipated growth, which would occur regardless of the implementation of the proposed 2026 RTP/SCS.

As discussed in Section 4.11, *Land Use and Planning*, the land use scenario envisioned in the proposed 2026 RTP/SCS was developed in close coordination with StanCOG member agency planning staff and also builds on local general plans and general plan updates currently in process or completed. Central to the SCS is a land use plan identifying the general location of uses, residential densities, and building intensities within the region. The proposed 2026 RTP/SCS accounts for the land uses of nine incorporated cities and numerous unincorporated communities. Starting with land uses allowed by existing, adopted local General Plans, the land use plan envisioned by the proposed 2026 RTP/SCS emphasizes more compact, mixed-use and infill development than what is generally provided for in existing general plans applicable to the region. This scenario would provide for higher density residential and employment uses, in addition to mixed-use designations, within urbanized areas and along major transportation corridors in the region. This focus intends to limit

growth outside of the city boundaries, which would minimize impacts on rural areas which contain the majority of agricultural land throughout the County and reduce vehicle miles traveled. Therefore, direct population growth impacts would be less than significant.

Implementation of the proposed 2026 RTP/SCS would create short-term economic growth in the region as a result of construction-related job opportunities. Implementation of the proposed 2026 RTP/SCS would also generate additional employment opportunities for roadway, vehicle, and landscape maintenance, and public transit facility clean-up. The potential employment increase may subsequently increase the demand for support services and utilities, which could generate secondary employment opportunities. This additional economic growth would likely raise the existing revenue base within the region. Although such growth may incrementally increase economic activity in the County, significant physical effects are not expected to result from economic growth generated by the proposed 2026 RTP/SCS.

Furthermore, while development envisioned as part of the proposed 2026 RTP/SCS could result in additional commerce, industry, recreation, public services, and infrastructure throughout the region, this economic activity would be consistent with the regional growth forecast and local general plans. Forecasted growth would be accommodated under the proposed 2026 RTP/SCS; therefore, the Plan would not be growth inducing, but rather it reflects the regulatory mandate to house the forecasted population and be based on the latest planning assumptions.

The proposed 2026 RTP/SCS was developed to integrate forecasted population increases, employment opportunities, and housing needs within the StanCOG area. Therefore, the proposed 2026 RTP/SCS is designed to accommodate growth that would occur with or without its adoption; it is not designed, nor is it anticipated to, induce population growth beyond the levels forecasted.

5.1.2 Removal of Obstacles to Growth

The majority of proposed 2026 RTP/SCS transportation improvements are located in existing urbanized areas such as Modesto, Turlock, and Oakdale; however, projects are also located in rural or semi-rural areas. Such transportation improvements can be perceived as removing an obstacle to growth by either creating additional traffic capacity (in the case of road widening projects) or providing new or better access to undeveloped areas (in the case of road extensions). New infrastructure may also serve to accelerate or shift planned growth or encourage and intensify unplanned growth. These transportation network improvements would remove obstacles to growth in some areas of the region, which would support additional housing, population and economic growth, and could therefore be considered growth inducing.

However, the proposed 2026 RTP/SCS transportation improvements are designed to fully support a compact development approach as outlined in the SCS component of the proposed 2026 RTP/SCS and fully support the complementary transportation needs of the growing population. The SCS component is designed to accommodate growth by encouraging infill and mixed-use development. The proposed 2026 RTP/SCS transportation improvement projects are intended and designed to support the land use projects established in the SCS. As a result, the proposed 2026 RTP/SCS would not induce growth beyond that anticipated by 2050; rather, it is intended to accommodate it by encouraging infill and TOD development within existing urban areas. Therefore, the proposed 2026 RTP/SCS is consistent with projected and planned growth. Further, all transportation improvement projects are anticipated by the general plans of the applicable local jurisdictions of the planning area, as all improvements have been coordinated with the applicable local jurisdiction.

5.2 Significant Irreversible Environmental Changes

Section 15126.2(c) of the CEQA Guidelines requires a discussion of significant irreversible environmental changes that would occur as a result of a proposed project. These may include current or future uses of nonrenewable resources and secondary or growth-inducing impacts that commit future generations to similar uses. CEQA requires that irretrievable commitments of resources be evaluated to ensure that such current consumption is justified.

Although the proposed 2026 RTP/SCS forecasts to a horizon year of 2049 transportation improvement projects would have an indefinite life span, assuming regular maintenance of the proposed improvements and long-term occupancy of infill and TOD projects. The proposed improvements would be located primarily in areas where transportation facilities already exist, where transportation facilities are already planned, or where transportation facilities are needed to support the new land use patterns identified in the SCS. Therefore, most proposed transportation projects are not generally expected to dramatically alter development patterns in the County and projects would support planned future development patterns. The proposed 2026 RTP/SCS would provide a foundation for local, regional, and State officials in making decisions aimed at achieving a coordinated and balanced transportation system.

Many of the adverse impacts that could occur from implementation of the proposed 2026 RTP/SCS are short-term in nature resulting primarily from construction of the proposed transportation projects, urban infill and mixed-use development projects. Typical construction-related impacts can involve the following issues: noise, air quality, aesthetics and construction-related erosion and associated water quality impacts. In addition, though such materials would not be used in a wasteful manner, all construction activity would involve the use of non-renewable energy sources, potable water and building materials (see Section 4.6, *Energy*). The use of these resources during construction would increase demand and impact supplies across the StanCOG region.

Long-term irreversible environmental impacts are associated with increased asphalt or concrete paving and related direct and cumulative impacts to geology and soils; biological and cultural resources (historic resources); transportation; and hydrology and water quality, as discussed in their respective sections of this EIR. In addition, the proposed 2026 RTP/SCS would result in an overall increase in the urbanized character of the region, which would have long-term irreversible aesthetic impacts. Mitigation measures have been prescribed to minimize the long-term impacts of the proposed 2026 RTP/SCS. However, in certain instances, as discussed in Section 5.3 below, impacts could remain significant with implementation of mitigation measures.

5.3 List of Significant and Unavoidable Impacts

The proposed 2026 RTP/SCS would result in the following significant and unavoidable impacts. For the full discussion of each impact, please refer to the section where it is discussed.

- Impact AES-1: Public views of scenic vistas and scenic resources within state scenic highways
- Impact AES-2: Degradation of existing visual character
- Impact AES-3: Increased light and glare
- Impact AG-1: Conversion of Important Farmland to nonagricultural use and conflicts with agricultural uses or conflicts with existing zoning or a Williamson Act contract
- Impact AQ-1: Conflicts or obstruction of implementation of an applicable air quality plan

- Impact AQ-2: Result in a cumulatively considerable net increase of criterial pollutants for which the project region is in non-attainment (construction)
- Impact AQ-3: Result in a cumulatively considerable net increase of criterial pollutants for which the project region is in non-attainment (operation)
- Impact AQ-4: Exposure of sensitive receptors to substantial pollutant concentrations
- Impact BIO-1: Substantial adverse impacts on special-status species
- Impact BIO-2: Substantial adverse impacts on riparian areas, wetlands, and other sensitive habitats
- Impact BIO-3: Interference to wildlife migration
- Impact CR-1: Substantial adverse change in the significance of a historical resource
- Impact CR-2: Substantial adverse change in the significance of an archaeological resource
- Impact GEO-4: Disturbance of known and unknown paleontological resources
- Impact GHG-1: Generation of greenhouse gas emissions during construction
- Impact GHG-2: Net increase in greenhouse gas emissions by 2049 compared to existing baseline conditions
- Impact GHG-4: Conflict with State and applicable local greenhouse gas reduction targets and goals
- Impact HAZ-3: Public and environmental hazards due to development on a hazardous material site
- Impact HYD-2: Decrease groundwater supplies or interfere substantially with groundwater recharge
- Impact HYD-5: Conflict with implementation of a water quality control plan or sustainable groundwater management plan
- Impact N-1: Temporary increase in ambient noise levels during construction and substantial absolute noise increase
- Impact N-2: Permanent increase in ambient noise levels and substantial absolute noise increase
- Impact N-3: Generate excessive groundborne vibration levels
- Impact N-4: Expose sensitive receptors to noise levels in excess of standards established in a local general plan or noise ordinance
- Impact N-5: Exceed applicable exterior and interior noise thresholds due to close proximity to existing airports
- Impact TCR-1: Substantial adverse change in the significance of a tribal cultural resource
- Impact WF-1: Expose people or structures to significant risks associated with wildfire and install or maintain associated infrastructure that may exacerbate fire risk

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6 Alternatives

As required by Section 15126.6(d) of the *CEQA Guidelines*, this EIR examines a reasonable range of alternatives to the proposed 2026 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS). Section 15126.6 of the *CEQA Guidelines* requires that an EIR "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives."

In addition, the *CEQA Guidelines* state the following:

- An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible. The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly discuss the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are (i) failure to meet most of the basic project objectives, (ii), infeasibility, or (iii) inability to avoid significant environmental impacts. (*CEQA Guidelines* Section 15126.6(a)(c).)
- "Feasible" means capable of being accomplished within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. (*CEQA Guidelines* Section 15364.)

The primary objective of the RTP/SCS is to comply with applicable regulatory requirements, including California Transportation Commission Guidelines and Senate Bill (SB) 375 regional greenhouse gas (GHG) reduction targets. StanCOG's specific objectives for the proposed 2026 RTP/SCS are to additionally ensure that the transportation system planned for the StanCOG region accomplishes the following:

- Mobility and Accessibility. Improve the ability of people and goods to move between desired locations and provide a variety of modal and mobility options.
- Safety and Health. Operate and maintain the transportation system to ensure public safety and security and improve the health of residents by improving air quality and providing more transportation options.
- Social Equity. Promote equitable access to opportunities by ensuring all populations share in the benefits of transportation improvements and are provided a range of transportation and housing choices.
- System Preservation. Maintain the transportation system in a state of good repair and protect the region's investment by maximizing use of existing transportation facilities.
- Economic and Community Vitality. Foster job creation, business attraction, retention, and expansion by improving quality of life. Facilitate economic development and opportunities through infrastructure investments that support goods movement within and through the region, including but not limited to the county's strategic freight corridors.

- Smart Infrastructure. Coordinate, monitor, and integrate planning and programming for intelligent transportation systems (ITS), smart infrastructure, demand-responsive transportation, and automated vehicles.
- Sustainable Development Pattern. Provide a mix of land uses and compact development patterns and encourage infill development to preserve agricultural land and natural resources.
- Resiliency and Reliability. Harden infrastructure to resist, absorb, recover from, or successfully adapt to adversity or a change in conditions including climate change.
- Congestion Management. Maintain or reduce congestion as compared to current levels.
- Environmental Quality. Consider environmental impacts when making transportation investments and minimize impacts on clean air and natural resources. Support infrastructure investments that facilitate vehicle electrification and the provision of electrification infrastructure in public and private parking facilities and structures.
- Project Delivery. Efficiently use available transportation funding to expedite project delivery of transportation improvements within the region for the benefit of residents of Stanislaus County and the traveling public in general.

Each scenario analyzed during the RTP/SCS process was developed according to a theme to help ensure that choices regarding land use and transportation investments were consistent with one another. Land use choices in each scenario included development patterns, such as where to locate new housing, new job centers, and new mixed-use areas relative to existing communities (e.g., infill vs. converted farmland or open space). They also considered the density of new development, which dictates the relative proportion of large-lot single-family housing to small-lot single-family housing and multi-family housing, and complementary uses, such as locating new housing near services and employment centers. Transportation investment choices in a scenario included decisions about spending levels on new roadway capacity, roadway maintenance, transit, and alternative modes of travel (e.g., bike and pedestrian). The alternative land use and transportation scenarios modeled and analyzed by StanCOG are described in Chapter 8, *Scenario Development,* and Chapter 9, *Scenario Evaluation*, of the proposed 2026 RTP/SCS, as well as Chapter 2 of this EIR.

6.1 Alternatives Development and Screening Process

During the development of the proposed 2026 RTP/SCS, StanCOG developed and evaluated scenarios that included various land use assumptions to see how each scenario could achieve the GHG targets established by CARB for the StanCOG region as well as other performance measures based on the proposed transportation system improvements and investments in the RTP. Extensive outreach with partner agencies, local jurisdictions, key stakeholders, and the public was ongoing throughout the proposed 2026 RTP/SCS planning process. Four scenarios were evaluated by StanCOG. The proposed 2026 RTP/SCS evaluated throughout this EIR is Scenario C, Mixed-Use with Jobs Focus. Alternative 1 is Scenario A, Business as Usual; Alternative 2 is Scenario B, Mixed-Use with Increased Transit, and Scenario D is discussed under *Alternatives Considered but Rejected*.

This alternatives analysis herein includes the following:

- **Alternative 1: No Project Alternative** (SCS Scenario A: Business as Usual). The No Project Alternative involves continued implementation of the 2022 RTP/SCS, which is characterized by incremental neighborhood-scale development through missing-middle housing forms while still accommodating a portion of growth in undeveloped areas. This scenario would continue implementation of current plans that accommodate smaller-scale residential development

through neighborhood-scale infill and missing-middle housing forms. Only transportation projects from the approved 2022 RTP project list would be constructed under this alternative.

- **Alternative 2: Mixed-Use with Increased Transit Connections** (SCS Scenario B: Mixed-Use with Increased Transit Connections). This alternative would concentrate new growth in horizontal mixed-use formats within high quality transit corridors and in transit-oriented communities. The primary objective of the Mixed-Use with Increased Transit Alternative is to increase residential and employment density, improve the jobs-housing balance, and support non-automobile mode shares. This alternative would involve the highest ratio of multi-family to single-family housing across all scenarios, predominantly in existing and new mixed-use developments. The transit investment program expands the single-corridor 2022 RTP/SCS bus-rapid transit (BRT) concept into a multi-corridor BRT network structured around the Modesto Transit Center as the primary hub. This alternative aims to establish a high-quality transit network while implementing the StanCOG Non-Motorized Transportation Plan (Countywide Bicycle and Pedestrian Plan) with an emphasis on first and last-mile connectivity to provide complete non-automobile connections between a wide variety of complementary land uses.

Both alternatives are described and analyzed below to determine whether environmental impacts would be similar to, less than, or greater than those of the preferred scenario in the proposed 2026 RTP/SCS. As required by CEQA, this section also includes a discussion of the "environmentally superior alternative" among those studied.

6.2 Alternatives Considered but Rejected

The *CEQA Guidelines* state that an EIR should identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination (*CEQA Guidelines* Section 15126.2(c)). Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are (i) failure to meet most of the basic project objectives, (ii), infeasibility, or (iii) inability to avoid significant environmental impacts (*CEQA Guidelines* Section 15126.6(c)).

For this EIR, two alternatives were considered by StanCOG and rejected as infeasible. These alternatives and the reasons for elimination are described below.

6.2.1 Missing Middle Housing with Increased Accessory Dwelling Unit Permitting

The Missing Middle Housing with Increased Accessory Dwelling Unit (ADU) Permitting Alternative (RTP/SCS Scenario D) was considered by StanCOG and rejected as infeasible during the scoping process for the RTP/SCS. Similar to the No Project Alternative, this scenario emphasizes incremental, neighborhood-scale intensification rather than a structural shift in regional development. This scenario would prioritize missing-middle housing types, and would expand ADU permitting to increase housing capacity within existing single family residential zones. Residential growth under this scenario would be an even split between multi-family and single-family development, wherein multi-family includes missing middle housing typologies. Transit investments include the BRT project identified in the 2022 RTP/SCS, and increased frequency of existing local intercity transit routes between Modesto, Riverbank, and Turlock, while also expanding micro transit availability.

Based on modeling results, the Missing Middle Housing with Increased ADU Permitting Alternative only slightly reduced GHG emissions and vehicle miles traveled (VMT) compared to the proposed

2026 RTP/SCS and the No Project Alternative. The alternative did not meet SB 375 goals. Therefore, this alternative was rejected as it was not environmentally superior to the project and provided little difference for comparing impacts due to its modeling results being very similar to the No Project Alternative.

6.2.2 Aggressive VMT Reduction Alternative

Due to the nature of the StanCOG region, certain aggressive VMT reducing measures are infeasible. For example, the region has a high variability in residential density and has a large rural component, with substantially longer trip lengths and therefore higher VMT for those in rural areas and commuting outside the region. These commuter trips are not easily replaced by transit, as longer transit trip lengths typically require multiple stops and/or transfers, making commuting via transit less attractive. These industries require a high level of in-person work and are therefore not conducive to telecommuting.

There are also significant agriculture activities from farm workers making seasonal transient (field-to-field) trips and agriculture goods movements. These trips are not conducive to transit and often generate longer trip lengths and thus higher VMT. The VMT generated by these activities does not respond to VMT reduction strategies such as increased transit or telecommuting.

Other measures such as higher parking fees as well as tolling highway travel are only feasible in highly urbanized areas where increased transit services are available as an alternative mode. Therefore, an aggressive VMT reduction alternative was not considered as an alternative for detailed consideration in this EIR.

6.3 Alternative 1: No Project Alternative

6.3.1 Description

Alternative 1, the No Project Alternative, represents the region continuing to move forward with the investments and policies in the previous (2022) RTP/SCS. Alternative 1 uses the 2022 Preferred Scenario as the starting point and updates it to reflect more recent development trends, but updated land use growth to better match general plans and/or area plans prepared since 2022. This alternative would keep future development roughly in the same pattern and using the same strategies that have been applied in past local general plans. Alternative 1 assumes 55 percent of residential growth would occur as single-family residences, with the remainder of growth occurring in multi-family housing. This alternative would only construct projects in the approved 2022 RTP and therefore would not include any new projects from the 2026 RTP/SCS, maintaining the current status of projects. This would result in fewer transportation projects being constructed. The transit program would be limited to the BRT project identified in the 2022 RTP/SCS, operating between the Modesto Transit Center in downtown Modesto and the Vintage Faire Mall in northwest Modesto. Complementary investments include implementation of the region's non-motorized plan and major roadway projects limited to those already voter approved.

6.3.2 Impact Analysis

a. Aesthetics

Implementation of Alternative 1 would result in fewer aesthetic impacts than the proposed 2026 RTP/SCS because it would not include the new transportation projects proposed in the 2026

RTP/SCS and would instead be limited to projects already approved in the 2022 RTP/SCS. However, development and transportation improvements would still have the potential to affect scenic vistas, scenic resources, and visual character, including views along I-5 and locally designated scenic routes. In addition, because Alternative 1 would continue historical growth patterns and development would primarily occur as single-family residences, development would be more dispersed and would occur to a greater extent on the edges of existing communities rather than through infill development. This growth pattern could result in greater conversion of agricultural and rural lands, increased urbanization of currently undeveloped areas, and greater impacts to visual character and scenic resources in less developed portions of the StanCOG region. Therefore, although visual impacts associated with transportation improvements would generally be reduced under the proposed 2026 RTP/SCS, these reductions would not be sufficient to offset visual impacts related to land use development that would impact scenic vistas, scenic resources, visual character, and light and glare. As such, impacts would remain significant and unavoidable.

b. Agriculture and Forestry Resources

Implementation of Alternative 1 would result in fewer transportation projects being constructed. As a result, fewer roadway expansions, new facilities, and right-of-way acquisitions would occur, reducing the potential for direct conversion of Important Farmland to transportation uses. However, Alternative 1 would continue historical growth trends and local development patterns rather than emphasizing infill, mixed-use, and transit-oriented development. With approximately 55 percent of residential growth occurring as single-family residences, a greater share of future development would be expected to occur at the urban fringe and in currently agricultural areas. This dispersed growth pattern would increase the potential conversion of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland to non-agricultural uses and could increase conflicts between urban development and agricultural operations, including conflicts related to noise, dust, odors, pesticide application, and farming activities. In addition, development occurring on the edges of existing communities would have greater potential to conflict with agricultural zoning and Williamson Act lands than the more infill-focused land use pattern envisioned under the proposed 2026 RTP/SCS. Therefore, while direct impacts from transportation projects would be reduced, impacts related to farmland conversion, agricultural land use conflicts, and conflicts with agricultural zoning and Williamson Act contracts would likely be greater under Alternative 1 than under the proposed 2026 RTP/SCS and would remain significant and unavoidable.

Because there are no designated forest lands or timberlands within the StanCOG region, Alternative 1, similar to the proposed 2026 RTP/SCS, would not result in impacts related to forest land, timberland, or timberland production.

Overall, impacts to agricultural resources under Alternative 1 would be greater than under the proposed 2026 RTP/SCS.

c. Air Quality

Implementation of Alternative 1 would result in reduced short-term air quality impacts from construction activity because fewer transportation projects would be implemented than under the proposed 2026 RTP/SCS, resulting in less construction-related equipment use, earthmoving activity, and associated emissions of dust and ozone precursors. However, Alternative 1 would continue historical development patterns and provide a greater share of residential growth as single-family residences, resulting in a more dispersed land use pattern and less emphasis on infill, mixed-use, and transit-oriented development. Because the proposed 2026 RTP/SCS is intended to concentrate

growth within existing urbanized areas and transportation corridors, improve multimodal connectivity, and reduce VMT, Alternative 1 would likely result in higher regional VMT and correspondingly higher emissions of criteria air pollutants and ozone precursors. Higher VMT would also lessen the air quality benefits associated with improved circulation, transit investments, and active transportation facilities included in the proposed 2026 RTP/SCS. Accordingly, operational emissions of pollutants associated with motor vehicle travel would be greater under Alternative 1 than under the proposed 2026 RTP/SCS. As Alternative 1 would support less infill and transit-oriented development near major transportation corridors, fewer sensitive receptors would likely be located in close proximity to freeways, major roadways, and transit facilities that are sources of toxic air contaminants (TACs). Therefore, impacts related to TAC exposure could be somewhat less than under the proposed 2026 RTP/SCS. Nevertheless, development would continue to occur throughout the region, and some sensitive receptors would still be exposed to elevated TAC concentrations and nuisance odors associated with transportation facilities and vehicle travel. Overall, air quality impacts under Alternative 1 would be greater than under the proposed 2026 RTP/SCS due to higher VMT and associated emissions, while impacts related to TAC exposure may be somewhat reduced. Long-term operational impacts related to criteria air pollutants, exposure of sensitive receptors to TACs, and objectionable odors would remain significant and unavoidable.

d. Biological Resources

Future transportation projects developed under this alternative would result in fewer impacts to biological resources, as fewer roadway extensions, widening projects, and creek crossings would occur under this alternative. However, because this alternative would continue current regional growth trends rather than emphasizing an infill approach to land use and housing, more development would be expected to occur outside of existing urbanized areas, including in areas providing habitat for special status plant and animal species. Overall impacts to special status plants, animals, wetlands and/or riparian habitat and wildlife movement outside developed urban areas would therefore be greater than under the 2026 RTP/SCS. Impacts would remain significant and unavoidable, as they would be for the proposed 2026 RTP/SCS.

e. Cultural Resources

As described in Section 4.5, *Cultural Resources*, transportation projects and land use development implemented under the proposed 2026 RTP/SCS have the potential to affect built-environment historical resources, including buildings, structures, bridges, and other resources that may be eligible for listing in the National Register of Historic Places, California Register of Historical Resources, or local historic registers. Because Alternative 1 would not include the new transportation projects proposed under the 2026 RTP/SCS and would instead be limited to projects already included in the 2022 RTP/SCS, fewer transportation-related impacts to historical resources would be expected. However, Alternative 1 would continue historical development trends and would place a greater share of growth in lower-density residential development at the edges of existing communities rather than emphasizing infill and transit-oriented development. As a result, redevelopment and demolition of older structures within urbanized areas may occur less frequently than under the proposed 2026 RTP/SCS, thereby reducing potential impacts to historic resources. Impacts to historic resources would therefore be reduced when compared to the proposed 2026 RTP/SCS. However, project specific impacts may still be significant, as they are for the proposed 2026 RTP/SCS.

Implementation of Alternative 1 would also involve less ground disturbance associated with transportation improvements because fewer transportation projects would be constructed. However, the more dispersed growth pattern associated with Alternative 1 would increase the likelihood of development occurring on previously undeveloped lands that may contain known or unknown archaeological resources. Although archaeological resources could also be affected by infill and redevelopment projects under the proposed 2026 RTP/SCS, the greater amount of greenfield development anticipated under Alternative 1 would increase the potential for disturbance of previously unidentified archaeological resources. Therefore, while impacts to archaeological resources from transportation projects would be reduced, impacts associated with land development in previously undisturbed areas could increase. Overall, impacts to archaeological resources under Alternative 1 would be similar to impacts of the proposed 2026 RTP/SCS, with reduced transportation-related impacts generally offset by increased development-related impacts in undeveloped areas. Impacts to archaeological resources would remain significant and unavoidable.

On balance, impacts to cultural resources under Alternative 1 would be similar to those of the proposed 2026 RTP/SCS. While Alternative 1 would reduce potential impacts to built-environment historic resources associated with transportation projects, these reductions would be largely offset by increased potential effects on previously unidentified archaeological resources resulting from a more dispersed growth pattern and greater potential for greenfield development. As such, overall impacts to cultural resources would remain significant and unavoidable and would be similar to impacts under the proposed 2026 RTP/SCS.

f. Energy

Because this alternative would result in less construction of transportation infrastructure, overall energy use associated with construction activities would be reduced when compared to the proposed 2026 RTP/SCS. However, this alternative would not include many of the capital improvements envisioned under the proposed 2026 RTP/SCS that would improve transportation efficiency and reduce regional energy demand, such as active transportation projects. Energy use will increase over time as the result of regional socioeconomic (population and employment) growth, regardless of implementation of the proposed 2026 RTP/SCS. The No Project Alternative would result in similar total and per capita energy use as compared to the proposed 2026 RTP/SCS. As discussed in Section 4.6, *Energy,* the proposed 2026 RTP/SCS would not result in inefficient, unnecessary, or wasteful direct or indirect consumption of energy, and would be consistent with applicable energy conservation policies. Because the No Project Alternative would be similar in both total and per capita energy use, impacts would be similar when compared to the proposed 2026 RTP/SCS and impacts related to inefficient, unnecessary, or wasteful direct or indirect energy consumption would be less than significant, as they are for the proposed 2026 RTP/SCS.

g. Geology and Soils

Impacts of this alternative related to erosion and loss of topsoil would be less than significant pursuant to compliance with existing regulations, similar to the proposed 2026 RTP/SCS. Because this alternative does not include as many new interchanges, roads and fixed facilities, there would be less exposure of new structures to hazardous geologic conditions, including expansive soils, landslides, ground-shaking, and flooding. Conversely, if inadequate structures are not replaced, the potential for these existing structures and people using these structures to be harmed by geologic hazards could be greater than under the proposed 2026 RTP/SCS. Implementation of this alternative

would involve less ground disturbance associated with transportation improvements than would occur under the proposed 2026 RTP/SCS. However, because more land use development could occur outside of existing urbanized areas due to growth continuing under the existing land use pattern, more development would be expected to occur in previously undeveloped areas. While development under the No Project Alternative would also be required to comply with the California Building Code and requirements set forth by the Alquist Priolo Zone Act, the No Project Alternative would result in a greater area of land being converted from undeveloped to developed uses that could be located in areas with greater susceptibility to seismic related risks. Although the No Project Alternative would involve less ground disturbance and fewer transportation facilities, it would also allow for a greater amount of development to occur in previously undeveloped areas. As such, impacts would be greater than the proposed 2026 RTP/SCS but would remain less than significant due to compliance with existing regulations and building standards.

Impacts to paleontological resources would be greater under this alternative compared to the proposed 2026 RTP/SCS, as more ground disturbing activities would occur within a larger area and in previously undeveloped areas. This increase in potential impacts to paleontological resources would result in significant and unavoidable impacts, and impacts would be greater than the proposed 2026 RTP/SCS.

Overall, impacts to geology and soils would be nominally greater compared to the proposed 2026 RTP/SCS with greater land disturbance but would remain less than significant. Impacts to paleontological resources would also be greater and would be significant and unavoidable.

h. Greenhouse Gas Emissions

The No Project Alternative would result in fewer impacts associated with GHG emissions during construction activities as fewer transportation infrastructure projects would be constructed compared to the proposed 2026 RTP/SCS. However, operation of the No Project Alternative would result in conflicts with applicable GHG reduction plans, policies, and regulations, resulting in a greater impact compared to the proposed project. The No Project Alternative would not include the promotion of sustainable modes of travel, clean vehicle technologies and traffic operational improvements within the StanCOG region that would help improve GHG emissions levels from mobile sources substantially. The overall impact of this alternative would be greater than the proposed project and remain significant and unavoidable.

i. Hazards and Hazardous Materials

Implementation of Alternative 1 would result in fewer transportation projects being constructed than the proposed 2026 RTP/SCS and therefore would reduce the potential for construction-related encounters with hazardous materials, contaminated soils, hazardous building materials, and other site-specific hazardous conditions. Fewer roadway expansion, interchange, and infrastructure projects would also reduce the amount of hazardous materials routinely used during construction activities, such as fuels, lubricants, solvents, and asphalt products. However, Alternative 1 would continue historical growth patterns and provide a greater share of residential development as single-family residences, resulting in more dispersed growth and development outside existing urbanized areas. This development pattern could increase the likelihood of development occurring on sites with previously unidentified contamination, hazardous materials concerns, or naturally occurring asbestos, particularly in undeveloped areas where site conditions have not been extensively investigated. In addition, a more dispersed pattern of development could increase the number of people residing near transportation corridors used for hazardous materials transport or

near existing hazardous materials sites. Nevertheless, all future transportation and land use projects would remain subject to federal, State, and local regulations governing hazardous materials use, storage, transport, remediation, and emergency response. Similar to the proposed 2026 RTP/SCS, impacts related to routine transport, use, and disposal of hazardous materials, hazardous emissions near schools, and airport-related hazards would remain less than significant. However, because future development under Alternative 1 could occur on sites listed pursuant to Government Code Section 65962.5 and because the specific locations of future development are unknown, impacts associated with development on contaminated sites would remain significant and unavoidable. Overall, hazards and hazardous materials impacts under Alternative 1 would be similar to those of the proposed 2026 RTP/SCS, with fewer transportation-related hazards but potentially greater exposure associated with a more dispersed development pattern.

j. Hydrology and Water Quality

Implementation of Alternative 1 would result in fewer transportation improvement projects than the proposed 2026 RTP/SCS and would therefore reduce some short-term water quality impacts associated with construction activities, including grading, excavation, erosion, sedimentation, and pollutant releases from construction equipment. However, Alternative 1 would continue historical development patterns and accommodate a greater share of growth in lower-density areas outside existing urbanized centers. This more dispersed growth pattern would increase development on previously undeveloped lands, resulting in greater expansion of impervious surfaces, increased stormwater runoff, and reduced natural infiltration compared to the infill-focused development anticipated under the proposed 2026 RTP/SCS. Although future projects would remain subject to applicable federal, State, and local water quality regulations and stormwater management requirements, hydrology and water quality impacts associated with runoff and surface water quality would generally be greater under Alternative 1.

Alternative 1 would result in greater groundwater demand and a larger reduction in recharge potential due to a more dispersed development pattern. Given existing groundwater overdraft conditions within the StanCOG region, Alternative 1 would be less supportive of sustainable groundwater management than the proposed 2026 RTP/SCS. While compliance with applicable drainage, floodplain, and groundwater management regulations would continue to reduce impacts, overall hydrology and water quality impacts would be greater under Alternative 1. Impacts related to groundwater supplies and consistency with sustainable groundwater management objectives would remain significant and unavoidable, as they would under the proposed 2026 RTP/SCS.

k. Land Use

As with the 2026 RTP/SCS, this alternative would not be anticipated to divide an established community. As noted in Section 4.12, *Land Use,* the 2026 RTP/SCS includes a list of planned and programmed projects including local and regional capital improvements that have been anticipated or accounted for in local general plans and regional, statewide, and federal transportation improvement programs. In addition, the objective of the 2026 RTP/SCS is to provide for a comprehensive transportation system of facilities and services that meets public need for the movement of people and goods, and that is consistent with the social, economic, and environmental goals and policies of the region. The No Project Alternative would not provide the same number of capital improvements anticipated within applicable general plans and transportation improvement programs, nor would it guide development to explicitly meet social, economic, and environmental goals and policies of the region as anticipated under the 2026

RTP/SCS. Due to the more dispersed land use pattern, the amount of undeveloped land impacted would be greater under this alternative.

Although the No Project Alternative would continue existing land use patterns and trends, it would increase the severity of several environmental impacts, as discussed herein. As such, it could result in conflicts with State and local policies and regulations adopted for the purpose of avoiding or mitigating environmental effects. Because environmental effects would generally increase under this alternative, the overall impacts on land use would be greater under this alternative when compared to the 2026 RTP/SCS but would remain less than significant.

l. Noise

Implementation of Alternative 1 would result in fewer transportation improvement projects than the proposed 2026 RTP/SCS and would therefore reduce some construction-related noise and vibration impacts associated with roadway, transit, and rail infrastructure projects. Fewer roadway expansions, station improvements, and transit investments would decrease the number of locations exposed to temporary construction noise, construction vibration, and long-term transportation-related operational noise. However, Alternative 1 would continue historical growth patterns and accommodate a greater share of development as lower-density, single-family residential growth. This more dispersed development pattern would increase reliance on automobile travel, resulting in greater vehicle miles traveled and associated traffic noise throughout the region compared to the proposed 2026 RTP/SCS, which is designed to reduce travel distances through more compact, transit-oriented development. As a result, noise generated by roadway traffic would likely be greater under Alternative 1.

Alternative 1 would also result in a broader distribution of residential development throughout the region, thereby increasing the likelihood that future noise-sensitive land uses would be located near major roadways, transportation corridors, rail facilities, and airports. While all future development would continue to be subject to applicable federal, State, and local noise regulations and mitigation requirements, the dispersed growth pattern associated with Alternative 1 would be less effective at concentrating development in areas planned for transit-oriented growth and may increase exposure of residents to transportation-related noise. Therefore, although construction-related noise impacts would generally be lower due to fewer transportation projects, long-term traffic noise exposure and land use compatibility issues related to noise would likely be greater under Alternative 1. Similar to the proposed 2026 RTP/SCS, noise impacts associated with construction activities, operational transportation noise, vibration, and airport-related noise exposure would remain significant and unavoidable.

m. Population and Housing

The No Project Alternative would result in the same population increase in the region by 2049 as the proposed 2026 RTP/SCS. As such, impacts related to population growth would be similar to the proposed 2026 RTP/SCS and would remain less than significant. Because fewer transportation projects would be implemented and land uses would be less dense (thus resulting in less demolition and redevelopment of existing housing), displacement-related impacts would be reduced under this alternative when compared to the proposed 2026 RTP/SCS. This impact would be less than significant. Overall, population and housing impacts would be less than the proposed 2026 RTP/SCS as potential displacement impacts would be reduced.

n. Public Services and Recreation

Implementation of this alternative would result in the same population increase in the region by 2049 as the proposed 2026 RTP/SCS. As such, expected demand on public services, recreation, and utilities and service systems would be similar to the proposed 2026 RTP/SCS and may require new or expanded facilities. Overall, impacts related to public services and recreation would be similar as under the proposed 2026 RTP/SCS and would be less than significant.

o. Transportation

Implementation of Alternative 1 would include fewer transportation improvement projects than the proposed 2026 RTP/SCS and would therefore result in fewer roadway, transit, rail, bicycle, and pedestrian infrastructure investments. While Alternative 1 would continue to maintain and improve the existing transportation network, it would provide fewer opportunities to expand multimodal transportation options, improve transit service, increase active transportation connectivity, and enhance regional mobility. In addition, Alternative 1 would continue historical development patterns and accommodate a greater share of future growth in lower-density, single-family residential areas. This dispersed growth pattern would increase trip lengths and reliance on personal vehicles compared to the proposed 2026 RTP/SCS, which promotes infill, mixed-use, and transit-oriented development designed to reduce vehicle travel demand. As a result, Alternative 1 would generate higher overall transportation demand and greater VMT than the proposed 2026 RTP/SCS.

Because Alternative 1 would not achieve the same level of land use and transportation integration as the proposed 2026 RTP/SCS, it would be less effective at reducing VMT and supporting the State's SB 375 objectives for coordinated transportation and land use planning. The increased reliance on automobile travel associated with Alternative 1 would result in greater regional VMT and a higher potential for induced vehicle travel compared to the proposed 2026 RTP/SCS. Although transportation projects and future development under Alternative 1 would continue to be subject to applicable design standards, safety requirements, and emergency access regulations, Alternative 1 would provide fewer multimodal transportation benefits and would be less effective in improving regional transportation system performance. Therefore, transportation impacts related to VMT and consistency with *CEQA Guidelines* Section 15064.3 would be greater under Alternative 1 than under the proposed 2026 RTP/SCS, and significant and unavoidable VMT impacts would remain.

p. Tribal Cultural Resources

Implementation of this alternative would involve less ground disturbance associated with transportation improvements than would occur under the proposed 2026 RTP/SCS. However, because more land use development could occur outside of existing urbanized areas, more ground disturbance would be expected to occur in previously undeveloped or open space areas. As such, the potential to disturb tribal cultural resources, including ancestral remains and sacred sites, would increase under this alternative. Future projects would be required to comply with AB 52, which may require formal tribal consultation. Compliance with this requirement would reduce impacts. However, potential to disturb previously undiscovered tribal cultural resources would remain and impacts would remain significant and unavoidable, similar to the proposed 2026 RTP/SCS. As there would be increased potential to disturb tribal cultural resources from development outside of urbanized areas and no mitigation would be applicable to this alternative, the overall impact of the No Project Alternative would be greater than under the proposed 2026 RTP/SCS.

q. Wildfire

The No Project Alternative would allow more housing near wildlands and would increase the vulnerability of people and structures to wildland fire. Under the No Project Alternative land use development could occur outside of existing urbanized areas and extend into more wildland areas. This impact, which is significant and unavoidable for the proposed 2026 RTP/SCS, would be greater under the No Project Alternative and would remain significant and unavoidable.

6.4 Alternative 2: Mixed Use with Increased Transit Connections

6.4.1 Description

This alternative would concentrate new growth in horizontal mixed-use formats within high quality transit corridors and in transit-oriented communities. The primary objective of the Mixed-Use with Increased Transit Alternative (SCS Scenario B: Mixed-Use with Increased Transit Connections) is to increase residential and employment density, improve the jobs-housing balance, and support non-automobile mode shares. This alternative would involve the highest ratio of multi-family to single-family housing across all scenarios, predominantly in existing and new mixed-use developments. The transit investment program expands the single-corridor 2022 RTP/SCS BRT concept into a multi-corridor BRT network structured around the Modesto Transit Center as the primary hub. This alternative aims to establish a high-quality transit network while implementing the StanCOG Non-Motorized Transportation Plan (Countywide Bicycle and Pedestrian Plan) with an emphasis on first and last-mile connectivity to provide complete non-automobile connections between a wide variety of complementary land uses.

In terms of transportation investment, this alternative prioritizes additional transit projects such as expanding to a multi-corridor BRT network. This scenario would implement generally the same list of transportation projects as the proposed 2026 RTP/SCS but with funding focused on expanding transit first.

6.4.2 Impact Analysis

a. Aesthetics

Alternative 2 would concentrate a greater share of future growth within mixed-use centers, high-quality transit corridors, and transit-oriented communities than the proposed 2026 RTP/SCS. By focusing development in existing urbanized areas and promoting higher-density residential and employment uses, this alternative would reduce pressure for outward expansion into undeveloped areas, agricultural lands, and open space. As a result, Alternative 2 would generally preserve more existing scenic and rural visual character at the urban fringe than the proposed 2026 RTP/SCS. However, the increased concentration of development, taller buildings, and more intensive mixed-use projects within urban centers could result in greater localized changes to community character, visual scale, and urban form. Transit-oriented projects and associated infrastructure could also increase the visibility of urban development in key activity centers and along major transportation corridors.

Because Alternative 2 would implement transit projects as a priority from the same transportation project list as the proposed 2026 RTP/SCS, transportation-related visual impacts associated with

roadway, interchange, and other planned transportation improvements would be similar. However, the greater emphasis on transit-oriented development, mixed-use projects, and multimodal infrastructure would likely result in a more urbanized visual environment within designated growth areas, transit corridors, and mixed-use centers. While this change would represent a greater alteration of existing urban character in some locations, it would also reduce the need for development in undeveloped and agricultural areas and could support more cohesive and pedestrian-oriented community design. Overall, Alternative 2 would result in greater visual change within existing urban centers but fewer aesthetic impacts on open space, agricultural lands, and rural landscapes compared to the proposed 2026 RTP/SCS. Although localized urban visual change may increase, the regional aesthetic impact would be reduced as development would be less likely to occur in undeveloped areas, rural, or agricultural areas. Consequently, aesthetics impacts would be reduced compared to impacts of the proposed 2026 RTP/SCS.

b. Agriculture and Forestry Resources

Alternative 2 would concentrate a greater share of future residential and employment growth within existing urbanized areas, mixed-use centers, high-quality transit corridors, and transit-oriented communities. Compared to the proposed 2026 RTP/SCS, this alternative would accommodate growth at higher densities and with a greater proportion of multi-family housing, reducing the need to expand development into agricultural and rural areas. Because development would be more focused within existing communities and along established transportation corridors, Alternative 2 would result in less conversion of Prime Farmland, Unique Farmland, Farmland of Statewide Importance, and lands under agricultural production. As a result, direct impacts on agricultural land resources would be less than those associated with the proposed 2026 RTP/SCS.

Alternative 2 would implement transit projects as a priority from the same transportation project list as the proposed 2026 RTP/SCS; therefore, transportation-related impacts on agricultural lands would be reduced as the enhanced BRT network would further support infill and redevelopment opportunities and reduce pressure for outward expansion into agricultural and rural areas. The higher-density development pattern and stronger emphasis on transit-oriented growth would reduce the amount of land required to accommodate projected population and employment growth, resulting in a more efficient use of urban land and less demand for future conversion of agricultural resources. While some agricultural land conversion could still occur as a result of transportation improvements and localized development, Alternative 2 would direct a larger share of growth into existing developed areas thereby reducing potential impacts to agricultural lands. Accordingly, impacts related to farmland conversion, conflicts with agricultural land preservation policies, and indirect pressures on agricultural operations would be less than those associated with the proposed 2026 RTP/SCS.

c. Air Quality

Alternative 2 would concentrate future residential and employment growth within mixed-use centers, high-quality transit corridors, and transit-oriented communities while implementing the same transportation project list as the proposed 2026 RTP/SCS with an emphasis on increased transit projects. The alternative's emphasis on higher-density development, improved jobs-housing balance, an expanded BRT network, and enhanced bicycle and pedestrian connectivity would encourage greater use of transit and active transportation while reducing reliance on single-occupant vehicles. As a result, Alternative 2 would generate lower VMT per capita and lower mobile-source emissions of ozone precursors, particulate matter, and toxic air contaminants than

the proposed 2026 RTP/SCS, supporting regional air quality objectives and State policies aimed at reducing transportation-related emissions.

Because Alternative 2 includes transit projects as a priority from the same transportation project list as the proposed 2026 RTP/SCS, transportation-related, construction-related air quality impacts from roadway, transit, rail, and active transportation projects would be generally similar and would continue to generate temporary emissions of particulate matter, ozone precursors, and diesel exhaust. However, Alternative 2's more compact land use pattern and expanded transit network would result in lower long-term operational emissions and reduced exposure to transportation-related pollutants compared to the proposed 2026 RTP/SCS. While some sensitive receptors could still be exposed to elevated pollutant concentrations near major transportation corridors and significant and unavoidable construction and operational air quality impacts could remain, Alternative 2 would result in reduced air quality impacts than the proposed 2026 RTP/SCS.

d. Biological Resources

This alternative would further emphasize an infill approach to land use and housing. As with the proposed 2026 RTP/SCS, development would primarily occur in already urbanized areas and would not result in development of areas that provide habitat for special status plant and animal species. Overall impacts to special status plants, animals, wetlands and/or riparian habitat and wildlife movement outside developed urban areas would therefore be reduced when compared the proposed 2026 RTP/SCS. However, impacts would remain significant and unavoidable.

e. Cultural Resources

As described in Section 4.5, *Cultural Resources*, transportation projects and land use development implemented under the proposed 2026 RTP/SCS have the potential to affect built-environment historical resources, including buildings, structures, bridges, and other resources that may be eligible for listing in the National Register of Historic Places, California Register of Historical Resources, or local historic registers. Under this alternative, all of the projects that would include repair or replacement of potentially historic resources would still occur. Impacts to historical resources would therefore be similar compared to the proposed 2026 RTP/SCS. Land use development impacts under this alternative could be greater as there is greater potential to redevelop and demolish historic structures in urbanized areas.

Land use development would be at a denser rate requiring less ground disturbance activities than under the proposed 2026 RTP/SCS. As such, the potential for uncovering known or unknown archaeological resources as a result of land use development would be reduced under this alternative. Although overall archaeological resources impacts would be reduced, the potential would remain for unearthing known or previously unidentified resources. As such, impacts would be similar to the proposed 2026 RTP/SCS and impacts would remain significant and unavoidable.

On balance, impacts to cultural resources under Alternative 2 would be similar to those of the proposed 2026 RTP/SCS. While Alternative 2 would reduce potential impacts to archaeological resources associated with decreased ground disturbance activities for transportation projects, these reductions would be largely offset by increased potential impacts on built-environment historic resources, resulting in increased potential to redevelop and demolish historic structures in urbanized areas. As such, overall impacts to cultural resources would remain significant and unavoidable and would be similar to impacts under the proposed 2026 RTP/SCS.

f. Energy

Energy use will increase over time as the result of regional socioeconomic (population and employment) growth, regardless of implementation of the proposed 2026 RTP/SCS. As discussed in Section 4.6, *Energy,* the proposed 2026 RTP/SCS would not result in inefficient, unnecessary, or wasteful direct or indirect consumption of energy, and would be consistent with applicable energy conservation policies. Because this alternative would reduce vehicular travel as shown through reduced VMT, energy use would be reduced. Impacts related to inefficient, unnecessary, or wasteful direct or indirect energy consumption would be reduced when compared to the proposed 2026 RTP/SCS and would similarly remain less than significant.

g. Geology and Soils

Alternative 2 would concentrate future residential and employment growth within mixed-use centers, high-quality transit corridors, and transit-oriented communities while implementing the same transportation project list as the proposed 2026 RTP/SCS. By accommodating a greater share of growth through higher-density, multi-family, and mixed-use development within existing urbanized areas, Alternative 2 would reduce the overall amount of land disturbance required to accommodate projected growth. As a result, impacts associated with soil disturbance, erosion, grading, and the conversion of previously undisturbed land would likely be less than those associated with the proposed 2026 RTP/SCS. Infill and redevelopment projects would generally occur in areas that have already been altered by previous development and are more likely to be served by existing infrastructure, thereby reducing the potential for widespread geologic and soil impacts. However, localized impacts related to soil stability, erosion, expansive soils, and seismic hazards could still occur depending on site-specific conditions.

Because Alternative 2 includes the same transportation improvement projects as the proposed 2026 RTP/SCS, geology and soils impacts associated with transportation infrastructure construction would be similar to the proposed 2026 RTP/SCS. Construction of roadway, transit, rail, and active transportation facilities would still require grading, excavation, and soil disturbance and could expose projects to seismic, geotechnical, and erosion-related hazards. Nevertheless, the more compact development pattern associated with Alternative 2 would likely reduce the extent of growth-related soil disturbance and land conversion compared to the proposed 2026 RTP/SCS. Compliance with applicable geotechnical investigations, building codes, erosion-control measures, and site-specific engineering requirements would continue to minimize geologic and soils hazards.

Impacts to paleontological resources would be reduced under this alternative compared to the proposed 2026 RTP/SCS, as infill and redevelopment projects would generally occur in areas that have already been altered by previous development and less ground disturbing activities would occur. Nevertheless, potential impacts to previously undiscovered paleontological resources would remain and impacts would be significant and unavoidable though reduced compared to the proposed 2026 RTP/SCS.

Overall, Alternative 2 would result in geology and soils impacts that are nominally reduced compared to the proposed 2026 RTP/SCS due to its greater emphasis on infill and transit-oriented development.

h. Greenhouse Gas Emissions

Alternative 2 would result in fewer impacts associated with GHG emissions during construction activities for transit projects as the scale of construction would be smaller. Additionally, operational

GHG impacts would likely decrease because the increased housing density envisioned by this alternative would reduce the need for a personal vehicle and subsequently reduce daily VMT by 24,266 compared to the project. This compact development would also increase the effectiveness of public transit and multimodal transportation networks, which could further reduce GHG emissions beyond the proposed 2026 RTP/SCS.

Because Alternative 2 was modeled to reduce daily VMT by 1.3 percent compared to the proposed 2026 RTP/SCS, GHG impacts would be reduced; however, impacts would remain significant and unavoidable, as they are for the proposed 2026 RTP/SCS.

i. Hazards and Hazardous Materials

Alternative 2 would concentrate future residential and employment growth within mixed-use centers, high-quality transit corridors, and transit-oriented communities while implementing the same transportation project list as the proposed 2026 RTP/SCS. By directing a greater proportion of growth to existing urbanized areas and redevelopment locations, Alternative 2 would likely reduce the need for development on previously undeveloped lands where unknown hazardous materials, abandoned agricultural chemical storage areas, or other contamination sources may be encountered. Infill and redevelopment projects, however, may occur on sites with a history of commercial, industrial, transportation, or other urban uses that could contain hazardous materials requiring investigation and remediation prior to development. As a result, localized hazards related to hazardous materials exposure, contaminated soils, and groundwater contamination could still occur, although the overall footprint of new development would be smaller and more concentrated than under the proposed 2026 RTP/SCS.

Because Alternative 2 includes transit projects as a priority from the same transportation project list as the proposed 2026 RTP/SCS, transportation-related impacts to hazards and hazardous materials impacts associated with transportation construction and operation would be generally similar. Construction activities could involve the use, transport, storage, and disposal of hazardous materials and could encounter contaminated soils or groundwater in developed areas. The expanded transit projects, including the BRT network and associated transit supportive infrastructure, could also require construction in existing urban settings where hazardous materials contamination is more likely to be present. The concentration of development near major transportation corridors would increase the number of people located near facilities that transport hazardous materials, although this would largely occur within existing urban environments already influenced by such activities. Compliance with applicable federal, State, and local hazardous materials regulations, site assessment requirements, and remediation standards would continue to reduce risks associated with hazardous materials exposure. Overall, Alternative 2 would result in reduced hazards and hazardous materials impacts compared to the proposed 2026 RTP/SCS because its more compact development pattern would reduce the extent of growth-related land disturbance and expansion into previously undeveloped areas.

j. Hydrology and Water Quality

Alternative 2 would concentrate future residential and employment growth within mixed-use centers, high-quality transit corridors, and transit-oriented communities while implementing the same transportation project list as the proposed 2026 RTP/SCS with an emphasis on increased transit projects. By accommodating a greater share of growth through higher-density, multi-family, and mixed-use development within existing urbanized areas, Alternative 2 would reduce the overall amount of undeveloped land converted to urban uses and decrease the extent of new impervious

surfaces required to accommodate regional growth. As a result, Alternative 2 would result in fewer impacts related to alterations of drainage patterns, increases in stormwater runoff, erosion, sedimentation, and degradation of surface water quality than the proposed 2026 RTP/SCS. Concentrating development in areas already served by existing drainage, stormwater, and wastewater infrastructure would also reduce the need for expansion of infrastructure into previously undeveloped areas.

Because Alternative 2 includes transit projects as a priority from the same transportation project list as the proposed 2026 RTP/SCS, transportation-related, hydrology and water quality impacts associated with transportation and transit infrastructure construction and operation would be generally similar. Construction activities would continue to have the potential to generate temporary erosion, sedimentation, pollutant runoff, and other water quality impacts, while operational impacts could include increased stormwater runoff from transportation facilities. However, the more compact development pattern associated with Alternative 2 would reduce the extent of growth-related land disturbance and may lessen long-term effects on watershed functions, groundwater recharge areas, and water quality. Compliance with applicable stormwater permits, low-impact development requirements, erosion control measures, and water quality regulations would continue to reduce impacts. Alternative 2 would also be expected to require less overall water demand to serve dispersed growth patterns, thereby reducing pressure on groundwater resources and supporting sustainable groundwater management objectives. Nevertheless, given the existing overdraft conditions affecting groundwater basins within the StanCOG region, significant impacts related to groundwater supply and consistency with groundwater sustainability plans could still occur, although to a lesser extent than under the proposed 2026 RTP/SCS. Overall, Alternative 2 would result in reduced hydrology and water quality impacts compared to the proposed 2026 RTP/SCS.

k. Land Use

Alternative 2 would concentrate future residential and employment growth within mixed-use centers, high-quality transit corridors, and transit-oriented communities while implementing transit projects as a priority from the same transportation project list as the proposed 2026 RTP/SCS. Compared to the proposed 2026 RTP/SCS, Alternative 2 would place a greater emphasis on higher-density residential development, mixed-use land use patterns, and a stronger jobs-housing balance. By directing a larger share of future growth into existing urbanized areas and activity centers, Alternative 2 would further support the goals of SB 375, encourage compact development patterns, and reduce pressure for outward expansion into agricultural and open-space lands. The expanded BRT network and emphasis on first- and last-mile connectivity would reinforce development within established communities and along existing transportation corridors, improving the integration of land use and transportation planning.

Because Alternative 2 focuses a greater share of development within existing urban areas, it would be less likely than the proposed 2026 RTP/SCS to contribute to land use conflicts associated with peripheral growth and expansion into undeveloped areas. Similar to the proposed 2026 RTP/SCS, Alternative 2 would not physically divide established communities because development and transportation investments would primarily occur within or adjacent to existing urbanized areas and would be intended to improve regional connectivity and mobility. Consistency issues could still occur where higher-density, mixed-use development is introduced near existing lower-density neighborhoods; however, such issues would remain subject to local planning, zoning, and project-

level review. Overall, Alternative 2 would result in land use and planning impacts that are reduced compared to the proposed 2026 RTP/SCS.

l. Noise

Alternative 2 would concentrate future residential and employment growth within mixed-use centers, high-quality transit corridors, and transit-oriented communities while implementing transit projects as a priority from the same transportation project list as the proposed 2026 RTP/SCS. Because this alternative generally includes the same transportation improvements, construction-related noise and vibration impacts associated with roadway, transit, rail, bicycle, and pedestrian projects would be similar to those identified for the proposed 2026 RTP/SCS. Construction activities would continue to generate temporary increases in noise and vibration from heavy equipment, grading, paving, and other construction activities, and significant construction-related noise and vibration impacts could still occur. In addition, the expanded multi-corridor BRT network and increased transit service could result in localized increases in operational noise near transit facilities, stations, and major transit corridors.

Alternative 2's emphasis on compact, mixed-use development, improved jobs-housing balance, and increased transit, bicycle, and pedestrian travel would likely reduce automobile dependence and vehicle miles traveled compared to the proposed 2026 RTP/SCS. This reduction in automobile travel could lessen roadway traffic noise in some areas. However, because Alternative 2 would direct a greater share of growth into transit-oriented and mixed-use activity centers located near major transportation corridors, a larger number of residents and workers could be exposed to existing roadway, rail, and transit-related noise sources. While compliance with applicable noise standards, building insulation requirements, airport land use compatibility plans, and project-level mitigation measures would continue to reduce impacts, noise exposure for sensitive receptors could remain significant in certain locations. Overall, Alternative 2 would result in noise impacts that are similar to those of the proposed 2026 RTP/SCS.

m. Population and Housing

Alternative 2 would result in the same population increase in the region by 2049 as the proposed 2026 RTP/SCS. As such, impacts related to population growth would be to similar to the proposed 2026 RTP/SCS and would continue to be less than significant. Temporary displacement as a result of more infill projects could occur; however, this displacement would be offset by an increase in housing units. Compliance with regulations under the Federal Uniform Relocation and Real Property Acquisition Policies Act would further reduce impacts to less than significant, as under the proposed 2026 RTP/SCS. Overall population and housing impacts would be similar to the proposed 2026 RTP/SCS.

n. Public Services and Recreation

Implementation of this alternative would result in the same population increase in the region by 2049 as the proposed 2026 RTP/SCS. As such, expected demand on public services, recreation, and utilities and service systems would be similar to the proposed 2026 RTP/SCS and may require new or expanded facilities. Overall, impacts related to public services and recreation would be similar as under the proposed 2026 RTP/SCS and would be less than significant.

o. Transportation

Alternative 2 would concentrate future residential and employment growth within mixed-use centers, high-quality transit corridors, and transit-oriented communities while implementing transit projects as a priority from the same transportation project list as the proposed 2026 RTP/SCS. In addition to the planned roadway, rail, transit, bicycle, and pedestrian improvements included in the proposed 2026 RTP/SCS, Alternative 2 would place greater emphasis on higher-density development, an improved jobs-housing balance, an BRT network, and enhanced non-motorized connectivity. By locating future growth within existing urbanized areas and near transit services, Alternative 2 would encourage greater use of transit, walking, and bicycling and reduce reliance on single-occupant vehicle travel. As such, Alternative 2 would generate lower VMT than the proposed 2026 RTP/SCS, thereby better supporting State and regional objectives related to transportation efficiency, multimodal mobility, climate goals, and SB 375 implementation.

Because Alternative 2 would include transit projects as a priority from the same transportation project list as the proposed 2026 RTP/SCS, impacts related to construction, roadway operations, safety, circulation, emergency access, and project-level transportation infrastructure would generally be similar. However, the alternative's more compact land use pattern and expanded transit network would likely reduce future automobile travel demand and lessen the extent of induced vehicle travel compared to the proposed 2026 RTP/SCS. Alternative 2 would also improve access to jobs, services, and housing through shorter trip lengths and increased travel options, further reducing dependence on the regional roadway network. Although regional growth would still result in increases in overall travel demand and transportation-related impacts could remain significant, Alternative 2 would likely result in lower VMT and reduced induced travel compared to the proposed 2026 RTP/SCS. Consequently, Alternative 2 would generally result in reduced transportation impacts compared to the 2026 RTP/SCS.

p. Tribal Cultural Resources

Under this alternative, land use development would occur in infill areas to a greater extent than the proposed 2026 RTP/SCS. Higher density development within already urbanized areas would reduce ground disturbance, as less disturbance would occur outside these areas. As such, the potential to disturb tribal cultural resources, including ancestral remains and sacred sites, would decrease under this alternative. Future projects would still be required to comply with AB 52, which would encourage tribal consultation with local California Native American tribes and require the identification of project specific substantial adverse effects on tribal cultural resources and appropriate project specific mitigation measures. If it is determined that a specific project would result a substantial adverse change in the significance of a tribal cultural resource, the impact would be significant and unavoidable. This significant impact would occur for projects under Alternative 2, as it would for the proposed 2026 RTP/SCS. Therefore, impacts would be significant and unavoidable, as they would be for the proposed 2026 RTP/SCS but would be reduced compared to the proposed 2026 RTP/SCS due to the reduced level of ground disturbance outside of urban areas.

q. Wildfire

Alternative 2 would concentrate future residential and employment growth within mixed-use centers, high-quality transit corridors, and transit-oriented communities while implementing transit projects as a priority from the same transportation project list as the proposed 2026 RTP/SCS. By directing a greater proportion of growth into existing urbanized areas, Alternative 2 would reduce pressure for development in outlying locations, including areas near State Responsibility Areas, Very

High Fire Hazard Severity Zones, and wildland-urban interface areas. As a result, Alternative 2 would likely reduce the number of people, structures, and infrastructure exposed to wildfire hazards compared to the proposed 2026 RTP/SCS. The more compact development pattern would also reduce the need for expansion of roads, utilities, and other infrastructure into wildfire-prone areas, thereby lowering the potential for human-caused ignitions, emergency access challenges, and wildfire-related risks associated with new development.

Because Alternative 2 includes transit projects as a priority from the same transportation project list as the proposed 2026 RTP/SCS, wildfire impacts associated with transportation infrastructure construction and operation would be generally similar. Construction activities would continue to have the potential to ignite wildfires through the use of heavy equipment, vehicles, and other ignition sources, particularly for projects located near State Responsibility Areas or high-hazard areas. In addition, some transportation facilities would remain exposed to wildfire, post-fire flooding, erosion, and slope instability hazards. However, by concentrating a greater share of projected growth within existing developed areas rather than in peripheral or wildland-adjacent locations, Alternative 2 would likely reduce overall exposure to wildfire hazards and decrease the potential need for future development and infrastructure expansion in fire-prone areas. Although significant and unavoidable wildfire risks could still occur due to the increasing frequency and severity of wildfires associated with climate change and existing regional fire hazards, Alternative 2 would have reduced wildfire-related impacts than the proposed 2026 RTP/SCS.

6.5 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6 requires that an EIR identify the environmentally superior alternative among the alternatives analyzed. Section 15126.6(d)(2) states that if the No Project Alternative is identified as the environmentally superior alternative, the EIR shall also identify an environmentally superior alternative from among the other alternatives analyzed. This section compares the impacts of the two alternatives under consideration to those of the proposed 2026 RTP/SCS in compliance with the *CEQA Guidelines*.

Table 6-1 shows whether each alternative would have impacts that are less than, similar to, or greater than the proposed 2026 RTP/SCS for each of the issue areas studied.

Based on the above analysis and summary in Table 6-1, Alternative 2 is the environmentally superior alternative, assuming all environmental issue areas are weighted equally. Under Alternative 2, land use patterns would be concentrated in infill areas and transit-oriented communities. Alternative 2 would result in a higher density development pattern than the proposed 2026 RTP/SCS. This results in Alternative 2 reducing VMT to a greater extent than the proposed project with a 1.3 percent greater reduction in VMT compared to the project. This VMT reduction would also result in less generation of criteria pollutants and GHG emissions compared to the project. Alternative 2 could be considered environmentally superior to the proposed 2026 RTP/SCS primarily because, as shown in Table 6-1, overall impacts to the following resources would be less: aesthetics, agriculture resources, air quality, biological resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use, transportation (VMT), tribal cultural resources, and wildfire. Overall impacts to the following resources would be similar: cultural resources, noise, population and housing, and public services and recreation.

The No Project Alternative (Alternative 1) would result in a less dense development pattern compared to the proposed 2026 RTP/SCS, as it would continue existing land use trends. Because of the increased land development outside of existing urbanized areas, Alternative 1 would result in

more ground disturbance than the proposed 2026 RTP/SCS. Consequently, compared to the proposed 2026 RTP/SCS, Alternative 1 would have greater overall impacts to agricultural resources, air quality, biological resources, geology and soils, greenhouse gas emissions, hydrology and water quality, land use, transportation, tribal cultural resources, and wildfire. Overall impacts to cultural resources would be similar. As shown in Table 6-1, Alternative 1 would result in greater impacts in most issue areas compared to the proposed 2026 RTP/SCS. It would also fail to meet most of the basic project objectives, including promoting equitable access opportunities, providing a mix of land uses and compact development patterns and encourage infill development to preserve agricultural land and natural resources, and maintaining or reducing congestion as compared to current levels.

Table 6-1 Impact Comparison of Alternatives

Issue Area	Proposed 2026 RTP/SCS	Alternative 1: No Project	Alternative 2: Mixed-Use with Increased Transit
Aesthetics	SU	=	-
Agriculture and Forestry	SU	+	-
Air Quality	SU	+	-
Biological Resources	SU	+	-
Cultural Resources	SU	=	=
Energy	LTS	=	-
Geology and Soils	SU	+	-
Greenhouse Gas Emissions and Climate Change	SU	+	-
Hazards and Hazardous Materials	SU	=	-
Hydrology and Water Quality	SU	+	-
Land Use and Planning	LTS	+	-
Noise	SU	+	=
Population and Housing	LTS	-	=
Public Services and Recreation	LTS	=	=
Transportation	SU	+	-
Tribal Cultural Resources	SU	+	-
Wildfire	SU	+	-
Totals		**11 +** **5 =** **1 -**	**0+** **4 =** **11 -**

Notes:
+ indicates a greater impact
= indicates a similar impact
- indicates a reduced impact

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