MCAG MERCED COUNTY ASSOCIATION OF GOVERNMENTS

2026 MCAG RTP/SCS

Draft Program Environmental Impact Report

Safe Roadways | Reliable Transit | Active Transportation | Environmental Stewardship | Sustainable Communities



June 2026

Draft Program EIR

2026 MCAG RTP/SCS

Draft Program Environmental Impact Report

The Merced County Association of Governments (MCAG) has prepared a Draft Program Environmental Impact Report (PEIR) for the 2026 Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS). The Draft PEIR evaluates the environmental effects of the RTP/SCS and identifies measures to avoid or reduce significant impacts.



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1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that a Draft Environmental Impact Report (EIR) be prepared and distributed for review by regulatory and other affected agencies and persons, prior to preparation of the Final EIR. The Draft EIR provides an opportunity to comment on the proposed project and the Draft EIR. Once comments are received after the review period, they will be considered, and responses will be incorporated into the Final EIR to address any necessary changes or additions that clarify and/or supplement the information in the document. This Draft EIR, therefore, represents the culmination of all environmentally related issues raised during review of the Notice of Preparation (NOP) (reference Appendix A) and during development of the Merced County Association of Governments (MCAG) 2026 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS – incorporated by reference and can be found at the following link:

Regional Transportation Plan | Merced County Association of Governments, CA

The EIR prepared for the 2026 RTP/SCS is a "Program" EIR (PEIR). In accordance with Section 15168(a) of the CEQA Guidelines: "A PEIR 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."

For purposes of reviewing the environmental impacts associated with the MCAG 2026 RTP/SCS, this Draft PEIR has been prepared because MCAG cannot know all the details or have all the information it would need regarding each and every transportation improvement project identified in the RTP, or the detailed information regarding the specific type of future land use development that will occur in each local jurisdiction between 2023 (base year), 2026 current year, and the year 2049 (horizon year). MCAG's role as the Regional Transportation Planning Agency (RTPA) for the Merced region is to prepare a long-range RTP/SCS that reflects consistency with federal and state mandates, including Senate Bill (SB) 375. As an RTPA, MCAG does not have any land use authority. This right is held by the local agencies that comprise the membership of the MCAG Policy Board, including the County of Merced and the six (6) incorporated cities within the County, commonly referred to as MCAG's "member agencies".

MCAG works in partnership with its member agencies, Caltrans, and other agencies with land use authority to plan the future transportation system, taking into account future growth estimates and potential development and land-use patterns outlined in each adopted or draft general plan prepared by these agencies. Throughout this document, the term "implementing agency" refers to MCAG's partner agencies that have land use authority and/or legal standing to plan, design, implement, build, operate, and maintain transportation infrastructure, including projects referenced in the RTP/SCS. The agencies most associated with implementing transportation improvement projects and approving future land-use developments, as reflected in the 2026 RTP/SCS, will be the MCAG member agencies. Caltrans, as the owner/operator of the state highway system, will also have a major role in implementing transportation improvement projects along highways throughout the Merced region. It will be these and other implementing agencies that plan, approve, design, construct, and implement the transportation improvement projects referenced in the RTP/SCS. These agencies will also plan for, review, and approve land-use developments proposed within their jurisdictions over the planning period that were considered in the development of the RTP/SCS.

This Draft PEIR is considered the "first tier" CEQA document for future second-tier CEQA documents (commonly referred to as project-level analyses) and reflects the various transportation improvement and future land use development projects represented in the 2026 RTP/SCS. The SCS presents one scenario for how future growth and development could be allocated to planned growth areas, consistent with the general plans of the cities and the County of Merced, as well as the planned transportation system. As growth and development occur, it will be the cities and the County that review and approve development proposals and determine consistency with their plans, programs, and policies - not MCAG.

This Draft PEIR presents a "regional" review and analysis of impacts associated with the 2022 RTP/SCS. While some transportation improvement projects are reflected in current federal and regional transportation improvement programs in the short term, most projects are not defined at a level that would allow for "project-level" analysis within the next four to five years. As such, it is understood that the RTP transportation improvement projects and future land use development projects will be implemented by implementing agencies such as Caltrans, each of the six cities, the County of Merced, transit agencies, and other agencies responsible for the construction and/or operation of transportation facilities, land use development, and other services.

Implementing agencies will prepare the "project-level" environmental documents for the individual transportation improvement projects and future land use developments included in or consistent with the 2026 RTP/SCS. According to Section 15161 of the CEQA Guidelines, a "project-level" environmental document is the most common type of EIR and examines the environmental impacts of a specific improvement project or development project. This type of EIR should focus primarily on environmental

changes resulting from the project and examine all phases of the project, including planning, construction, and operation.

The implementing agencies would also prepare "project-level" environmental documents that incorporate by reference the appropriate information from this Draft PEIR regarding secondary effects, cumulative impacts, project alternatives, and other relevant factors. Where subsequent environmental review is required, such review would focus on project-specific significant effects related to the project or its site that have not been considered in this Draft PEIR.

MCAG does not have the legal authority to force implementing agencies to adopt and implement most of the mitigation measures listed in Chapters 3 and 5 of this PEIR. MCAG cannot guarantee that local agencies will comply with the mitigation measures, but will encourage local agencies, transit agencies, Caltrans, and other affected and responsible agencies to design and construct transportation improvement projects and future land use developments included in the RTP/SCS. MCAG has specific responsibilities as stated in the MCAG Joint Powers Agreement (JPA), originally approved in November 1967, and its authority is limited. The JPA specifically states that: "The Merced County Association of Governments was created to establish a single and separate entity pursuant to Government Code 6503.5, whereby its member parties, which are public agencies within the meaning of Government Code section 6500, have in common the legal power to study, discuss, and develop solutions to area-wide problems of direct concern to the performance of their constitutional and statutory functions and to establish an area planning organization and expend public funds for these purposes. Further, Merced County Association of Governments is to perform all acts necessary to participate in state and federal programs and receive state and federal funds for health, education, welfare, public works, transportation, and community improvement activities, including contracting and cooperating with other agencies."

1.2 FORMAT AND SCOPE

The purpose of this Draft PEIR is to provide local decision-makers and the public with an objective analysis of the potential environmental consequences of implementation of the regional transportation system outlined in the Draft MCAG 2026 RTP/SCS. The information presented in this document is intended to provide a full disclosure of the potential impacts and to increase public awareness and participation in the regional transportation planning process. The 2026 RTP is the fourth to include an SCS, which is intended to demonstrate how integrated land use and transportation planning can reduce greenhouse gas (GHG) emissions from autos and light trucks.

The SCS encourages changes to the urban form that improve transit accessibility and create more compact development, thereby yielding a number of transportation and air quality benefits for the region. These

include reductions in travel time, vehicle miles traveled (VMT), vehicle hours traveled (VHT), vehicle hours of delay, and transportation-related air quality emissions. Concurrently, the plan increases transit use and other modes of transportation, such as walking and biking, all of which can improve mobility and air quality. The SCS only shows how future growth and development could be allocated to planned growth areas consistent with the general plans of the cities and the County of Merced. As growth and development occur, it will be the cities and the County that review and approve development proposals and determine consistency with their plans, programs, and policies through the appropriate environmental process, not MCAG. MCAG has no land-use authority to approve future growth and development as it occurs over the life of the RTP/SCS (through Year 2049).

CEQA requires that a Draft EIR be prepared and distributed for review by regulatory and other affected agencies and persons, prior to preparation of the Final EIR. The Draft EIR provides an opportunity to comment on the proposed project and the Draft EIR. Once comments are received after the review period, they will be considered, and responses will be incorporated into the Final EIR to address any necessary changes or additions that clarify and/or supplement the information in the document. This Draft EIR, therefore, represents the culmination of all environmental issues raised during the review of the NOP (see Appendix A) and the development of the MCAG 2026 RTP.

This document has been prepared to address written comments received from interested individuals and agencies regarding the NOP for the RTP and to comply with CEQA requirements. This PEIR requires a 45-day public review period, which will begin on June 16, 2026, and will end on July 31, 2026. The RTP RTP/SCS has a longer public review period (the SCS requires a 55-day public review period), which will begin on June 5, 2026, and also end on July 31, 2026.

1.3 PROJECT DESCRIPTION

The Project, as defined by CEQA Statutes, Section 21065, is the preparation of the 2026 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). This document may also be known or referenced as the 2026 RTP, RTP, or RTP/SCS. MCAG has prepared the RTP/SCS as required by Section 65080 et seq. of Chapter 2.5 of the California Government Code, as well as federal guidelines pursuant to the requirements of the Infrastructure Investment and Jobs Act, the 2021 Bipartisan Infrastructure Law (BIL), Moving Ahead for Progress in the 21st Century Act (MAP-21), and the Fixing America's Surface Transportation (FAST) Act. These acts require that RTPs include only those projects that can actually be delivered with funds expected to be available (i.e., financially constrained) and that those projects will help attain and maintain air quality standards consistent with the Clean Air Act Amendments of 1991 and other federal mandates noted below. The RTP must also meet Transportation Conformity for the Air Quality Attainment Plan, per 40 CFR Parts 51 and 93. The conformity regulation applies nationwide to "all

nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan" (40 CFR 93.102). In addition, the RTP must address requirements set forth in Assembly Bill 32, the California Global Warming Solutions Act of 2006. The California Transportation Commission (CTC) has prepared guidelines (adopted by the Commission on January 18, 2017) to assist in the preparation of RTPs pursuant to Section 14522 of the Government Code.

On May 17, 2026, the House of Representatives introduced the Building Unrivaled Infrastructure and Long-term Development for America's 250th (BUILD America 250) Act (H.R. 8870). The bipartisan legislation would reauthorize federal surface transportation programs from Fiscal Year (FY) 2027 to FY 2031 and succeed the Infrastructure Investment and Jobs Act (P.L. 117-58), which is set to expire on September 30, 2026.

According to CTC RTP Guidelines, "Every Metropolitan Planning Organization (MPO) is required by law to conduct long-range planning to ensure that the region's vision and goals are clearly identified and to ensure effective decision-making in furtherance of the vision and goals. The long-range plan, known as the Regional Transportation Plan (RTP), is an important policy document that is based on the unique needs and characteristics of a region, helps shape the region's economy, environment, and social future, and communicates the region's vision to the state and federal governments. As fundamental building blocks of the State's transportation system, the RTP should also support state goals for transportation, environmental quality, economic growth, and social equity (California Government Code Section 65041.1). The California Transportation Commission (Commission or CTC) is authorized to develop guidelines by Government Code Section 14522, which reads: In cooperation with the regional transportation planning agencies, the commission may prescribe study areas for analysis and evaluation by such agencies and guidelines for the preparation of the regional transportation plans."

Currently, the San Joaquin Valley (or portions thereof) is designated as nonattainment with respect to Federal air quality standards for ozone, and particulate matter under 2.5 microns in diameter ($PM_{2.5}$); and has a maintenance plan for particulate matter under 10 microns in diameter (PM_{10}). The areas of Kern, Fresno, Stanislaus, and San Joaquin Counties have attained the CO standard and maintained attainment for 20 years, thus conformity requirements for CO no longer apply.

In addition, the RTP must address requirements set forth in Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, and SB 375, which introduced the Sustainable Communities Strategy concept into the RTP process. Finally, the California Transportation Commission has prepared guidelines (most recently adopted by the Commission in 2017 to assist in the preparation of RTPs pursuant to Section 14522 of the Government Code.

As the designated RTPA, MCAG is mandated by state and federal law to update the RTP every four (4) years. The last comprehensive EIR on the RTP/SCS was certified in 2022. The 2026 RTP/SCS addresses transportation improvement projects, programs, and funding reflected in the 2026 RTP, along with additional funding from the proposed (now approved) ½-cent Sales Tax Measure (Measure V). Measure V received the 2/3 voter approval required to pass in the November 2016 election. The 2026 revision to the RTP has been prepared to address potential environmental impacts from its implementation and to identify available funding sources for programming.

The RTP guides the development of the Regional Transportation Improvement Program (RTIP). MCAG prepares and maintains the Federal Transportation Improvement Program (FTIP). The program includes a list of all transportation-related projects that require federal funding or other approvals from federal transportation agencies. The FTIP also lists non-federal, regionally significant projects for information and air quality modeling purposes. Projects included in the FTIP are consistent with the RTP and part of the area's overall strategy to provide mobility, congestion relief, and reduced transportation-related air pollution in support of efforts to attain federal air quality standards for the region.

The RTIP is the programming document used to plan the construction of regional transportation projects and requires approval by the California Transportation Commission (CTC) as part of the State Transportation Improvement Program (STIP). The STIP comprises two funding components: the Regional Improvement Program (RIP) share for projects nominated by regional agencies in California, such as MCAG, and the Interregional Improvement Program (IIP) share for projects nominated by Caltrans. The STIP is adopted by the California Transportation Commission (CTC).

The RTP is also used as a transportation planning document by each of the seven (7) member jurisdictions of MCAG. The members include the County of Merced and the cities of Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced. The RTP identifies the region's transportation needs and issues, sets forth an action plan of projects and programs to address those needs in a manner consistent with the adopted policies, and documents the financial resources required to implement the plan. Additional areas of emphasis and policy initiatives in the 2026 RTP include Environmental Justice planning, the Sustainable Communities Strategy, and public participation. In addition, the 2026 RTP includes updated project lists and performance measures.

The RTP comprises the required elements referenced in the enabling legislation and is organized into sections. A description of each section follows.

- ✓ 1. Introduction
- ✓ 2. Growth Trends and Forecast
- ✓ 3. Transportation System
- ✓ 4. Policies and Implementing Actions
- ✓ 5. Sustainable Communities Strategy (SCS)
- ✓ 6. Financial Element
- ✓ 7. Environmental Justice (EJ) Analysis

1.4 PROJECT ALTERNATIVES

The 2026 RTP/SCS scenarios are built around four key components: regional growth forecasts, land use patterns, the transportation network, and assumptions regarding future travel behavior in Merced County. The regional growth forecast includes projected population, housing, and employment through 2050, including the RTP horizon year of 2049. Land use considerations include development patterns such as compact growth, mixed-use development, urban form, and location efficiency.

The transportation network incorporates planned investments in public transit, bicycle and pedestrian facilities, roadway capacity improvements to enhance mobility and connectivity, and roadway maintenance projects that support a safe and reliable transportation system. Each Sustainable Communities Strategy (SCS) scenario varies these components to reflect different community priorities, development patterns, and transportation investment strategies identified by Merced County residents. Based on input received through the RTP/SCS Community Survey and subsequent discussions by the Roundtable and Transportation Review Board (TRB), the MCAG Board approved three scenarios for detailed evaluation.

Scenario A: Baseline / Historical Trend

Scenario A reflects a continuation of existing development patterns, transportation investments, and adopted policies. This scenario assumes growth occurs in a manner generally consistent with historical trends and currently planned projects, with limited shifts in land use or travel behavior.

Key characteristics include:

- ✓ Limited emphasis on infill or redevelopment within existing urban areas.
- ✓ Continued development of lower-density, suburban single-family neighborhoods.
- ✓ Greater reliance on personal vehicles for daily travel.
- ✓ Fewer opportunities to access destinations by transit, walking, or bicycling compared to the other scenarios.

Scenario B: Multimodal Infill and Conservation

Scenario B focuses on directing growth toward existing communities, major transit corridors, and rail station areas while preserving agricultural lands, open space, and environmentally sensitive resources. The scenario emphasizes compact development and expands multimodal transportation options.

Key characteristics include:

- ✓ Higher-density development concentrated near existing and planned rail stations.
- ✓ Increased infill and redevelopment within established urban areas and along major transit corridors.
- ✓ More compact development patterns that accommodate growth while reducing land consumption and conserving farmland and natural resources.

- ✓ Enhanced investments in public transit, bicycle, and pedestrian infrastructure to reduce automobile dependence and support a broader range of travel choices.

Scenario C: Affordable Housing-Centered Growth – Preferred Project Scenario

Scenario C prioritizes housing affordability, equity, and access to employment opportunities by directing a greater share of future residential growth to multifamily and higher-density housing located near jobs, services, and transit. The scenario also includes substantial infill development and seeks to improve transportation accessibility for lower-income households.

Key characteristics include:

- ✓ Increased development of multifamily housing compared to historical growth patterns.
- ✓ Greater emphasis on locating housing near employment centers, transit corridors, downtown areas, UC Merced, and transit-served unincorporated communities such as Planada.
- ✓ Less concentrated development around rail stations than Scenario B, with a broader distribution of housing near jobs and transit throughout the region.
- ✓ Reduced commute distances and improved access to employment and services for lower-income households through strategic housing placement and enhanced transportation connectivity.

In addition to the SCS alternatives, the No Project Alternative was also assessed as required by CEQA. The No Project Alternative and each of the three SCS scenario alternatives are further defined in Chapter 4 of this PEIR. A matrix identifying the Performance Measures and results, and Project Goals used to evaluate and compare each alternative (where available) is presented in Tables 4-1 through 4-3 in Chapter 4. It should be noted that other environmental issues were considered when comparing and selecting the Preferred Project Alternative, including all environmental issue areas referenced in Chapter 3 of this PEIR and further documented in Chapter 4.

Based on public input received throughout the RTP/SCS planning process, as summarized in Chapter 5 of the 2026 RTP/SCS, and the recommendation of the RTP Roundtable, the MCAG Governing Board selected Scenario C – Affordable Housing-Centered Growth as the preferred Sustainable Communities Strategy (SCS) for the 2026 RTP/SCS.

Scenario C represents a practical yet forward-looking vision for Merced County's future, designed to achieve the region's greenhouse gas (GHG) emissions reduction target of 14 percent by 2035. The scenario responds to community priorities by promoting housing affordability, improving access to jobs and services, supporting economic development, enhancing air quality, maintaining transportation infrastructure, and improving safety for all transportation system users.

By encouraging housing and employment growth in locations with access to transit and other transportation options, Scenario C supports a more sustainable, connected, and equitable future. If

successfully implemented, the scenario would provide residents throughout Merced County with greater housing choices, improved mobility, and expanded access to opportunities.

Transportation Investment Strategy
As described in Chapter 5 of the 2026 RTP/SCS, Scenario C promotes a transportation and land use pattern that supports walking, bicycling, and transit use by focusing development near employment centers, transit corridors, downtowns, neighborhood commercial areas, and other key destinations. By locating housing, jobs, and services closer together, the scenario reduces the need for longer trips and provides residents with a wider range of transportation choices.

To support this vision, MCAG and its member agencies are committed to continued investments in public transit, bicycle and pedestrian facilities, and other multimodal transportation improvements that enhance mobility, accessibility, and connectivity throughout the region. At the same time, maintaining and preserving the existing transportation system, including roadway rehabilitation, pothole repair, and safety improvements, will remain a fundamental priority to ensure a safe, reliable, and efficient transportation network for current and future residents.

The preferred project alternative consists of the transportation project lists and other future improvements outlined in Chapters 3 and 6 of the 2026 RTP/SCS, as well as the SCS Scenario C.

1.5 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

Section 15123 of the CEQA Guidelines requires that an EIR identify areas of controversy and issues to be resolved that are known to the Lead Agency, including those raised by other agencies and the public. Potential areas of controversy and issues to be resolved by the MCAG's decision-makers include environmental issues where a significant, unavoidable impact has been identified and/or where regional concerns elevate the Project's perceived effects beyond reasonable threshold criteria. Areas of controversy associated with the Project are identified through comments received during the Notice of Preparation ("NOP") process (see Appendix A), through input solicited during the public scoping meeting, and through an understanding of the regional issues in the Project area.

Areas of known controversy, including issues raised by some members of the community are: traffic generation and congestion, loss of open space and recreation, cultural and tribal cultural impacts, climate change impacts, agricultural and forestry related impacts, dust and air quality impacts, water quality of urban runoff and water supply, land use impacts, social and economic impacts, noise impacts, population increase and effect on public services and utility systems, impacts to wildlife habitats, impacts on historical resources, and impacts to neighborhood character and density. The areas of known controversy noted above are analyzed, either directly or as indirect (secondary) effects, in Chapter 3 of this PEIR.

1.6 SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVEL OF SIGNIFICANCE

As stated in the State CEQA Guidelines §15123(a), "[a]n EIR shall contain a brief summary of the proposed actions and their consequences. The language of the summary should be as clear and simple as reasonably practical." State CEQA Guidelines §15123(b) states, "[t]he summary shall identify: (1) each significant effect with proposed mitigation measures and alternatives that would reduce or avoid that effect; (2) areas of controversy known to the Lead Agency, including issues raised by agencies and the public; and (3) issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects." Accordingly, this summary includes a brief synopsis of the proposed project, environmental impacts and mitigation, areas of known controversy, and issues to be resolved during environmental review. Table 1-1 (at the end of this section) presents the summary of potential environmental impacts, their level of significance without mitigation measures, mitigation measures, and levels of significance with mitigation measures. Chapter 3 of this PEIR provides further detail on the impacts, mitigation measures, and environmental determinations for each environmental area included in the NOP. The NOP determined that a PEIR is required for the RTP, or "Project," because it could have significant environmental impacts.

This Draft PEIR analyzes the RTP's effects on the following environmental issue areas:

- ✓ Aesthetics
- ✓ Agricultural and Forestry Resources
- ✓ Air Quality
- ✓ Biotic Resources
- ✓ Climate Change
- ✓ Cultural and Tribal Cultural Resources
- ✓ Energy and Energy Conservation
- ✓ Geology/Soils/Mineral Resources
- ✓ Hazards and Hazardous Materials
- ✓ Hydrology and Water Quality
- ✓ Land Use, Planning, and Recreational Resources
- ✓ Noise
- ✓ Population, Housing and Employment
- ✓ Public Utilities, Other Utilities and Services Systems
- ✓ Social and Economic Effects
- ✓ Transportation/Traffic
- ✓ Wildfire

Following review of the NOP responses, it was determined that this Draft PEIR should focus on the same environmental issues referenced in the NOP and listed above. To assist in the understanding of this report and Table 1-1 below, which summarizes the impacts of the project, presents the identified mitigation measures, and the level of significance after mitigation, the following descriptions, as found in Article 20 of the State CEQA Guidelines, are provided:

- ✓ **Project** means the whole of an action, which has the potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment directly or ultimately.

- ✓ **Significant effect on the environment** means 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. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

- ✓ **Environment** means the physical conditions that exist within the area which will be affected by a proposed project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. The area involved shall be the area in which significant effects would occur either directly or indirectly as a result of the project. The "environment" includes both natural and man-made conditions.

- ✓ **Effects and impacts** as used in these Guidelines are synonymous. Effects include direct or primary effects that occur at the same time and place, and indirect or secondary effects that are caused by the project and occur later in time or farther removed in distance but are still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in land-use patterns, population density, or growth rate, as well as effects on air, water, and other natural systems, including ecosystems. Effects analyzed under CEQA must be related to a physical change.

- ✓ **Mitigation** includes: 1) avoiding the impact altogether by not taking a certain action or parts of an action; 2) minimizing impacts by limiting the degree or magnitude of the action and its implementation; 3) rectifying the impact by repairing, rehabilitating, or restoring the impacted environment; 4) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and 5) compensating for the impact by replacing or providing substitute resources or environments.

- ✓ **Cumulative impacts** refer to two or more individual effects that, when considered together, are considerable or that compound or increase other environmental impacts.

- ✓ A **less-than-significant impact** is an impact that is adverse, but that does not exceed the defined standards of significance. Less-than-significant impacts do not require mitigation.

- ✓ A **potentially significant impact** is an impact for which there is not enough information to make a finding of less-than-significant impact; however, for the purpose of this Draft EIR, the impact is considered significant. A potentially significant impact is equivalent to a significant impact and requires identifying feasible mitigation measures or alternatives.

- ✓ A **significant impact** is an impact that exceeds the defined standards of significance and would or could cause a substantial adverse change in the environment. Mitigation measures are recommended to eliminate or reduce the impact to a level less than significant.

- ✓ A **significant and unavoidable impact** is an impact that exceeds the defined standards of significance and cannot be eliminated or reduced to a less-than-significant level through the implementation of mitigation measures.

Based on findings identified in Chapter 4 of this Draft PEIR, SCS Scenario 3 is reflected in the 2022 RTP/SCS as the Preferred Project Alternative. This alternative was analyzed by considering congestion levels and historical growth rates in vehicle miles traveled (VMT) and vehicle trips (VT), as well as anticipated growth in the use of other modes of transportation, such as transit, rail, aviation, and non-motorized travel. Improvement projects evaluated and identified under this alternative are "financially constrained" in accordance with the Infrastructure Investment and Jobs Act, the 2021 Bipartisan Infrastructure Law (BIL), Moving Ahead for Progress in the 21st Century Act (MAP-21), and the Fixing America's Surface Transportation (FAST) Act and air quality conformity requirements. Further, this alternative focuses on the designation of planned growth and development that is consistent with established land-use density policies. This includes the designation of urban and rural development in a manner consistent with adopted local agency General Plans.

Table 1-1 below summarizes the impacts, mitigation measures, and levels of significance for each environmental issue area listed above.

TABLE 1-1

Impact(s)	Mitigation Measure (s)	Significance after Mitigation
AESTHETICS		
AE 3.2.1 – Have a substantial adverse effect on a scenic vista.	AE 3.2.1-1 Implement design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions. AE 3.2.1-2 To the extent feasible, noise barriers that will not degrade or obstruct a scenic view will be constructed. Noise barriers will be well landscaped, complement the natural landscape, and be graffiti-resistant.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the significant aesthetic impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
AE 3.2.2 – Substantially damage scenic resources, including, but not limited to, trees, rock outcropping, and historic buildings within a state scenic highway.	AE 3.2.2-1 Avoid construction of transportation facilities and new development in state and locally designated scenic highways and vista points. AE 3.2.2-2 If transportation facilities and new development are constructed in state and locally designated scenic highways and/or vista points, design, construction, and/or operation of the transportation facility or new development will be consistent with applicable guidelines and regulations for the preservation of scenic resources along the designated scenic highway.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the significant scenic resources impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
AE 3.2.3 – In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? The construction and implementation of improvement projects or new development could create significant contrasts with the overall visual character of the existing landscape. This could have a potentially significant impact.	AE 3.2.3-1 Where appropriate, encourage the development of design guidelines for each type of transportation facility and land use that make elements of proposed projects visually compatible with surrounding areas. Visual guidelines will, at a minimum, include setback buffers, landscaping, color, texture, signage, and lighting criteria. The following methods will be employed whenever possible: ✓ Transportation systems and new development will be designed to allow the surrounding landscape to dominate. ✓ Transportation systems and new development will be designed to be compatible with the surrounding environment (e.g., colors and construction materials). ✓ If exotic vegetation is used, it will be used for screening and landscaping that blends in with and complements the natural landscape. ✓ Trees bordering highways will remain or be replaced so that clear-cutting is not evident. ✓ Grading will blend with the adjacent landforms and topography.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the significant visual resources impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

TABLE 1-1

Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	AE 3.2.3-2 Project implementation agencies should design transportation and new development projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Project implementation agencies should design projects to minimize their intrusion into important viewsheds and use contour grading to better match the surrounding terrain. To the maximum extent feasible, landscaping along highway corridors should be designed to incorporate significant natural elements and visual interest, softening the hard-edged, linear travel experience that would otherwise occur. AE 3.2.3-3 Project implementation agencies should use natural landscaping to minimize contrasts between the Project (RTP/SCS) and surrounding areas. Wherever possible, interchanges and transit lines should be designed at the grade of the surrounding land to minimize visual obstruction. Edges of major cut-and-fill slopes should be contoured to provide a more natural-looking finished profile. Project implementation agencies should, to the greatest extent possible, replace and renew landscaping along corridors as part of road widenings, interchange projects, and related improvements. New corridor landscaping should be designed to respect existing natural and man-made features and to complement the dominant landscaping of surrounding areas. AE 3.2.3-4 Project implementation agencies should construct sound walls of materials whose color and texture complement the surrounding landscape and development, and to the maximum extent feasible, use color, texture, and alternating facades to “break up” large facades and provide visual interest. Where there is room, project sponsors should landscape the sound walls with plants that screen them, preferably native vegetation or landscaping that complements the dominant landscaping of surrounding areas.	
AE 3.2.4 – Create a new source of substantial light or glare that could adversely affect day or nighttime views in the area.	AE 3.2.4-1 Where appropriate, encourage the development of design guidelines for each type of transportation facility and land use development that make light elements of proposed facilities visually compatible with surrounding areas. The following methods will be employed whenever possible: ✓ Transportation systems and new development areas will be designed to allow the surrounding landscape to dominate. ✓ Transportation systems and new development areas will be developed to be compatible with the surrounding environment. ✓ Lighting devices will be employed, such as downward-facing light, light shields, and amber lumens.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the significant new light and glare impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

TABLE 1-1

Impact(s)	Mitigation Measure (s)	Significance after Mitigation
AGRICULTURAL AND FORESTRY RESOURCES		
AR 3.3.1 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.	AR 3.3.1-1 MCAG shall work with its member agencies and Caltrans as they implement projects to commit to mitigating at a 1:1 ratio any loss of farmland or natural lands due to projects funded by MCAG. AR 3.3.1-2 Implementing agencies should encourage infill development, in place of development in rural and environmentally sensitive areas. Agencies should seek funding to prepare specific plans and related environmental documents to facilitate mixed-use development and enable these areas to serve as receiving sites for the transfer of development rights away from environmentally sensitive lands and rural areas outside established urban growth boundaries. AR 3.3.1-3 Implementing agencies should consider agricultural resource lands when considering project designs. Prior to design approval for RTP/SCS projects, the implementing agency should assess the project area for agricultural and forestry resources and constraints. For federally funded projects, implementing and local agencies are required to follow the rules and regulations of the Farmland Protection Policy Act, including determining the impact by completing the Farmland Conversion Impact Rating form (AD-1006). For non-federally funded projects, implementing and local agencies should assess projects for the presence of important farmland (prime farmland, unique farmland, farmland of statewide importance) and, if present, perform a Land Assessment and Site Evaluation (LESA). AR 3.3.1-4 Implementing agencies should consider agriculture and forestry resources in all projects and seek to avoid or minimize the encroachment and/or impact on these areas. Agencies should consider measures such as, but not limited to, relocation or redesign of site features, reduction of the project footprint, or compensation and/or preservation activities to lessen the overall impact on resource lands. Prior to final approval of each transportation improvement project, the implementing agency should consider whether to include a conservation easement program or enroll agricultural lands in the Williamson Act program.	The responsibility to approve land-use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
AR 3.3.2 Conflict with existing zoning for agriculture use, or a Williamson Act Contract.	AR 3.3.2-1 Mitigation Measures referenced in Impact 3.3.1, above are also included by reference. AR 3.3.2-2 Individual projects will be consistent with federal, state, and local policies that preserve agricultural lands and support the economic viability of agricultural activities, as well as policies that provide compensation for property owners if preservation is not feasible. AR 3.3.2-3 For projects in agricultural areas, project implementation agencies should contact the California Department of Conservation and the Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy. AR 3.3.2-4 Prior to final approval of each individual improvement project, the implementing agency should avoid impacts to prime farmlands or farmlands that support crops considered valuable to the local or regional economy.	The responsibility to approve land-use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
AR 3.3.3 Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or	AR 3.3.3-1 Mitigation Measures referenced in Impact 3.3.1, above are also included by reference. AR 3.3.3-2 Individual projects will be consistent with federal, state, and local zoning policies that preserve timber or forest lands and support the economic viability of forest activities, as well as policies that provide compensation for property owners if preservation is not feasible.	The responsibility to approve land-use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts, it is probable that such impacts could remain

TABLE 1-1

Impact(s)	Mitigation Measure (s)	Significance after Mitigation
timberland zoned Timberland Production (as defined by Government Code section 51104(g)).	AR 3.3.3-3 For projects in timber or forest areas, project implementation agencies should contact the California Department of Forestry and Fire Protection (CAL FIRE) and the U.S. Forest Service to identify the location of timber and forest lands to address applicable zoning regulations and processes.	significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
AR 3.3.4 Result in the loss of forest land or conversion of forest land to non-forest use.	AR 3.3.4-1 Mitigation Measures referenced in Impact 3.3.1, above are also included by reference. AR 3.3.4-2 Individual projects will be consistent with federal, state, and local policies that preserve forest lands and support the economic viability of forest activities, as well as policies that provide compensation for property owners if preservation is not feasible. AR 3.3.4-3 For projects in forest areas, project implementation agencies should contact the California Department of Forestry and Fire Protection (CAL FIRE) and the U.S. Forest Service to identify the location of forest lands and address applicable regulations and processes. AR 3.3.4-4 Prior to final approval of each individual improvement project, the implementing agency should avoid impacts forest lands.	The responsibility to approve land-use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
AR 3.3.5 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.	AR 3.3.5-1 Reference the mitigation measure reflected in Impacts 3.3.1 through 3.3.4.	The responsibility to approve land-use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
AIR QUALITY		
AQ 3.4.1 Conflict with or obstruct implementation of the applicable air quality plan.	None required.	Not applicable.
AQ 3.4.2 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.	None required.	Not applicable.
AQ 3.4.3 Expose sensitive receptors to substantial pollutant concentrations.	AQ 3.4.3-1 As air toxics research continues, implementing agencies should utilize the tools and techniques that are developed for assessing health outcomes as a result of lifetime MSAT exposure. The potential health risks posed by MSAT exposure should continue to be factored into project-level decision-making during environmental	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above

TABLE 1-1

Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	review. Specifically, at the project level, implementing agencies shall require or conduct air toxic risk assessments to determine mobile-source air toxic impacts.	mitigation measures will provide the framework and direction to avoid or reduce the identified health risk impacts, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategy intended to avoid or reduce the significant impacts identified.
AQ 3.4.4 Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	AQ 3.4.4-1 Implementing agencies should require assessment of new and existing odor sources for transportation improvement projects and future land use development projects to determine whether sensitive receptors would be exposed to objectionable odors and apply recommended applicable mitigation measures as defined by the applicable local air district and best practices.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified objectionable odor impacts, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategy intended to avoid or reduce the significant impacts identified.
BIOTIC RESOURCES		
BR 3.5.1 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	BR 3.5.1-1 Each proposed individual transportation improvement project and future land use development will consider the displacement of sensitive habitat, sensitive species, and non-native habitat. BR 3.5.1-2 When avoidance of native vegetation removal is not possible, each transportation improvement project and future land use development shall replant disturbed areas with commensurate native vegetation of high habitat value adjacent to the project (i.e., as opposed to ornamental vegetation with relatively less habitat value). BR 3.5.1-3 Focused sensitive plant and wildlife species and non-native habitat surveys will be conducted within suitable habitat to determine the distribution of sensitive species within the biological impact area of each transportation improvement project and future land use development. Sensitive plant and non-native habitat surveys will be conducted during the appropriate flowering season for sensitive plant species that may occur within the individual transportation improvement project or future land use development area. In all cases, impacts on special-status species and/or their habitat shall be avoided during construction to the extent feasible. BR 3.5.1-4 If sensitive plant or wildlife species and non-native habitat are identified within the biological impact area, a Biological Resource Management Plan (BRMP) will be developed to address appropriate avoidance and minimization measures. These measures may include seed collection and salvage measures for sensitive plant species and non-native habitats, silt fencing, exclusion fencing, and/or appropriate compensation where impacts cannot be fully avoided. BR 3.5.1-5 Individual transportation improvement projects and future land use developments shall include off-site habitat enhancement or restoration to compensate for unavoidable habitat losses from the project site.	This impact would likely be significant if the proposed individual improvement project occurs within or near known populations of sensitive plant and wildlife species or within designated critical habitat for federally or State-listed species. These mitigation measures would require implementing agencies to avoid or mitigate impacts to sensitive plant and wildlife species. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on sensitive plant and wildlife species, such impacts are likely to remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

TABLE 1-1

Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	BR 3.5.1-6 Locations of sensitive species, sensitive habitat, and non-native habitat will be mapped and shown on construction drawings and identified as Environmentally Sensitive Areas (ESAs). Prior to construction, these areas will be flagged and/or fenced to prevent unnecessary impacts from machinery and foot traffic. BR 3.5.1-7 Temporary access roads and staging areas will not be located within areas containing sensitive plant, sensitive wildlife species, or non-native habitat wherever feasible, so as to avoid or minimize impacts to these species. BR 3.5.1-8 Construction activities will be scheduled, as appropriate and feasible, to avoid sensitive times that have a greater likelihood to affect significant resources such as spawning periods for fish, nesting season for birds, and/or the rainy season for riparian habitat and sediment/erosion control. BR 3.5.1-9 All vegetation (including tall grasses) will be removed between August 16th and February 14th, if possible, to avoid potential conflicts with nesting birds. If it is not possible to remove vegetation during that time frame, a nest clearance survey will be completed prior to vegetation clearing. Any detected nests will be mapped and provided with an appropriate buffer as recommended by a qualified biologist. Construction activities within the buffer area will not be allowed until after September 15 or until fledglings have abandoned the nest. BR 3.5.1-10 A Worker Awareness Program (environmental education) shall be developed and implemented to inform project workers of their responsibilities in regard to avoiding and minimizing impacts on sensitive biological resources. BR 3.5.1-11 An Environmental Inspector shall be appointed to serve as a contact for issues that may arise concerning implementation of mitigation measures, and to document and report on adherence to these measures. BR 3.5.1-12 A qualified wetland scientist shall review construction drawings as part of each project-specific environmental analysis to determine whether wetlands will be impacted, and if necessary, perform a formal wetland delineation. Appropriate State and federal permits shall be obtained, but each project EIR will contain language clearly stating the provisions of such permits, including avoidance measures, restoration procedures, and, in the case of permanent impacts, compensatory creation or enhancement measures to ensure no net loss of wetland extent or function and values. BR 3.5.1-13 Sensitive habitats (native vegetative communities identified as rare and/or sensitive by the CDFW) and special-status plant species (including vernal pools) impacted by projects shall be restored and augmented, if impacts are temporary, at a 1.1:1 ratio (compensation acres to impacted acres). Permanent impacts shall be compensated for by creating or restoring habitats at a 3:1 ratio as close as possible to the site of the impact. BR 3.5.1-14 When work is conducted in identified sensitive habitat areas and/or areas of intact native vegetation, construction protocols shall require the salvage of perennial plants and the salvage and stockpile of topsoil (the surface material from 6 to 12 inches deep) and shall be used in restoring native vegetation to all areas of temporary disturbance within the project area.	

TABLE 1-1

Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	BR 3.5.1-15 If specific project area trees are designated as “Landmark Trees” or “Heritage Trees”, then approval for removals shall be obtained through the appropriate entity, and appropriate mitigation measures shall be developed at that time, to ensure that the trees are replaced. Due to the close proximity of these areas to sensitive wildlife habitats, all mitigation trees will be sourced only from locally collected native species. BR 3.5.1-16 The height, spacing, number, and type of light fixtures will be selected and installed to minimize intrusive light escaping from the physical boundaries of the site. BR 3.5.1-17 The height, spacing, number, and type of light fixtures will be selected and installed to minimize intrusive light escaping from the physical boundaries of the site. In addition, road noise shall be minimized by implementing appropriate and effective noise-reduction strategies or noise-abatement applications, as required by implementing agencies. BR 3.5.1-18 A qualified biologist shall conduct a habitat assessment, well in advance of implementation of individual subsequent projects, to determine if individual project areas or their immediate vicinity contain habitat suitable to support special-status plant or animal species, including, but not limited to, those mentioned above. BR 3.5.1-19 It is recommended that the lead or responsible agency assess the presence/absence of special-status species by conducting surveys following recommended protocols or protocol-equivalent surveys. BR 3.5.1-20 If special-status plant or animal species within or in the vicinity of tiered project areas are detected, consultation with CDFW to discuss how to implement ground-disturbing activities and avoid take shall be undertaken. BR 3.5.1-21 In the case of the detection of State-listed species, consultation with CDFW shall be undertaken to discuss how to avoid take, or if avoidance is not feasible, to acquire an Incidental Take Permit (ITP) prior to ground-disturbing activities, pursuant to Fish and Game Code§ 2081 (b). BR 3.5.1-22 Implementing agencies should consult with the USFWS on potential impacts to federally listed species. Implementing agencies should consult with the USFWS in order to comply with the Federal Endangered Species Act (FESA) well in advance of any ground-disturbing activities. A take under FESA includes significant habitat modification or degradation that could result in the death or injury of a listed species by interfering with essential behavioral patterns, such as breeding, foraging, or nesting. BR 3.5.1-23 Implementing agencies are encouraged to report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNDDB field survey form can be found at the following link: **http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDB FieldSurveyForm.pdf**. The completed form can be mailed electronically to CNDDB at the following email address: **CNDDB@wildlife.ca.gov.** The types of information reported to CNDDB are available at the following link: **http://www.dfg.ca.gov/biogeodata/cnddb/plants and animals.asp.**	

TABLE 1-1

Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	BR 3.5.1-24 If it is determined that tiered projects have the potential to impact biological resources, an assessment of filing fees will be necessary. Fees are payable upon the Lead Agency's filing of the Notice of Determination and help defray CDFW's environmental review costs. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, title. 14, § 753.5; Fish & Game Code, § 711.4; Pub. Resources Code, § 21089).	
BR 3.5.2 Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	BR 3.5.2-1 When applicable to federally funded projects, responsible and implementing agencies should commit to improved interagency coordination and integration of the National Environmental Policy Act (NEPA) and the Clean Water Act Section 404 procedures during three stages: transportation planning, project programming, and project implementation. Affected State and local agencies should commit to ensuring the earliest possible consideration of environmental concerns pertaining to U.S. water bodies, including wetlands, at each of the three stages identified above. In addition, the agencies should place a high priority on avoiding adverse impacts to waters of the U.S. and associated sensitive species, including threatened and endangered species. Implementation of NEPA-404 requirements will expedite the construction of necessary transportation projects, benefiting mobility and the economy at large. The process will also enable more street and highway projects to proceed on budget and on schedule. Finally, the process will improve cooperation and efficiency of governmental operations at all levels, thereby better serving the public. BR 3.5.2-2 Construction and operational Best Management Practices (BMPs) will be identified, installed, and maintained by implementing agencies in order to prevent silt and other pollutants from entering jurisdictional waters and wetlands, thereby degrading or destroying wildlife and/or natural habitat. BMPs may include straw bales and/or mats, temporary sedimentation basins, silt fence, sandbag check dams, dry season construction, etc. BR 3.5.2-3 Native soils in construction areas will be removed, stockpiled separately, and replaced by implementing agencies in those areas where onsite revegetation of the native habitat is planned. BR 3.5.2-4 Any disturbed natural areas will be replanted by implementing agencies with appropriate native vegetation following the completion of construction activities. BR 3.5.2-5 During the individual improvement or future land use development project design phase, impacts to jurisdictional waters and wetlands will be minimized by implementing agencies to the greatest extent feasible. BR 3.5.2-6 Implementing agencies will obtain and comply with appropriate regulatory requirements prior to construction. BR 3.5.2-7 It is recommended that a qualified biologist conduct a habitat assessment in advance of project implementation, to determine if individual project areas or their immediate vicinity support freshwater marsh, wetland, vernal pool, and/or riparian communities. BR 3.5.2-8 Where applicable, it is recommended that a formal wetland delineation be conducted by a qualified biologist to determine the location and extent of wetlands and waterways on parcels slated for development. Please note that, while there is overlap, State and Federal definitions of wetlands, as well as which activities require notification pursuant to Fish and Game Code § 1602, differ.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While the implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on sensitive habitats, including jurisdictional waters and wetlands, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	BR 3.5.2-9 Project-related activities that have the potential to change the bed, bank, and channel of streams and other waterways may be subject to CDFW's regulatory authority pursuant to Fish and Game Code §1600 et seq.; therefore, notification is recommended. Fish & Game Code §1602 requires an entity to notify CDFW prior to commencing any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake (including the removal of riparian vegetation); (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. "Any river, stream, or lake" includes those that are ephemeral or intermittent as well as those that are perennial. CDFW is required to comply with CEQA in the issuance of a Lake and Streambed Alteration Agreement. For additional information on notification requirements, please contact our staff in the Lake and Streambed Alteration Program at (559) 243-4593.	
BR 3.5.3 Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	BR 3.5.3-1 For Individual transportation and future land use development projects near water resources, implementing agencies shall prepare an aquatic resources delineation, in accordance with the "Minimum Standards for Acceptance of Preliminary Aquatic Resource Delineations" and "Final Map and Drawing Standards for the South Pacific Division Regulatory Program" under "Jurisdiction" on the U.S. Army Corps of Engineers website (www.spk.usace.army.mil/missions/regulatry.aspx), and submit it to the U.S. Army Corps of Engineers, Regulatory Division, California South Branch, 1325 J Street, Room 1350, Sacramento, California 95814, for verification. A list of consultants who prepare wetland delineations and permit application documents is also available on our website at the same location. BR 3.5.3-2 For Individual transportation and future land use development projects near water resources, implementing agencies shall include alternatives that avoid impacts to wetlands or other waters of the United States. Every effort should be made to avoid project features that require the discharge of dredged or fill material into waters of the United States. In the event it can be clearly demonstrated that there are no practicable alternatives to filling waters of the United States, mitigation plans should be developed to compensate for the unavoidable losses resulting from project implementation.	The responsibility to mitigate siltation impacts rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce siltation impacts, it is likely that such impacts will remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
BR 3.5.4 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.	BR 3.5.4-1 During final design, implementing agencies will design, construct, and maintain terrestrial wildlife crossings in order to minimize barrier effects and habitat fragmentation created by individual transportation projects and future land use developments. BR 3.5.4-2 During final design, implementing agencies will design, construct, and maintain any structure/culvert placed within a stream where endangered or threatened fish occur/may occur. The structure/culvert will not constitute a barrier to upstream or downstream movement of aquatic life or cause an avoidance reaction by fish that impedes their upstream or downstream movement. This includes, but is not limited to, the supply of water at an appropriate depth for fish migration.	These mitigation measures would require implementing agencies responsible for the review, design, and implementation of transportation projects and future land use developments to avoid or mitigate impacts on wildlife movement. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce temporary and permanent impacts on the movement of terrestrial and aquatic wildlife, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
BR 3.5.5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	BR 3.5.5-1 Implementing agencies should require project applicants to prepare biological resources assessments for specific projects proposed in areas containing, or likely to contain, protected trees or other locally protected biological resources. The assessment should be conducted by appropriately trained professionals in accordance with industry-adopted protocols and standards. Mitigation should be implemented when significance thresholds are exceeded. Mitigation should be consistent with the requirements of CEQA and/or follow applicable plans	The responsibility to mitigate siltation impacts rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce conflicts with local policies or ordinances that protect biological

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	promulgated to protect species/habitat. BR 3.5.5-2 Implementing agencies should design projects such that they avoid and minimize direct and indirect impacts to protected trees and other locally protected resources where feasible, as defined in section 15364 of the CEQA Guidelines. BR 3.5.5-3 As part of project-level environmental review, implementing agencies will ensure that projects comply with the most recent general plans, policies, and ordinances, and conservation plans. A review of these documents and compliance with their requirements will be demonstrated in the project-level environmental documentation. Review of these documents and compliance with their requirements should be demonstrated in project-level environmental documentation.	resources, such impacts may remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
BR 3.5.6 Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.	BR 3.5.6-1 Consult with federal, state, and/or local agencies that handle the administration of HCPs and NCCPs. BR 3.5.6-2 When feasible, the project will be designed in such a way that lands preserved under HCPs or NCCPs are avoided. BR 3.5.6-3 Sufficient conservation measures to fulfill the HCPs or NCCPs requirements should be taken when avoidance is determined to be infeasible.	The responsibility to mitigate siltation impacts rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. Implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce conflicts with any HCPs, NCCPs, and other approved conservation plans. It is anticipated that the Projects presented in the RTP/SCS will be required to comply with existing conservation plans, and that the listed mitigation measures will be sufficient to ensure impacts remain below a significant level.
CLIMATE CHANGE		
CC 3.6.1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	CC 3.6.1-1 MCAG shall update future Regional Transportation Plans (including Sustainable Community Strategies) to incorporate policies and measures that will lead to further reduced GHG emissions. Such policies and measures may be derived from the General Plans, local jurisdictions' Climate Action Plans (CAPs), and other adopted policies and plans of its member agencies that include GHG mitigation and adaptation measures or other sources. CC 3.6.1-2 Local governments should adopt policies and develop practices that lead to GHG emission reductions. These activities will include, but are not limited to, providing technical assistance and information sharing on developing local Climate Action Plans. CC 3.6.1-3 Implementing and local agencies should adopt and implement Climate Action Plans (CAPs, also known as Plans for the Reduction of Greenhouse Gas Emissions as described in State CEQA Guidelines Section 15183.5 Tiering and Streamlining the Analysis of Greenhouse Gas Emissions) that do the following: ✓ Quantify GHG emissions, both existing and projected over a specified period, resulting from activities within each agency's jurisdiction; ✓ Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable; ✓ Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within their respective jurisdictions; ✓ Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce increased transportation GHG emissions that contribute to climate change, it is likely that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified. Merced County is projected to grow by 45,595 persons between 2023 and 2049. MCAG has used the best available information to determine whether the 2026 RTP/SCS is consistent with the State's achievement of the AB 32 GHG emission reductions and addresses SB 375 mandates. Implementation of the mitigation measures described above will help reduce per capita VMT levels throughout Merced County, thereby helping meet the stated goals of AB 32 and the requirements set forth in SB 375. The 2026 RTP/SCS includes numerous projects, action items, funding priorities, a land use allocation to support an active transportation system, and programs to develop and improve alternative modes of transportation throughout the County. MCAG will continue to coordinate with local land use agencies to assist in developing plans and policies to reduce VMT.

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	✓ Establish a mechanism to monitor the plan's progress toward achieving that level and to require amendment if the plan is not achieving specified levels; and ✓ Be adopted in a public process following environmental review. CAPs should, when appropriate, incorporate planning and land use measures from the California Attorney General's latest list of example policies to address climate change at both the plan and project levels. Specifically, at the plan level, land use plans can and should, when appropriate, incorporate planning and land use measures from the California Attorney General's latest list of example policies to address climate change, including, but not limited to, policies from the web page, such as: ✓ Smart growth, jobs/housing balance, transit-oriented development, and infill development through land use designations, incentives and fees, zoning, and public-private partnerships. ✓ Create transit, bicycle, and pedestrian connections through planning, funding, development requirements, incentives, and regional cooperation, and create disincentives for auto use. ✓ Energy and water-efficient buildings and landscaping through ordinances, development fees, incentives, project timing, prioritization, and other implementing tools. ✓ In addition, implementing and local agencies should incorporate, as appropriate, policies to encourage implementation of the Attorney General's list of project-specific mitigation measures. ✓ In addition, CAPs should also incorporate analysis of climate change adaptation, in recognition of the likely and potential effects of climate change in the future regardless of the level of mitigation and in conjunction with Executive Order S-13-08, which seeks to enhance the state's management of climate impacts including sea level rise, increased temperatures, shifting precipitation, and extreme weather events by facilitating the development of state's first climate adaptation strategy. CC 3.6.1-4 MCAG shall continue to work closely with its member agencies to help them participate in the statewide Active Transportation Program (ATP). CC 3.6.1-5 Project Level Environmental Documents Project-level environmental documents shall analyze construction, maintenance, and land use development project Greenhouse Gas (GHG) emissions. CC 3.6.1-6 Off-Model Reduction Strategies MCAG will work with other affected and responsible agencies to implement the following strategies that are quantified "off-model": ✓ Regional electric vehicle (EV) charging infrastructure programs. ✓ Active transportation projects. ✓ Vanpool program expansion. ✓ Rideshare programs. ✓ Rule 9410 Employer Trip Reductions. ✓ ITS and other TSM projects. CC 3.6.1-7 Short-Range Improvement Plan - Air Quality Measures The Short-Range Improvement Plan outlines actions to reduce air emissions between 2026 and 2026. As	GHG emissions for 2035 with the Project are 17% lower than the 2005 level, as indicated above. As a result, the RTP would meet ARB per capita emission targets set pursuant to SB 375. Mitigation measures presented above help reduce GHG emissions even further to the extent feasible, considering the requirements set forth in AB 32 and SB 375. Such measures will also assist in promoting and implementing Smart Growth and sustainable planning practices by the cities and the County, consistent with the SCS.

TABLE 1-1

Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	indicated in the needs assessment sections of the RTP/SCS, the majority of short-term measures improving air quality are related to system, demand, and control management strategies. Local governments, MCAG, and other regional, state, and federal agencies should take the following actions to facilitate the implementation of strategies necessary to ensure that air quality standards are met: ✓ MCAG will continue to consult and coordinate with the other seven Valley MPOs and the SJVAPCD in providing focused/unified transportation/air quality planning. ✓ MCAG and the SJVAPCD will continue to coordinate/consult in activities aimed at achieving both federal and California air quality standards. ✓ Designated responsible governments and agencies will identify and consider Transportation Demand Measures and Transportation Control Measures during State Implementation Plan (SIP) development and carried out where appropriate. ✓ MCAG will continue to support the SJVAPCD's efforts to integrate appropriate policies and implementation measures identified in the Air Quality Guidelines for General Plans into local general plans. ✓ MCAG, Merced County, and its 6 cities will encourage land use patterns that reduce automobile dependency, energy consumption, and support transit and other alternative modes. ✓ MCAG will encourage local transit agencies to replace aging fleets with alternative-fueled buses. ✓ MCAG and local transit agencies will support greater funding flexibility for bus purchases to promote the most energy-efficient models. ✓ MCAG, in cooperation with Caltrans, will promote park-and-ride lots and parking management strategies where appropriate. ✓ MCAG, Caltrans, cities, and the county support alternate fuel strategies to reduce petroleum fuels. Alternative fuel technology can have a significant impact on reducing petroleum-based fuel consumption. CC 3.6.1-8 San Joaquin Valley Clean Transportation Center The San Joaquin Valley Clean Transportation Center, which opened in January 2016, provided an additional advancement in clean energy education and the adoption of clean energy in both residential and business fleets. The Center provides a new regional resource to help improve air quality and reduce vehicle emissions. The Center has strong connections and relations with a national network of manufacturers, suppliers, and fleets to help improve the regional transportation system. Funding is provided by a California Energy Commission grant through CALSTART.	
CC 3.6.2 Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	CC 3.6.2-1 See Mitigation Measures for Impact 3.6.1.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce increased transportation GHG emissions that contribute to climate change, it is likely that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified. Merced County is projected to grow by 45,595 persons between 2023 and 2049. MCAG has used the best available information to determine whether the 2026 RTP/SCS is consistent

TABLE 1-1

Impact(s)	Mitigation Measure (s)	Significance after Mitigation
		with the State's achievement of the AB 32 GHG emission reductions and addresses SB 375 mandates. Implementation of the mitigation measures described above will assist in the reduction of per capita VMT levels throughout Merced County, which will assist in meeting the stated goals of AB 32 and requirements set forth in SB 375. The 2026 RTP/SCS includes numerous projects, action items, funding priorities, a land use allocation to support an active transportation system, and programs to develop and improve alternative modes of transportation throughout the County. MCAG will continue to coordinate with local land use agencies to assist in developing plans and policies to reduce VMT. GHG emissions for 2035 with the Project are 17% lower than the 2005 level, as indicated above. As a result, the RTP would meet ARB per capita emission targets set pursuant to SB 375. Mitigation measures presented above help reduce GHG emissions even further to the extent feasible, considering the requirements set forth in AB 32 and SB 375. Such measures will also assist in promoting and implementing Smart Growth and sustainable planning practices by the cities and the County, consistent with the SCS.
CULTURAL AND TRIBAL CULTURAL RESOURCES		
CTR 3.7.1 Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5.	CTR 3.7.1-1 As part of the appropriate environmental review of individual projects, the project implementation agencies will identify potential impacts to historic resources, considering requirements set forth in Assembly Bill 52 (Gatto, Chapter 532 of 2014) and Senate Bill 18. If the project is also subject to the federal National Environmental Policy Act (NEPA), the tribal requirements of Section 106 of the National Historic Preservation Act of 1966 may also apply. CTR 3.7.1-2 As part of the appropriate environmental review of individual projects, the project implementation agencies will identify potential impacts to historic resources. A records search at the appropriate Information Center will be conducted to determine whether the individual transportation improvement project or future land use development area has been previously surveyed and whether resources were identified. CTR 3.7.1-3 As necessary, prior to construction activities, the implementing agencies will obtain a qualified architectural historian to conduct historic architectural surveys as recommended by the Archaeological Information Center. In the event that the records indicate no previous survey has been conducted, the Information Center will recommend whether a survey is warranted based on the sensitivity of the individual transportation improvement project or future land use development area to cultural resources. CTR 3.7.1-4 Implementing agencies will comply with Section 106 of the National Historic Preservation Act if federal funding or approval is required. This law requires federal agencies to evaluate the impact of their actions on resources that are included in, or eligible for listing in, the National Register of Historic Places. Federal agencies must coordinate with the State Historic Preservation Officer to evaluate impacts and develop mitigation. These mitigation measures may include, but are not limited to, the following: ✓ Carry out the maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation, relocation, or reconstruction of any impacted historic resource, which will be conducted in a manner consistent with the Secretary of the Interior's Guidelines for Preserving, Rehabilitating, Restoring, and .	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce significant impacts on historic resources identified above, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

TABLE 1-1

Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	CTR 3.7.1-5 In some instances, the following mitigation measure may be appropriate in lieu of the previous mitigation measure: ✓ Secure a qualified environmental agency and/or architectural historian, or other such qualified person, to document any significant historical resource(s), by way of historic narrative, photographs, or architectural drawings, as mitigation for the effects of demolition of a resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur.	
CTR 3.7.2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.	CTR 3.7.2-1 As part of the appropriate environmental review of individual projects, the project implementation agencies will identify potential impacts to historic resources, considering requirements set forth in Assembly Bill 52 (Gatto, Chapter 532 of 2014) and Senate Bill 18. If the project is also subject to the federal National Environmental Policy Act (NEPA), the tribal requirements of Section 106 of the National Historic Preservation Act of 1966 may also apply. CTR 3.7.2-2 As part of the appropriate environmental review of individual projects, the implementation agencies will consult with the Native American Heritage Commission to determine whether known sacred sites are in the project area and identify the Native American(s) to contact to obtain information about the project site. CTR 3.7.2-3 Prior to construction activities and as necessary, the implementation agencies will obtain a qualified archaeologist to conduct a record search at the appropriate Information Center of the California Archaeological Inventory to determine whether the project area has been previously surveyed and whether resources were identified. CTR 3.7.2-4 As necessary prior to construction activities, the implementation agencies will obtain a qualified archaeologist or architectural historian (depending on applicability) to conduct archaeological and/or historic architectural surveys as recommended by the Information Center. If the records indicate that no previous survey has been conducted, the Information Center will recommend whether a survey is warranted based on the sensitivity of the project area to cultural resources. CTR 3.7.2-5 If the record search indicates that the project is located in an area rich with cultural materials, the implementing agencies will retain a qualified archaeologist to monitor any subsurface operations, including but not limited to grading, excavation, trenching, or removal of existing features of the subject property. CTR 3.7.2-6 Construction activities and excavation will be conducted to avoid cultural resources (if found). If avoidance is not feasible, further work may be needed to determine the importance of a resource. The implementing agencies will obtain a qualified archaeologist familiar with local archaeology and/or an architectural historian, who should make recommendations regarding the work necessary to determine the importance. If the cultural resource is determined to be important under State or federal guidelines, impacts on it will be mitigated. CTR 3.7.2-7 The project implementation agencies will stop construction activities and excavation in the area where cultural resources are found until a qualified archaeologist can determine the importance of these resources.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce significant construction impacts on archeological resources identified above, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
CTR 3.7.3 Disturb any human remains, including those interred outside of dedicated cemeteries.	CTR 3.7.3-1 As part of the appropriate environmental review of individual projects, the project implementation agencies will identify potential impacts to historic resources, considering requirements set forth in Assembly Bill 52 (Gatto, Chapter 532 of 2014) and Senate Bill 18. If the project is also subject to the federal National Environmental Policy Act (NEPA), the tribal requirements of Section 106 of the National Historic Preservation Act of 1966 may also apply. CTR 3.7.3-2 If the remains are of Native American origin, the coroner will contact the Native American Heritage Commission in order to ascertain the proper descendants of the deceased individual. The coroner will make a recommendation to the landowner or the person responsible for the excavation work on means of treating or disposing of the human remains, with appropriate dignity, and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains. CTR 3.7.3-3 If the Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission, in which case: The landowner or his authorized representative will obtain a Native American monitor - and an archaeologist, if recommended by the Native American monitor - and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance, where the following conditions occur: ✓ The Native American Heritage Commission is unable to identify a descendant. ✓ The descendant identified fails to make a recommendation. ✓ The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce significant impacts on human remains identified above, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
CTR 3.7.4 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.	CTR 3.7.4-1 Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes: a. A brief description of the project. b. The lead agency contact information. c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code§ 21080.3.1 (d)). d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code§ 21073). CTR 3.7.4-2 Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code§ 21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, a mitigated negative declaration, or an environmental impact report. (Pub. Resources Code § 21080.3.1(b)).	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce significant construction impacts on archeological resources identified above, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18). (Pub. Resources Code§ 21080.3.1 (b). CTR 3.7.4-3 Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation: a. Alternatives to the project. b. Recommended mitigation measures. c. Significant effects. (Pub. Resources Code§ 21080.3.2 (a)). CTR 3.7.4-4 Discretionary Topics of Consultation: The following topics are discretionary topics of consultation: a. Type of environmental review necessary. b. Significance of the tribal cultural resources. c. Significance of the project's impacts on tribal cultural resources. d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code§ 21080.3.2 (a). CTR 3.7.4-5 Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code§ 21082.3(c)(1)). CTR 3.7.4-6 Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following: a. Whether the proposed project has a significant impact on an identified tribal cultural resource. b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code§ 21082.3 (b). CTR 3.7.4-7 Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs: a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or	

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	b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code§ 21080.3.2 (b).2 CTR 3.7.4-8 Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code§ 21082.3 (a). CTR 3.7.4-9 Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource,' the lead agency shall consider feasible mitigation pursuant to Public Resources Code section 21084.3 (b). (Pub. Resources Code§ 21082.3 (e). CTR 3.7.4-10 Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources: a. Avoidance and preservation of the resources in place, including, but not limited to: i. Planning and construction to avoid the resources and protect the cultural context. ii. Planning greenspace, parks, or other open space to incorporate the resources with culturally appropriate protection and management criteria. b. 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: i. Protecting the cultural character and integrity of the resource. ii. Protecting the traditional use of the resource. iii. Protecting the confidentiality of the resource. c. 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. d. Protecting the resource. (Pub. Resource Code§ 21084.3 (b). e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code§ 815.3 (c). f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code§ 5097.991). CTR 3.7.4-11 Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An environmental impact report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:	

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2 b. b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process. c. c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d), and the tribe failed to request consultation within 30 days. (Pub. Resources Code§ 21082.3 (d). All mitigation measures will be included in project-level analysis, as appropriate. The implementing agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. MCAG will be provided with documentation indicating compliance with mitigation measures. Implementation of the following mitigation measures for tribal cultural resources is recommended to reduce impacts to a less-than-significant level. Implementing agencies will require the following measures as part of the individual transportation improvement project or future land use development review process: ✓ As part of the appropriate environmental review of individual projects, the project implementation agencies will identify potential impacts to tribal cultural resources, considering requirements set forth in AB 52 and SB 18, as well as the NAHC's recommendations for conducting cultural resources assessments noted above in items 1 through 11. ✓ As part of the appropriate environmental review of individual projects, the implementing agencies will consult with the NAHC and affected Native American Tribes to determine whether any known sacred sites are within the project area and to identify the Native American(s) to contact for information about the project site.	
ENERGY AND ENERGY CONSERVATION		
EN 3.8.1 Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	EN 3.8.1-1 Implementing agencies shall review energy impacts as part of any CEQA-required project-level environmental analysis and specify appropriate mitigation measures for any identified energy impacts. EN 3.8.1-2 During the design and approval of transportation improvements and future land use development projects, the following energy efficiency measures shall be incorporated when applicable: The design or purchase of any lighting fixtures shall achieve energy reductions beyond an estimated baseline energy use for such lighting. LED technology shall be used for all new or replaced traffic lights, rail signals, and other new development lighting features compatible with LED technology. EN 3.8.1-3 Implementing agencies should consider various best practices and technological improvements that can reduce the consumption of fossil fuels, such as: ✓ Expanding light-duty vehicle retirement programs. ✓ Increasing commercial vehicle fleet modernization. ✓ Implementing driver training modules on fuel consumption. ✓ Replacing gasoline-powered mowers with electric mowers. ✓ Reducing idling from construction equipment. ✓ Incentivizing alternative fuel vehicles and equipment.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on energy and energy resources, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

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	✓ Developing infrastructure for alternative-fueled vehicles. ✓ Implementing truck idling rules, devices, and truck-stop electrification. ✓ Requiring electric truck refrigerator units. ✓ Reducing locomotives fuel use. ✓ Modernizing older off-road engines and equipment. ✓ Encouraging freight mode shift. ✓ Limit use and develop fleet rules for construction equipment. ✓ Requiring zero-emission forklifts. EN 3.8.1-4 Implementing agencies should include energy analyses in environmental documentation and general plans with the goal of conserving energy through the wise and efficient use of energy. For any identified energy impacts, appropriate mitigation measures should be developed and monitored. MCAG recommends using Appendix F, Energy Conservation, of the CEQA Guidelines. EN 3.8.1-5 Project and land use development implementing agencies should streamline permitting and provide public information to facilitate accelerated construction of solar and wind power. EN 3.8.1-6 Project and land use development implementing agencies should adopt a "Green Building Program" to promote green building standards. Green buildings can reduce local environmental impacts, regional air pollutant emissions, and global greenhouse gas emissions. Green building standards cover everything from energy efficiency and the use of renewable resources to reduced waste generation and water use. For example, water-related energy use in 2017 consumed 20 percent of the state's electricity. The residential sector accounts for 48 percent of both the electricity and natural gas consumption associated with urban water use. While interest in green buildings has been growing for some time, cost has been a major consideration, as energy-efficient building components and systems may require higher upfront investment. Initial costs can be a hurdle even when the installed systems will save money over the life of the building. Energy efficiency measures can reduce initial costs, for example, by reducing the need for oversized air conditioners to keep buildings comfortable. Undertaking a more comprehensive design approach to building sustainability can also save initial costs through the reuse of building materials and other means. EN 3.8.1-7 Where identified, local governments should alter zoning to improve jobs/housing balance, create communities where people live closer to work, and bike, walk, and take transit as a substitute for personal auto travel, consistent with and in support of the SCS. Creating walkable, transit-oriented modes would generally reduce energy use and greenhouse gas emissions. Residential energy use (electricity and natural gas) accounts for less than 10 percent of California's greenhouse gas emissions. Furthermore, studies have shown that the type of housing (such as multi-family housing) and the size of a house are strongly related to residential energy use. Residents of single-family detached housing consume over 20 percent more primary energy than those of multifamily housing and 9 percent more than those of single-family attached housing. EN 3.8.1-8 Project and land use development implementing agencies should increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in publicly owned vehicles, as well as those owned by franchisees of these agencies, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers.	

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	EN 3.8.1-9 Bid solicitations for construction of projects should preference the use of alternative formulations of cement and asphalt with reduced GHG emissions to the extent that such cement and asphalt formulations are available at a reasonable cost in the marketplace. Solicitations should also preference the recycling of construction waste and debris if market conditions permit. EN 3.8.1-10 All mitigation measures listed in Chapter 3, Section 3.6 (Climate Change) of this EIR are incorporated by reference and shall be implemented by implementing agencies to address energy conservation impacts.	
EN 3.8.2 Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	EN 3.8.2-1 See Mitigation Measures for Impact 3.8.1.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce conflicts with, or obstruction of, a state or local plan for renewable energy or energy efficiency, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
GEOLOGY/SOILS/MINERAL RESOURCES		
GSM 3.9.1 Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death.	GSM 3.9.1-1 Implementing agencies will be responsible for ensuring that transportation improvement projects and future land use development projects are built to the seismic standards contained in the most recent edition of the Uniform Building Code (UBC). GSM 3.9.1-2 Implementing agencies will ensure that transportation improvement projects and future land use development projects located within or across active fault zones comply with design requirements, published by the CGS, as well as local, regional, state, and federal design criteria for construction of projects in seismic areas. GSM 3.9.1-3 Implementing agencies will guarantee that geotechnical analysis is conducted within construction areas to establish soil types and local faulting prior to the construction of transportation improvements, and future land use developments are subject to geotechnical analysis.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce damage to transportation infrastructure and other land use development structures from seismic activity, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
GSM 3.9.2 Result in substantial soil erosion or the loss of topsoil.	GSM 3.9.2-1 Implementing agencies will ensure that individual transportation improvement projects and future land use developments provide adequate slope drainage and appropriate landscaping to minimize the occurrence of slope instability and erosion. GSM 3.9.2-2 Transportation improvement project and future land use development design features will include measures to reduce erosion from stormwater. GSM 3.9.2-3 Road cuts will be designed to maximize the potential for revegetation. GSM 3.9.2-4 Implementing agencies will ensure that transportation improvement projects and future land use developments avoid landslide areas and potentially unstable slopes wherever feasible.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce slope failures and erosion caused by project construction, such impacts are likely to remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	GSM 3.9.2-5 Where practicable, transportation improvement projects and future land use development designs that would permanently alter unique geologic features will be avoided.	
GSM 3.9.3 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.	GSM 3.9.3-1 Implementing agencies will ensure that geotechnical investigations are conducted by a qualified geologist to identify the potential for subsidence and expansive soils. GSM 3.9.3-2 Implementing agencies should take corrective measures, such as structural reinforcement and replacing soil with engineered fill, which will be implemented in individual transportation improvement projects and future land use development site designs, where applicable. GSM 3.9.3-3 Implementing agencies will ensure that, prior to preparing individual transportation improvement projects and future land use development site designs, new and abandoned wells are identified within construction areas to ensure the stability of nearby soils.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area.
GSM 3.9.4 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.	GSM 3.9.4-1 Implementing agencies will ensure that geotechnical investigations are conducted by a qualified geologist to identify the potential for subsidence and expansive soils. GSM 3.9.4-2 Implementing agencies should take corrective measures, such as structural reinforcement and replacing soil with engineered fill, which will be implemented in individual transportation improvement projects and future land use development site designs, where applicable. GSM 3.9.4-3 Implementing agencies will ensure that, prior to preparing individual transportation improvement projects and future land use development site designs, new and abandoned wells are identified within construction areas to ensure the stability of nearby soils	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce impacts on property and public safety from expansive soils, it is likely that such impacts will remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
GSM 3.9.5 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.	GSM 3.9.5-1 Implementing agencies shall conduct a geotechnical investigation, and a geotechnical report shall be prepared. The geotechnical report shall include a quantitative analysis to determine whether the on-site soils are suitable for an on-site wastewater treatment system. If it is determined that the soil cannot support a conventional on-site treatment system, non-conventional systems shall be analyzed. In many cases, these systems can reduce wastewater impacts from significant to less-than-significant levels. Implementation of these measures would reduce the importance of soils that cannot support traditional septic systems in areas where sewers are unavailable for wastewater disposal. In some cases, it will not be feasible to provide alternative wastewater disposal systems due to space constraints, lack of a service provider, and/or cost. Implementation and enforcement of conventional and non-conventional system measures would be within the responsibility and jurisdiction of the implementing agencies. For these reasons, the impacts of wastewater disposal would remain significant.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction for determining whether on-site soils are suitable for an on-site wastewater treatment system, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
GSM 3.9.7 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	GSM 3.9.7-1 The implementing agency should protect against the loss of availability of a locally important mineral resource recovery site through policies incorporated into general plans, specific plans, and other land use plans. Such policies would protect mineral resource production and extraction activities.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce 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, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
		project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
GSM 3.9.6 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.	GSM 3.9.6-1 The implementing agency should protect against the loss of availability of a designated mineral resource through identification of locations with designated mineral resources and adoption and implementation of policies to conserve land that is most suitable for mineral resource extraction from development of incompatible uses. GSM 3.9.6-2 Where possible, transportation improvement projects and future land use development sites will be designed by responsible agencies to limit potential impacts on mineral resource lands.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce mineral resource impacts, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
GSM 3.9.8 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.	GSM 3.9.8-1 The implementing agency should protect against the loss of availability of a locally important mineral resource recovery site through policies incorporated into general plans, specific plans, and other land use plans. Such policies would protect mineral resource production and extraction activities.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce 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, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
HAZARDS AND HAZARDOUS MATERIALS		
HM 3.10.1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	HM 3.10.1-1 The implementation agency and project sponsors shall comply with all applicable laws, regulations, and health and safety standards set forth by federal, state, and local authorities that regulate the proper handling of such materials and their containers to the routine transport, use, and disposal of hazardous materials does not create a significant hazard to the public or the environment.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the creation of significant hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials, such impacts may remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
HM 3.10.2 Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident	HM 3.10.2-1 Implementing agencies shall encourage the USDOT, the Office of Emergency Services, and Caltrans to continue to conduct driver safety training programs and encourage the private sector to continue conducting driver safety training.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and

TABLE 1-1

Impact(s)	Mitigation Measure (s)	Significance after Mitigation
conditions involving the release of hazardous materials into the environment.	HM 3.10.2-2 Implementing agencies shall encourage the USDOT and the CHP to continue to enforce speed limits and existing regulations governing goods movement and hazardous materials transportation. HM 3.10.2-3 The implementing agencies and project sponsors shall comply with all applicable laws, regulations, and health and safety standards set forth by federal, state, and local authorities that regulate the proper handling of such materials and their containers to the routine transport, use, and disposal of hazardous materials does not create a significant hazard to the public or the environment.	monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the creation of 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, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
HM 3.10.3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	HM 3.10.3-1 The implementing agencies shall comply with all applicable laws, regulations, and health and safety standards set forth by federal, state, and local authorities that regulate the proper handling of such materials and their containers, so that the routine transport, use, and disposal of hazardous materials does not create a significant hazard to the public or the environment.	The mitigation measure would ensure appropriate steps are taken to minimize any hazard to the public or the environment. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce emissions of hazardous materials within one-quarter mile of a school, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
HM 3.10.4 Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or environment.	HM 3.10.4-1 Prior to approval of any improvement project or future land use development project, the project implementation agency shall consult all known databases of contaminated sites and undertake a standard Phase 1 Environmental Site Assessment in the process of planning, environmental clearance, and construction for projects included in the 2026 RTP/SCS. If contamination is found, the implementing agency shall coordinate clean-up and/or maintenance activities. HM 3.10.4-2 Where contaminated sites are identified, the project implementation agency shall develop appropriate mitigation measures to assure that worker and public exposure is minimized to an acceptable level and to prevent any further environmental contamination as a result of construction. HM 3.10.4-3 Local agencies should contact the Chevron Environmental Management Company (CEMC) to determine whether an improvement or future land use development project may be in the vicinity of the Tidewater Oil Company or Standard Oil Company historical pipeline alignments.	The mitigation measure would ensure that contaminated properties are identified and that appropriate steps are taken to minimize human exposure and prevent further environmental contamination. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce disturbance to contaminated property during the construction of new transportation or future land use developments, or the expansion of existing transportation facilities or land use developments, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
HM 3.10.5 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	HM 3.10.5-1 Implementing agencies should comply with ALUC plans as a part of their land use approval authority through policies incorporated into general plans, specific plans, and other land use plans. Such policies would provide protection 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, and would result in a safety hazard for people residing or working in the project area.	If implementing agencies adopt this mitigation measure, impacts resulting in 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, that result in a safety hazard for people residing or working in the project area would be reduced to less than a significant level. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
people residing or working in the project area.		jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce safety hazards for people residing or working in the project area 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, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
HM 3.10.6 Impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	HM 3.10.6-1 Implementing agencies should adhere to all emergency plans as a part of their land use approval authority through policies incorporated into general plans, specific plans, and other land use plans. Such policies would provide protection for a project that impairs the implementation of, or physically interferes with, an adopted emergency response or evacuation plan.	If implementing agencies adopt this mitigation measure, impacts that result in a project impairing the implementation of, or physically interfering with, an adopted emergency response or evacuation plan would be reduced to a less-than-significant level. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impaired implementation of, or physical interference with, an adopted emergency response or evacuation plan, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
HYDROLOGY AND WATER QUALITY		
HW 3.11.1 Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.	HW 3.11.1-1 Improvement projects and new development will include upgrades to storm water drainage facilities to accommodate increased runoff volumes. These upgrades may include the construction of detention basins or other structures that delay peak flows and reduce flow velocity. HW 3.11.1-2 Transportation network improvements and future land use developments will comply with local, state, and federal floodplain regulations. Proposed transportation improvements and applicable new developments will be engineered by responsible agencies to accommodate storm drainage flow. HW 3.11.1-3 Responsible agencies should ensure that operational best management practices for street cleaning, litter control, and catch basin cleaning are provided to prevent water quality degradation. Responsible agencies implementing projects requiring continuous water removal facilities should provide monitoring systems, including long-term administrative procedures, to ensure proper operation throughout the life of the Project. HW 3.11.1-4 Responsible agencies should ensure that new facilities include water quality control features such as drainage channels, detention basins, and vegetated buffers to prevent pollution of adjacent water resources by runoff.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce violations of the Regional Water Quality Control Board water quality standards or waste discharge requirements, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
HW 3.11.2 Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	HW 3.11.2-1 Transportation network improvements and future land use developments will comply with local, state, and federal floodplain regulations. Proposed transportation improvements and applicable new developments will be engineered by responsible agencies to accommodate storm drainage flow. Responsible agencies should ensure that operational best management practices for street cleaning, litter control, and catch basin cleaning are provided to prevent water quality degradation. Responsible agencies implementing projects requiring continuous water removal facilities should provide monitoring systems, including long-term administrative procedures, to ensure proper operation throughout the life of the Project. HW 3.11.2-2 Local agencies shall form Groundwater Sustainability Agencies (GSAs) in accordance with the collection of State legislation [AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley)] known as the Sustainable Groundwater Management Act (SGMA), as applicable, to manage high and medium priority basin sustainably and requires those GSAs to adopt Groundwater Sustainability Plans (GSPs) for crucial groundwater basins in California.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on groundwater supplies or recharge activities, such impacts are likely to remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.
HW 3.11.3 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: i) result in a substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows.	HW 3.11.3-1 Prior to construction within the vicinity of a watercourse, the project sponsor can and should obtain all necessary regulatory permits and authorizations from the U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW), California Coastal Commission, and local jurisdictions, and should comply with all conditions issued by applicable agencies. Required permit approvals and certifications may include, but not be limited to, the following: ✓ U.S. Army Corps of Engineers (Corps): Section 404. Permit approval from the Corps should be obtained for the placement of dredge or fill material in Waters of the U.S., if any, within the interior of the project site, pursuant to Section 404 of the federal Clean Water Act. ✓ Regional Water Quality Control Board (RWQCB): Section 401 Water Quality Certification. Certification that the project will not violate state water quality standards is required before the Corps can issue a 404 permit, above. ✓ California Department of Fish and Wildlife (CDFW): Section 1602 Lake and Streambed Alteration Agreement. Work that will alter the bed or bank of a stream requires authorization from CDFW. ✓ A qualified environmental consultant can and should be retained and paid for by the project sponsor to make site visits as necessary, and as a follow-up, submit to the Lead Agency a letter certifying that all required conditions have been instituted during the grading activities. HW 3.11.3-2 Project sponsors can and should comply with the State-wide construction storm water discharge permit requirements, including preparation of Storm Water Pollution Prevention Plans for transportation improvement construction projects. Roadway construction projects can and should comply with the Caltrans stormwater discharge permit. BMPs can and should be identified and implemented to manage site erosion, wash water runoff, and spill control. HW 3.11.3-3 Project sponsors can and should implement BMPs to reduce erosion, sedimentation, and water quality impacts during construction to the maximum extent practicable. Plans demonstrating BMPs should be submitted to the lead agency for review and approval. At a minimum, the project sponsor can and should provide filter materials deemed acceptable to the lead agency at nearby catch basins to prevent any debris and dirt from flowing into the local storm drain system and creeks.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on existing drainage patterns, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	HW 3.11.3-4 Project sponsors can and should submit an erosion and sedimentation control plan for review and approval by the appropriate government agency. All work should incorporate all applicable BMPs for the construction industry, including BMPs for dust, erosion, and water quality. The measures should include, but are not limited to, the following: ✓ On sloped properties, the downhill end of the construction area must be protected with silt fencing (such as sandbags, filter fabric, silt curtains, etc.) and hay bales oriented parallel to the contours of the slope (at a constant elevation) to prevent erosion into the street, gutters, and storm drains. ✓ In accordance with an approved erosion control plan, the project sponsor should implement mechanical and vegetative measures to reduce erosion and sedimentation, including appropriate seasonal maintenance. One hundred percent (100%) degradable erosion-control fabric should be installed on all graded slopes to protect and stabilize them during construction and prior to the establishment of permanent vegetation. All graded areas should be temporarily protected from erosion by seeding with fast-growing annual species. All bare slopes must be covered with staked tarps when rain is occurring or is expected. ✓ Minimize the removal of natural vegetation or ground cover from the site to reduce the potential for erosion and sedimentation. Maximize the replanting of the area with native vegetation as soon as possible. ✓ Install filter materials acceptable to the appropriate agency at the storm drain inlets nearest to the project site prior to the start of the wet weather season; site dewatering activities; street washing activities; saw cutting asphalt or concrete; and to retain any debris flowing into the storm drain system. ✓ Filter materials should be maintained and/or replaced as necessary to ensure effectiveness and prevent street flooding. ✓ Ensure that concrete/granite supply trucks or concrete/plaster finishing operations do not discharge wash water into water courses, street gutters, or storm drains. Direct and locate tool and equipment cleaning so that wash water does not discharge onto the street, into gutters, or into storm drains. ✓ Create a contained and covered area on the site for storage of bags of cement, paints, flammables, oils, fertilizers, pesticides, or any other materials used on the project site that have the potential to be discharged to the storm drain system by wind or in the event of a material spill. No hazardous waste material should be stored on-site. ✓ Gather all construction debris regularly and place it in a dumpster or other container that is emptied or removed weekly (or at another interval approved by the lead agency). When appropriate, use tarps on the ground to collect fallen debris or splatters that could contribute to stormwater pollution. ✓ Remove all dirt, gravel, refuse, and green waste from the sidewalk, street pavement, and storm drain system adjoining the project site. During wet weather, avoid driving vehicles off paved areas and other outdoor work. ✓ As appropriate, broom-sweep the street pavement adjoining the project site daily. Caked-on mud or dirt should be scraped from these areas before sweeping. At the end of each workday, the entire site must be cleaned and secured against potential erosion, dumping, or discharge to the street, gutter, and/or storm drains. ✓ All erosion and sedimentation control measures implemented during construction activities, as well as construction site and materials management, should be in strict accordance with the control standards listed in the latest edition of the Erosion and Sediment Control Field Manual published by the RWQCB.	

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	✓ All erosion and sedimentation control measures should be monitored regularly by the project sponsor. If the measures are insufficient to control sedimentation and erosion, the project sponsor should immediately develop and implement additional, more effective measures. HW 3.11.3-5 Prior to construction, and when a potential drainage issue is known, a drainage study should be conducted by responsible agencies for new capacity-increasing projects and new land use developments, where applicable. Drainage systems should be designed to maximize the use of detention basins, vegetated areas, and velocity dissipaters to reduce peak flows where possible. Transportation and new development improvements will comply with federal, state, and local regulations regarding stormwater management. State-owned freeways must comply with the Storm Water Discharge NPDES permit for Caltrans facilities. HW 3.11.3-6 Responsible agencies should ensure that new facilities include water quality control features such as drainage channels, detention basins, and vegetated buffers to prevent pollution of adjacent water resources by runoff. HW 3.11.3-7 Project sponsors can and should ensure that new facilities include structural water quality control features such as drainage channels, detention basins, oil and grease traps, filter systems, and vegetated buffers to prevent pollution of adjacent water resources by polluted runoff where required by applicable urban storm water runoff discharge permits. HW 3.11.3-8 Drainage of roadway runoff can and should comply with Caltrans' storm water discharge permit. Wherever possible, roadways can and should be designed to convey storm water through vegetated median strips that provide detention capacity and allow for infiltration before reaching culverts. HW 3.11.3-9 Project sponsors can and should ensure projects mitigate for changes to the volume of runoff, where any downstream receiving water body has not been designed and maintained to accommodate the increase in flow velocity, rate, and volume without impacting the water's beneficial uses. Pre-project flow velocities, rates, and volumes must not be exceeded. This applies not only to increases in stormwater runoff from the project site but also to hydrologic changes induced by floodplain encroachment. Projects should not cause or contribute to conditions that degrade the physical integrity or ecological function of any downstream receiving waters. HW 3.11.3-10 Impacts can and should be reduced to the extent possible by providing culverts and facilities that do not increase the flow velocity, rate, or volume, and/or acquiring sufficient storm drain easements that accommodate an appropriately vegetated earthen drainage channel. HW 3.11.3-11 Project sponsors of improvement projects on existing facilities can and should include upgrades to stormwater drainage facilities to accommodate any increased runoff volumes. These upgrades may include constructing detention basins or structures that delay peak flows and reduce flow velocities, as well as expanding and restoring wetlands and riparian buffer areas. System designs can and should be completed to eliminate increases in peak flow rates from current levels.	

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	HW 3.11.3-12 Local jurisdictions can and should encourage Low Impact Development and incorporation of natural spaces that reduce, treat, infiltrate, and manage stormwater runoff flows in all new developments, where practical and feasible. HW 3.11.3-13 Prior to construction, and when a potential drainage issue is known, a drainage study should be conducted by responsible agencies for new capacity-increasing projects and new land use developments, where applicable. Drainage systems should be designed to maximize the use of detention basins, vegetated areas, and velocity dissipaters to reduce peak flows where possible. HW 3.11.3-14 Transportation and new development improvements will comply with federal, state, and local regulations regarding stormwater management. State-owned freeways must comply with the Storm Water Discharge NPDES permit for Caltrans facilities HW 3.11.3-15 Responsible agencies should ensure that new facilities include water quality control features such as drainage channels, detention basins, and vegetated buffers to prevent pollution of adjacent water resources by runoff. HW 3.11.3-16 Letters of Map Revision (LOMR) will be prepared and submitted to FEMA (when applicable) by responsible agencies where construction would occur within 100-year floodplains. The LOMR will include revised local base flood elevations for projects constructed within flood-prone areas. HW 3.11.3-17 MCAG will encourage implementing and local agencies to the extent feasible and appropriate, to prevent development in flood hazard areas that do not have appropriate protections. HW 3.11.3-18 MCAG will encourage implementing and local agencies to conduct or require project-specific hydrology studies for projects proposed to be constructed within floodplains to demonstrate compliance with applicable federal, state, and local agency flood-control regulations. These studies should identify project design features or mitigation measures that reduce impacts on floodplains or flood flows, ensuring the project is consistent with federal, state, and local regulations and laws governing development in the floodplain.	
HW 3.11.4 In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.	HW 3.11.4-1 Improvement projects along existing facilities and future land use developments will include upgrades to stormwater drainage facilities to accommodate increased runoff volumes. These upgrades may include the construction of detention basins or other structures that delay peak flows and reduce flow velocity.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the potential for substantial water quality degradation, such impacts may remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.
HW 3.11.5 Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	Not required.	Not applicable.

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
LAND USE, PLANNING AND RECREATION		
LPR 3.12.1 Physically divide an established community.	LPR 3.12.1-1 Individual transportation and future land use development projects will be consistent with local transportation system and land use plans and policies that designate areas for urban land use and transportation improvements, as identified by the agency with jurisdiction over said land(s). LPR 3.12.1-2 Prior to final approval of each individual transportation improvement project and future land use development project, the implementing agency will conduct the appropriate transportation improvement project-specific and future land use development-specific environmental review, to address impacts from land use and transportation system projects that may physically divide a community.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts that may physically divide a community, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
LPR 3.12.2 Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the projects (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	LPR 3.12.2-1 Individual transportation and future land use development projects will be consistent with local land use plans and policies that designate areas for urban and rural land use and preserve recreational, open space, and other lands. LPR 3.12.2-2 Prior to final approval of each individual improvement project and future land use development project, the implementing agency will conduct the appropriate transportation improvement project-specific and future land use development-specific environmental review, including consideration of potential land use impacts.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce land use impacts, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
LPR 3.12.3 Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.	LPR 3.12.3-1 Consult with federal, state, and/or local agencies that handle the administration of HCPs and NCCPs. LPR 3.12.3-2 When feasible, the project will be designed in such a way that lands preserved under HCPs or NCCPs are avoided. LPR 3.12.3-3 Sufficient conservation measures to fulfill the HCPs or NCCPs requirements should be taken when avoidance is determined to be infeasible.	The responsibility to mitigate siltation impacts rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. Implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce conflicts with any HCPs, NCCPs, and other approved conservation plans. It is anticipated that the Projects presented in the RTP/SCS will be required to comply with existing conservation plans, and that the listed mitigation measures will be sufficient to ensure impacts remain below a significant level.
LPR 3.12.4 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.	LPR 3.12.4-1 Reference Mitigation Measures for Impacts LPR 3.12.2-1 and -2.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce land use impacts, it is likely that such impacts will remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
LPR 3.12.5 Does the project include recreational facilities or require the	LPR 3.12.5-1 Reference Mitigation Measures for Impacts LPR 3.12.2-1 and -2.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
construction or expansion of recreational facilities which might have an adverse physical effect on the environment.		transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce land use impacts, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
NOISE		
N 3.13.1 Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	N 3.13.1-1 As part of the implementing agency's appropriate environmental review of each project, a project-specific noise evaluation shall be conducted, and appropriate mitigation identified and implemented. N 3.13.1-2 Implementing agencies should employ, where their jurisdictional authority permits, land use planning measures, such as zoning, restrictions on development, site design, and use of buffers to ensure that future development is compatible with adjacent transportation facilities and other noise-generating land uses. N 3.13.1-3 Implementing agencies shall, to the extent feasible and practicable, maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other future noise-generating facilities. N 3.13.1-4 Implementing agencies should construct sound-reducing barriers between noise sources and noise-sensitive land uses. Sound barriers can take the form of earth berms or sound walls. Constructing roadways so that they are appropriate and feasible, depressed below grade relative to existing sensitive land uses, also creates an effective barrier between the roadway and sensitive receptors. N 3.13.1-5 Implementing agencies shall, to the extent feasible and practicable, improve the acoustical insulation of dwelling units where setbacks and sound barriers do not sufficiently reduce noise. N 3.13.1-6 Implementing agencies shall implement, to the extent feasible and practicable, speed limits and limits on hours of operation of rail and transit systems, where such limits may reduce noise impacts. N 3.13.1-7 Passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations should be located away from sensitive receptors.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
N 3.13.2 Generation of excessive groundborne vibration or groundborne noise levels.	N 3.13.2-1 Mitigation measures identified to address Impact 3.13.1 shall be applied to address impacts associated with Impact 3.13.2.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible.

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
		Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
N 3.13.3 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.	N 3.13.3-1 Compliance with Occupational Safety and Health Administration's (OSHA) hearing conservation amendment. The Permissible Exposure Level (PEL) is defined as an 8-hour time-weighted average sound level of 90 dBA integrating all sound levels from at least 90 dBA to at least 140 dBA. Project implementing agencies will comply with all local sound control and noise level rules, regulations, and ordinances.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
POPULATION, HOUSING AND EMPLOYMENT		
PHE 3.14.1 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).	PHE 3.14.1-1 - Local agencies will be encouraged to update general, area, community, and specific plans to reflect projects included in the 2026 RTP and future land use allocations reflected in the SCS.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on Regional Growth and Dispersion, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
PHE 3.14.2 Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.	PHE 3.14.2-1 Local agencies will be encouraged to update general, area, community, and specific plans to reflect projects included in the 2026 RTP and future land use allocations reflected in the SCS. PHE 3.14.2-2 For projects with the potential to displace homes or businesses, project and future development implementation agencies will evaluate alternate route alignments and transportation facilities that minimize the displacement of homes and businesses. An iterative design and impact analysis would be helpful where impacts on persons or businesses are involved. Potential impacts will be minimized to the extent feasible. PHE 3.14.2-3 Project implementation agencies should identify businesses and residences to be displaced. As required by law, relocation and assistance will be provided to displaced residents and businesses, in accordance with the federal Uniform Relocation and Real Property Acquisition Policies Act of 1970 and the State of , as well as any applicable City and County policies. PHE 3.14.2-4 Project implementation agencies will develop a construction schedule that minimizes potential neighborhood deterioration from protracted waiting periods.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts related to community displacement, such impacts are likely to remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
PHE 3.14.3 Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.	PHE 3.14.3-1 Project implementation agencies will design new transportation facilities that protect access to existing community facilities. During the design phase of the individual improvement project, community amenities and facilities should be identified, and access to them should be considered. PHE 3.14.3-2 Project implementation agencies will design roadway improvements in a manner that minimizes barriers to pedestrians and bicyclists. During the design phase, pedestrian and bicycle routes will be determined to enable easy connections to nearby community facilities, so as not to divide the communities.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts that could disrupt or divide communities, such impacts are likely to remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.
PUBLIC UTILITIES, OTHER UTILITIES AND SERVICES SYSTEMS		
PU 3.15.1 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.	PU 3.15.1-1 Prior to construction, the project implementation agency will ensure that all necessary local and state permits are obtained. The project implementation agency will also comply with all applicable conditions of approval. As deemed necessary by the governing jurisdiction, road encroachment permits may require the contractor to prepare a traffic control plan in accordance with professional engineering standards prior to construction. Traffic control plans should include the following requirements: ✓ Identify all roadway locations where special construction techniques (e.g., directional drilling or night construction) would be used to minimize impacts to traffic flow. ✓ Develop circulation and detour plans to minimize impacts to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone. ✓ Schedule truck trips outside of peak morning and evening commute hours. ✓ Limit lane closures during peak hours to the extent possible. ✓ Use haul routes to minimize truck traffic on local roadways, to the extent possible. ✓ Include detours for bicycles and pedestrians in all areas that may be affected by the construction of individual improvement projects. ✓ Install traffic control devices as specified in the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones. ✓ Develop and implement access plans for highly sensitive land uses such as police and fire stations, transit stations, hospitals, and schools. Access plans will be developed with the facility owner or administrator. To minimize disruption to emergency vehicle access, affected jurisdictions will be asked to identify detours for emergency vehicles, which the contractor will then post. The facility owner or operator will be notified in advance of the timing, location, and duration of construction activities, as well as the locations of detours and lane closures. ✓ Store construction materials only in designated areas. ✓ Coordinate with local transit agencies to temporarily reroute or relocate bus stops in work zones, as necessary. PU 3.15.1-2 Transportation and future land use development projects requiring police protection, fire service, and emergency medical service will coordinate with the local fire department and police department to ensure that the existing public services and utilities will be able to handle the increase in demand for their services. If the current levels of service at the individual improvement project or future land use development site are	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on public services, such impacts are likely to remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	found to be inadequate, infrastructure improvements and personnel requirements for the appropriate public service will be identified in each individual improvement project's CEQA documentation. PU 3.15.1-3 The growth-inducing potential of individual transportation and future land use development projects will be carefully evaluated so that the full implications of the 2026 RTP/SCS are understood. Individual environmental documents will quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities. Lead and responsible agencies should then make any necessary adjustments to the applicable general plan. PU 3.15.1-4 As part of a transportation project-specific or future land use development project-specific environmental review, implementing agencies will evaluate the impacts resulting from the potential for severing underground utility lines during construction activities. Appropriate mitigation measures will be identified for all impacts. The implementing agencies will be responsible for ensuring adherence to mitigation measures. MCAG will be provided with documentation indicating compliance with mitigation measures. PU 3.15.1-5 Prior to construction, the implementing agency or contractor will identify the locations of existing utility lines. All known utility lines will be avoided during construction.	
PU 3.15.2 Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	PU 3.15.2-1 During the CEQA review process for individual facilities, implementing agencies should apply necessary mitigation measures to reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or expansion should be avoided or reduced by imposing conditions to be followed by those directly involved in the activities.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified impacts on wastewater treatment, these impacts are likely to remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.
PU 3.15.3 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	PU 3.15.3-1 Projects requiring wastewater service, solid waste collection, or potable water service will coordinate with the local agencies to ensure that the existing public services and utilities will be able to handle the increase. If the current infrastructure servicing the individual transportation improvement or future land use development project sites is found to be inadequate, infrastructure improvements for the appropriate public service utility will be identified in each individual transportation improvement or future land use development project's CEQA documentation. PU 3.15.3-2 Reclaimed water will be used for landscaping purposes instead of potable water wherever feasible. P.U 3.15.3-3 Each of the proposed transportation improvement projects or future land use developments will comply with applicable regulations related to solid waste disposal. PU 3.15.3-4 The construction contractor will work with Recycling Coordinators to ensure that source reduction techniques and recycling measures are incorporated into individual transportation improvement or future land use development project construction.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on solid waste, wastewater, and potable water services, it is likely that such impacts will remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	PU 3.15.3-5 The amount of solid waste generated during construction will be estimated prior to construction, and appropriate disposal sites will be identified and utilized. PU 3.15.3.6 During the CEQA review process for individual RTP/SCS projects, implementing agencies with responsibility for the construction of new storm water drainage facilities or the expansion of existing facilities to adequately meet projected capacity needs should apply necessary mitigation measures, including actions set forth in regional watershed management plans, to avoid or reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or expansion should be avoided or reduced by imposing conditions to be followed by those directly involved in the construction or expansion activities. PU 3.15.3.7 As part of transportation project-specific and future land use development project-specific environmental review, implementing agencies will evaluate the impacts resulting from soil accumulation during construction of the transportation projects and future land use developments. Appropriate mitigation measures will be identified for all impacts. The implementing agencies will be responsible for ensuring adherence to the mitigation measures. MCAG will be provided with documentation indicating compliance with mitigation measures. PU 3.15.3.8 Implementing agencies should implement appropriate measures, such as the washing of construction vehicles' undercarriages before leaving the construction site or increasing the use of street cleaning machines, to reduce the amount of soil on local roadways as a result of construction.	
PU 3.15.4 Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.	PU 3.15.4-1 Projects requiring potable water service will coordinate with the local agencies to ensure that the existing public services and utilities will be able to handle the increase. If the current infrastructure servicing the individual transportation improvement or future land use development project sites is found to be inadequate, infrastructure improvements for the appropriate public service utility will be identified in each individual transportation improvement or future land use development project's CEQA documentation. PU 3.15.4-2 Reclaimed water will be used for landscaping purposes instead of potable water wherever feasible. PU 3.15.4-3 In January 2014, the Governor declared an emergency drought declaration for the State. Long-term water supply documents anticipate that drought (including severe single-year droughts) are regular occurrence within the State. Because the 2026 RTP/SCS does not propose or approve any development of any water demand projects, the Governor's drought declaration does not indicate that there is a significant water supply impact associated with the RTP/ SCS. PU 3.15.4-4 Local agencies shall form Groundwater Sustainability Agencies (GSAs) in accordance with the collection of State legislation [AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley)] known as the Sustainable Groundwater Management Act (SGMA), as applicable, to manage high and medium priority basin sustainably and requires those GSAs to adopt Groundwater Sustainability Plans (GSPs) for crucial groundwater basins in California.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on potable water services, such impacts may remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.
PU 3.15.5 Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has	PU 3.15.5-1 Projects requiring wastewater service will coordinate with the local agencies to ensure that the existing public services and utilities will be able to handle the increase. If the current infrastructure servicing the individual transportation improvement or future land use development project sites is found to be inadequate,	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	infrastructure improvements for the appropriate public service utility will be identified in each individual transportation improvement or future land use development project's CEQA documentation.	mitigation measures will provide the framework and direction to avoid or reduce impacts on wastewater services, such impacts are likely to remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.
PU 3.15.6 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.	PU 3.15.6-1 Projects requiring solid waste collection will coordinate with the local agencies to ensure that the existing public services and utilities will be able to handle the increase. If the current infrastructure servicing the individual transportation improvement or future land use development project sites is found to be inadequate, infrastructure improvements for the appropriate public service utility will be identified in each individual transportation improvement or future land use development project's CEQA documentation. PU 3.15.6-2 Each of the proposed transportation improvement projects or future land use developments will comply with applicable regulations related to solid waste disposal. PU 3.15.6-3 The construction contractor will work with Recycling Coordinators to ensure that source reduction techniques and recycling measures are incorporated into individual transportation improvement or future land use development project construction. Implementing agencies should address the new regulations set forth in SB 1383, finalized by CalRecycle in November 2020 and taking effect in January 2026. PU 3.15.6-4 The amount of solid waste generated during construction will be estimated prior to construction, and appropriate disposal sites will be identified and utilized.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on solid waste services, such impacts are likely to remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.
PU 3.15.7 Comply with federal, state, and local management and reduction statutes and regulations related to solid waste,	PU 3.15.7-1 Prior to construction, implementing agencies shall ensure project compliance with all applicable federal, state, and local statutes, regulations, permits, and ordinances related to solid waste management, reduction, recycling, and disposal. PU 3.15.7-2 Individual transportation improvement projects and future land use developments shall prepare and implement construction waste management practices that identify methods for source reduction, reuse, salvage, recycling, and disposal of construction and demolition debris, where feasible. PU 3.15.7-3 Implementing agencies shall coordinate with local waste management agencies and service providers to ensure consistency with applicable Countywide Integrated Waste Management Plans, Source Reduction and Recycling Elements, and local waste diversion requirements. PU 3.15.7-4 Projects shall comply with current CalRecycle regulations and applicable state waste diversion requirements, including AB 341, SB 1383, and any future amendments in effect at the time of project implementation.	The responsibility to approve land use development consistent with the general plans and the SCS rests with local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, local jurisdictions, and other agencies with jurisdiction over project areas. Implementation and monitoring of the above mitigation measures would provide the framework and direction necessary to ensure compliance with applicable federal, state, and local statutes and regulations related to solid waste management and reduction. Because implementing agencies would be required to comply with existing regulatory requirements and incorporate project-specific mitigation measures, impacts associated with compliance with solid waste regulations would be reduced to a less-than-significant level.
SOCIAL AND ECONOMIC EFFECTS		
SE 3.16.1 Construction impacts on minority and low-income populations.	Impact is considered less-than-significant; no mitigation is required.	Not applicable.

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
SE 3.16.2 Operational impacts on low-income and minority populations.	Impact is considered less-than-significant; no mitigation is required.	Not applicable.
TRANSPORTATION		
TT 3.17.1 Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	Not applicable.	Not applicable.
TT 3.17.2 Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).	TT 3.17.2-1 Measures intended to reduce VMT and reduce VHT or congestion levels are part of the RTP/SCS. These include: increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation, maximizing the benefits of the land use/transportation connection through increased densities, other Travel Demand Management measures described in the RTP and in local agency General Plans, and key transportation investments (such as expanding microtransit service and streamlining and increasing frequencies of bus transit service) targeted to reduce congestion levels and improve LOS. TT 3.17.2-2 MCAG will continue to secure funding programs considering a project's ability to enhance complete streets objectives where it is feasible. TT 3.17.2-3 Beyond the currently financially and institutionally feasible measures included in the 2026 RTP/SCS, MCAG will identify further reduction in VMT, and fuel consumption that could be obtained through land use strategies, additional car-sharing programs, additional vanpools, and additional bicycle/pedestrian programs. TT 3.17.2-4 Transportation Planning: MCAG will assist local jurisdictions to encourage new developments to incorporate both local and regional transit measures into the project design that promote the use of alternative modes of transportation. TT 3.17.2-5 Local jurisdictions are encouraged to promote ride-sharing programs, e.g., by designating a certain percentage of parking spaces for high-occupancy vehicles, providing larger parking spaces to accommodate vans used for ridesharing, and designating adequate passenger loading and unloading and waiting areas. TT 3.17.2-6 Local jurisdictions are encouraged to support bicycling and walking by incorporating bicycle lanes into street systems in regional transportation plans, new subdivisions, and large developments, creating bicycle lanes and walking paths directed to the location of schools and other logical points of destination and provide adequate bicycle parking, and encouraging commercial projects to include facilities on-site to encourage employees to bicycle or walk to work. TT 3.17.2-7 Transit agencies are encouraged to support bicycling to transit facilities by providing additional bicycle parking, locker facilities, and bike lane access to transit facilities when feasible. TT 3.17.2-8 Project sponsors are encouraged to build or fund a major transit stop within or near the development.	The mitigation measures would require implementing agencies to avoid or mitigate impacts to all types of transportation facilities (multi-modal). Although the VMT reduction that could be achieved by implementation of the recommended mitigation measures is unknown and would be difficult to calculate, it is clear that MCAG does not have land use authority, nor does it have the ability to design and construct transportation improvement projects and future land use developments included in the 2026 RTP/SCS, or require local implementing agencies to adopt the above mitigation measures. The responsibility to determine and adopt mitigation and approve land use development rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies. Therefore, for the purposes of this program-level review, the impact is considered significant and unavoidable.

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	TT 3.17.2-9 Transit agencies are encouraged to continue to provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers. TT 3.17.2-10 Local jurisdictions and project sponsors are encouraged to incorporate bicycle lanes, routes, and facilities into street systems, new subdivisions, and large developments. TT 3.17.2-11 Local jurisdictions are encouraged to require amenities for non-motorized transportation, such as secure and convenient bicycle parking. TT 3.17.2-12 Local jurisdictions are encouraged to ensure that the project enhances, and does not disrupt or create barriers to, non-motorized transportation. TT 3.17.2-13 Local jurisdictions are encouraged to connect parks and open space through shared pedestrian/bike paths and trails to encourage walking and bicycling. TT 3.17.2-14 Local jurisdictions are encouraged to create bicycle lanes and walking paths directed to the location of schools, parks, and other destination points. TT 3.17.2-15 Local jurisdictions are encouraged to work with the school districts to improve pedestrian and bike access to schools and to restore or expand school bus service using lower-emitting vehicles. TT 3.17.2-16 Local jurisdictions and transit agencies are encouraged to provide information on alternative transportation options for consumers, residents, tenants, and employees to reduce transportation-related emissions. TT 3.17.2-17 Project Selection: Local jurisdictions are encouraged to give priority to transportation projects that would contribute to a reduction in vehicle miles traveled per capita, while maintaining economic vitality and sustainability. TT 3.17.2-18 System Interconnectivity: MCAG, in coordination with local jurisdictions, is encouraged to create an interconnected transportation system that allows a shift in travel from private passenger vehicles to alternative modes, including public transit, ride sharing, car sharing, bicycling, and walking, by incorporating the following: ✓ Provide multimodal transportation centers that allow transportation modes to intersect. ✓ Provide adequate and affordable public transportation choices, including expanded bus routes and service, as well as other transit choices such as shuttles; ✓ To the extent feasible, extend service and hours of operation to underserved arterials and population centers or destinations such as colleges; ✓ Focus transit resources on high-volume corridors and high-boarding destinations such as colleges, employment centers, and regional destinations; ✓ Coordinate schedules and routes across service lines with neighboring transit authorities; ✓ Provide safe and convenient access for pedestrians and bicyclists to, across, and along major transit priority streets; ✓ Use park-and-ride facilities to access transit stations.	

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	TT 3.17.2-19 Transit System Infrastructure: Local jurisdictions are encouraged to upgrade and maintain transit system infrastructure to enhance public use, including: ✓ Provide transit stops and bus lanes that are safe, convenient, clean, and efficient; ✓ Provide transit stops that have clearly marked street-level designation, and are accessible; ✓ Provide transit stops that are safe, sheltered, with clean benches, and lighting is adequate. ✓ Place transit stations along transit corridors within mixed-use or transit-oriented development areas at intervals of three to four blocks, or no less than one-half mile. TT 3.17.2-20 Customer Service: Transit agencies are encouraged to enhance customer service and system ease-of-use, including: ✓ Continue to develop the Regional Pass system to reduce the number of different passes and tickets required of system users; ✓ Expand "Smart Bus" technology, using GPS and electronic displays at transit stops to provide customers with "real-time" arrival and departure time information (and to allow the system operator to respond more quickly and effectively to disruptions in service); ✓ Improve and maintain the online trip-planning program. Before funding transportation improvements that increase roadway capacity and VMT, evaluate the feasibility and effectiveness of funding projects that support alternative modes of transportation and reduce VMT, including transit, bicycle, and pedestrian access. TT 3.17.2-21 Local jurisdictions are encouraged to monitor traffic and congestion to determine when and where new transportation facilities are needed in order to increase access and efficiency. TT 3.17.2-22 HOV Lanes: MCAG can and should encourage Caltrans to construct high-occupancy vehicle (HOV) lanes or similar mechanisms on State Highways whenever necessary to relieve congestion and reduce emissions. TT 3.17.2-23 Ride-share Programs: MCAG will continue to support ridesharing through dibs, and local jurisdictions are encouraged to promote ride-sharing programs as well, including: Designate a certain percentage of parking spaces for ride-sharing vehicles; Designate adequate passenger loading, unloading, and waiting areas for ride-sharing vehicles; Provide a website or message board for coordinating shared rides. Hire or designate a rideshare coordinator to develop and implement ridesharing programs. TT 3.17.2-24 Employer-based Trip Reduction: Local jurisdictions are encouraged to support voluntary, employer-based trip reduction programs, including: ✓ Provide assistance to regional and local ridesharing organizations; ✓ Advocate for legislation to maintain and expand incentives for employer ridesharing programs; ✓ Require the development of Transportation Management Associations for large employers and commercial/ industrial complexes; ✓ Provide public recognition of effective programs through awards, top ten lists, and other mechanisms.	

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	TT 3.17.2-25 Local Area Shuttles: Transit agencies are encouraged to utilize shuttles to serve neighborhoods, employment centers, and major destinations. TT 3.17.2-26 Transit agencies are encouraged to create a free or low-cost local area bus service that includes a fixed route to popular tourist destinations or shopping and business centers. TT 3.17.2-27 Local jurisdictions are encouraged to support bicycle use as a mode of transportation by enhancing infrastructure to accommodate bicycles and riders and providing incentives. TT 3.17.2-28 Development Standards for Bicycles: Local jurisdictions are encouraged to establish standards for new development and redevelopment projects to support bicycle use, including: Amending the Development Code to include standards for safe pedestrian and bicyclist accommodations, by incorporating the following: ✓ "Complete Streets" policies that foster equal access by all users in the roadway design, wherever feasible; ✓ Bicycle and pedestrian access internally and in connection to other areas through easements; ✓ Safe access to public transportation and other non-motorized uses through the construction of dedicated paths; ✓ Safe road crossings at major intersections, especially for school children and seniors; ✓ Adequate, convenient, and secure bike parking at public and private facilities and destinations in all urban areas; ✓ Street standards will include provisions for bicycle parking within the public right of way. TT 3.17.2-29 Local jurisdictions are encouraged to incorporate bicycle facilities, as appropriate, in the new land use, including: ✓ Construction of weatherproof bicycle facilities where feasible, and at a minimum, bicycle racks or covered, secure parking near the building entrances; ✓ Encourage the development of bicycle stations at intermodal hubs; ✓ Conduct a connectivity analysis of the existing bikeway network to identify gaps and prioritize bikeway development where gaps exist. TT 3.17.2-30 Bicycle and Pedestrian Trails: Local jurisdictions are encouraged to establish a network of multi-use trails to facilitate safe and direct off-street bicycle and pedestrian travel, and will provide bike racks along these trails at secure, lighted locations. TT 3.17.2-31 Bicycle Safety Program: Local jurisdictions are encouraged to develop and implement a bicycle safety educational program to teach drivers and riders the laws, riding protocols, routes, safety tips, and emergency maneuvers. TT 3.17.2-32 Bicycle and Pedestrian Project Funding: Local jurisdictions are encouraged to pursue enhanced funding for bicycle and pedestrian facilities and access projects, including, as appropriate:	

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
	✓ Apply for regional, State, and federal grants for bicycle and pedestrian infrastructure projects; ✓ Update traffic impact fee programs to include VMT or establish new VMT mitigation fee programs to help fund future bicycle and pedestrian facilities and/or future transit infrastructure/routes. ✓ Use existing revenues, such as State gas tax subventions, sales tax funds, and general fund monies, for projects that enhance bicycle and walking use for transportation. TT 3.17.2-33 Bicycle Parking: Local jurisdictions are encouraged to adopt bicycle parking standards that ensure sufficient bicycle parking. TT 3.17.2-34 Pedestrian and Bicycle Promotion: Local jurisdictions are encouraged to work with local community groups and downtown business associations to organize and publicize walking tours and bicycle events, and to encourage pedestrian and bicycle modes of transportation. TT 3.17.2-35 Bicycle Transportation Support: Local jurisdictions are encouraged to promote and support the use of bicycles as transportation. TT 3.17.2-36 Transit Access to Municipal Facilities: Transit agencies can and should provide services to municipal facilities.	
TT 3.17.3 Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	TT 3.17.3-1 Implementing agencies should consider safety an objective in the design of RTP projects, and should plan to avoid, improve, or mitigate safety impacts in the course of project-level environmental review. TT 3.17.3-2 MCAG shall conduct a forum where policymakers can be educated and can develop consensus on regional transportation safety and security policies. TT 3.17.3-3 MCAG shall work with local officials to assist with the implementation of regional transportation safety and security policies.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts that substantially increase hazards due to a design feature or incompatible uses, such impacts may remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the identified impacts.
TT 3.17.4 Result in inadequate emergency access.	TT 3.17.4-1 MCAG shall support local agencies with the rapid repair of transportation infrastructure in the event of an emergency. This will be accomplished by MCAG, in cooperation with local and State agencies, identifying critical infrastructure needs necessary for: a) emergency responders to enter the region, b) evacuation of affected facilities, and c) restoration of utilities. In addition, MCAG shall establish transportation infrastructure practices that promote and enhance security.	The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts that result in inadequate emergency access, such impacts may remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the identified impacts.

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Impact(s)	Mitigation Measure (s)	Significance after Mitigation
WILDFIRE		
WF 3.18.1 Substantially impair an adopted emergency response plan or emergency evacuation plan.	WF 3.18.1-1 Prior to construction, implementing agencies shall coordinate with local emergency service providers, fire agencies, and affected jurisdictions regarding emergency access and evacuation requirements. WF 3.18.1-2 Traffic control plans shall be prepared for projects involving temporary lane closures or circulation changes and shall maintain emergency vehicle access and designated evacuation routes during construction activities. WF 3.18.1-3 Individual transportation improvement projects and future land use developments shall evaluate consistency with local emergency response and evacuation plans during project-level environmental review.	With the implementation of this mitigation, the risk of loss of structures and transportation infrastructure, and the risk of injury or death from wildfires, would be reduced. These measures would make structures and transportation infrastructure more fire-resistant and less vulnerable to loss in the event of wildfire. These measures would also reduce the risk that the construction of 2026 RTP/SCS projects would inadvertently ignite a wildfire. However, it is not possible to prevent a significant risk of wildfires or fully protect people and structures from the risks of wildfires, despite the implementation of mitigation. Thus, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.
WF 3.18.2 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?	WF 3.18.2-1 Individual projects within or adjacent to SRA or VHFHSZ areas shall evaluate wildfire risk during project-level environmental review. WF 3.18.2-2 Projects shall incorporate site design measures consistent with applicable fire codes, defensible space standards, vegetation management requirements, and local fire agency recommendations. WF 3.18.2-3 Projects shall coordinate with fire protection agencies regarding access requirements, emergency response needs, and wildfire risk reduction strategies. WF 3.18.2-4 Construction activities shall implement fire prevention measures, including spark arrestors, restrictions during high fire weather conditions, and emergency fire suppression equipment.	With the implementation of mitigation measures, the risk of exposing project occupants to pollutant concentrations from a wildfire or its uncontrolled spread would be reduced. However, it is not possible to eliminate the significant risk of exposing project occupants to pollutant concentrations from a wildfire or its uncontrolled spread, despite the implementation of mitigation measures. Thus, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.
WF 3.18.3 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?	WF 3.18.3-1 Individual projects requiring associated infrastructure in wildfire-prone areas shall evaluate environmental and wildfire-related impacts during project-level environmental review. WF 3.18.3-2 Infrastructure shall be designed to minimize vegetation disturbance and avoid creating unnecessary ignition risks. WF 3.18.3-3 Fuel modification and vegetation management activities shall comply with applicable local, state, and federal requirements. WF 3.18.3-4 Utility installations shall incorporate fire-resistant design features and comply with applicable utility and fire agency standards.	With the implementation of mitigation measures, the installation or maintenance of associated infrastructure that may exacerbate fire risk or result in temporary or ongoing impacts on the environment would be reduced. However, it is not possible to prevent a significant risk, despite the implementation of mitigation measures. Thus, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.
WF 3.18.4 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?	WF 3.18.4-1 Individual projects shall evaluate post-fire hazards, including flooding, erosion, debris flows, and slope instability, where project sites occur within wildfire-prone areas. WF 3.18.4-2 Geotechnical and hydrologic analyses shall be conducted where warranted to evaluate slope stability and drainage conditions. WF 3.18.4-3 Appropriate drainage, erosion control, and slope stabilization measures shall be incorporated into project design. WF 3.18.4-4 Projects shall incorporate applicable stormwater and runoff management practices to minimize post-fire flooding and erosion risks.	With the implementation of mitigation measures, the risk of exposing people or structures to significant hazards, including downslope or downstream flooding or landslides, resulting from runoff, post-fire slope instability, or drainage changes, would be reduced. However, it is not possible to eliminate the significant risk despite implementing mitigation measures. Thus, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.

2.0 INTRODUCTION / PROJECT DESCRIPTION

An EIR is required to provide a detailed project description. This description is to consist of:

- ✓ *The project's location.*
- ✓ *EIR objectives, including an underlying project purpose, characteristics, and scope.*
- ✓ *A statement of the EIR's intended uses.*

See CEQA Guidelines, Section 15124.

2.1 PURPOSE

The purpose of this Draft Program Environmental Impact Report (Draft PEIR or PEIR) is to provide local decision-makers and the public with an objective program-level analysis of the potential environmental consequences of implementation of the regional transportation system outlined in the Draft Merced County Association of Governments (MCAG) 2026 Regional Transportation Plan (RTP) and the Sustainable Communities Strategy (SCS). The 2026 RTP/SCS is incorporated by reference to this Draft PEIR and can be found at ***Regional Transportation Plan | Merced County Association of Governments, CA.*** The information presented in this document is intended to provide a program-level disclosure of the potential impacts and to increase public awareness and participation in the regional transportation planning process.

Requirement to Prepare a Program EIR

According to State CEQA Guidelines Section 15168, a Program EIR is an EIR that 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 the chain of contemplated actions.
3. In connection with the issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program.
4. As individual activities conducted under the same authorizing statutory or regulatory authority and having generally similar environmental effects, which can be mitigated in similar ways.

Use of a Program EIR can provide the following advantages. The Program EIR can:

- ✓ Provide an occasion for a more exhaustive consideration of effects and alternatives than would be practical in an EIR or an individual action.

- ✓ Ensure consideration of cumulative impacts that might be slighted in a case-by-case analysis.
- ✓ Avoid duplicative reconsideration of basic policy considerations.
- ✓ Allow the lead agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts.
- ✓ Allow reduction in paperwork.

Subsequent activities in the program must be examined against the Program EIR to determine whether an additional environmental document is required.

- ✓ If a later activity would have effects that were not examined in the Program EIR, a new Initial Study would need to be prepared, leading to either an EIR or a Negative Declaration.
- ✓ If the agency finds that pursuant to Section 15162, no new effects could occur, or no new mitigation measures would be required, the agency can approve the activity as being within the scope of the project covered by the Program EIR, and no new environmental document would be required.
- ✓ An agency shall incorporate feasible mitigation measures and alternatives developed in the Program EIR into subsequent actions in the program.
- ✓ Where the subsequent activities involve site-specific considerations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were covered in the Program EIR.
- ✓ A Program EIR will be most helpful in dealing with subsequent activities if it deals with the effects of the program as specifically and comprehensively as possible. With a thorough analysis of the program, many subsequent activities could be found to fall within the scope of the project described in the Program EIR, and no further environmental documents would be required.

A Program EIR can simplify the task of preparing environmental documents for later phases of the program. The Program EIR can:

- ✓ Provide the basis in an Initial Study for determining whether the later activity may have any significant effects.
- ✓ Be incorporated by reference to deal with regional influences, secondary effects, cumulative impacts, broad alternatives, and other factors that apply to the program as a whole.
- ✓ Focus an EIR on a subsequent project to permit discussion solely of new effects which had not been considered before.

It should be noted that the RTP transportation improvement projects and future land use development projects will be implemented by implementing agencies such as Caltrans, each of the cities, the County of Merced, transit agencies, and other agencies responsible for the construction and/or operation of

transportation facilities, land use development, and other services. For purposes of reviewing the environmental impacts associated with the MCAG 2026 RTP/SCS, this Draft PEIR has been prepared because MCAG does not have the detailed information that would be required to provide a project-level analysis regarding the transportation improvement projects identified in the RTP or the specific information regarding the specific type of land use development that will occur in each local jurisdiction between 2024 (base year), 2026 (current year), and 2049 (horizon year). The design of each transportation improvement project, as well as the sources and availability of funding, is unknown. In addition, the specific impacts on resources, such as biological resources and land use, will vary widely from project to project if (and when) they are approved. It will be the implementing agencies (referenced above) that will approve, design, and implement the transportation improvement projects referenced in the RTP/SCS and approve the individual land use developments proposed over the duration of the planning period.

These implementing agencies would be able to prepare subsequent environmental documents that incorporate by reference the appropriate information from this Program Draft EIR regarding secondary effects, cumulative impacts, project alternatives, and other relevant factors. If the lead agency for any particular implementing project finds that implementation of a later activity would have no new effects and that no new mitigation measures would be required, then that lead agency may determine that the activity would not require additional CEQA review. Where subsequent environmental review is required, such review would focus on project-specific significant effects related to the project or its site that have not been considered in this Draft PEIR.

Furthermore, MCAG lacks the detailed information needed to prepare a sub-regional analysis of the RTP/SCS. The MCAG traffic model provides a regional analysis of the existing and future transportation system, but cannot analyze specific geographic sub-regions in Merced County due to model limitations. Furthermore, MCAG uses EMFAC (Emissions Factoring Model) to prepare its air quality conformity findings and to evaluate the impacts on air quality and global warming resulting from the RTP/SCS. EMFAC is only available from the California Air Resources Board (CARB) at the “county level” or for all of Merced County, not for individual sub-regions within the County. MCAG is a planning agency responsible for the planning and programming of transportation projects included in the 2026 RTP/SCS. Finally, the 2026 RTP includes the SCS, which is intended to demonstrate how integrated land use and transportation planning can reduce greenhouse gas (GHG) emissions from autos and light trucks (see RTP Chapter 5 – Sustainable Communities Strategies).

The SCS encourages changes to the urban form that improve transit accessibility and create more compact development, thereby yielding a number of transportation benefits for the region. These include reductions in travel time, vehicle miles traveled (VMT), vehicle hours traveled (VHT), and vehicle hours of delay. Concurrently, the plan increased transit use and mode share, leading to improvements in both mobility and air quality. The SCS only shows how future growth and development could be allocated to

planned growth areas consistent with the general plans of the cities and the County of Merced. As growth and development occur, it will be the cities and the County that review and approve development proposals and determine consistency with their plans, programs, and policies, not MCAG. MCAG has no land use authority to approve future growth and development as it occurs over the life of the RTP/SCS (Year 2049).

For purposes of reviewing the environmental impacts associated with the 2026 RTP/SCS, this Draft PEIR has been prepared because MCAG cannot know all the details or have all the information it would need regarding each and every transportation improvement project identified in the RTP/SCS, or the detailed information regarding the specific type of future land use development that will occur in each local jurisdiction between 2025 (Notice of Preparation - NOP release) and the year 2049. MCAG's role as the Regional Transportation Planning Agency (RTPA) for the Merced region is to prepare a long-range RTP/SCS that reflects consistency with federal and state mandates, including SB 375. As an RTPA, MCAG does not have any land use authority. That right is held by the local agencies that comprise the MCAG Policy Board membership, which include the County of Merced and the incorporated cities within the County, commonly referred to as MCAG's "member agencies."

MCAG works in partnership with its member agencies, Caltrans, and other agencies with land use authority to plan the future transportation system, taking into account future growth estimates and potential development and land use patterns outlined in each adopted or draft general plan prepared by these agencies. Throughout this document, the term "implementing agency" refers to MCAG's partner agencies that have land use authority and/or legal standing to plan, design, implement, build, operate, and maintain transportation infrastructure, including projects referenced in the RTP/SCS. The agencies most associated with implementing transportation improvement projects and approving future land use developments, as reflected in the 2026 RTP/SCS, will be the MCAG member agencies. Caltrans, as the owner/operator of the state highway system, will also have a major role in implementing transportation improvement projects along highways throughout the Merced region. These and other implementing agencies will plan, approve, design, construct, and implement the transportation improvement projects referenced in the RTP/SCS. These agencies will also plan for, review, and approve land use developments proposed within their jurisdictions over the planning period that were considered in the development of the RTP/SCS.

This Draft PEIR is considered the "first tier" CEQA document for future second-tier CEQA documents (commonly referred to as project-level analyses) and reflects the various transportation improvement and future land use development projects represented in the 2026 RTP/SCS. The SCS only shows how future growth and development would be allocated to planned growth areas, consistent with the general plans of the cities and the County of Merced, as well as the planned transportation system. As growth and

development occur, it will be the cities and the County that review and approve development proposals and also determine consistency with their plans, programs, and policies - not MCAG.

This Draft PEIR presents a "regional" review and analysis of impacts associated with the 2026 RTP/SCS. While some transportation improvement projects are reflected in current federal and regional transportation improvement programs in the short term, the majority of projects are not defined at a level that would allow for "project-level" analysis within the next four to five years. As such, it is understood that the RTP transportation improvement projects and future land use development projects will be implemented by implementing agencies such as Caltrans, each of the six (6) cities, the County of Merced, transit agencies, and other agencies responsible for the construction and/or operation of transportation facilities, land use development, and other services.

Implementing agencies will prepare the "project-level" environmental documents for the individual transportation improvement projects and future land use developments included in or consistent with the 2026 RTP/SCS. According to Section 15161 of CEQA, a "project-level" environmental document is the most common type of EIR and examines the environmental impacts of a specific improvement project or development project. This type of EIR should focus primarily on the environmental changes resulting from the project and examine all phases, including planning, construction, and operation.

The implementing agencies would also prepare "project-level" environmental documents that incorporate by reference the appropriate information from this Draft PEIR regarding secondary effects, cumulative impacts, project alternatives, and other relevant factors. Where subsequent environmental review is required, such review would focus on project-specific significant effects related to the project or its site that have not been considered in this Draft PEIR.

2.2 PROJECT LOCATION

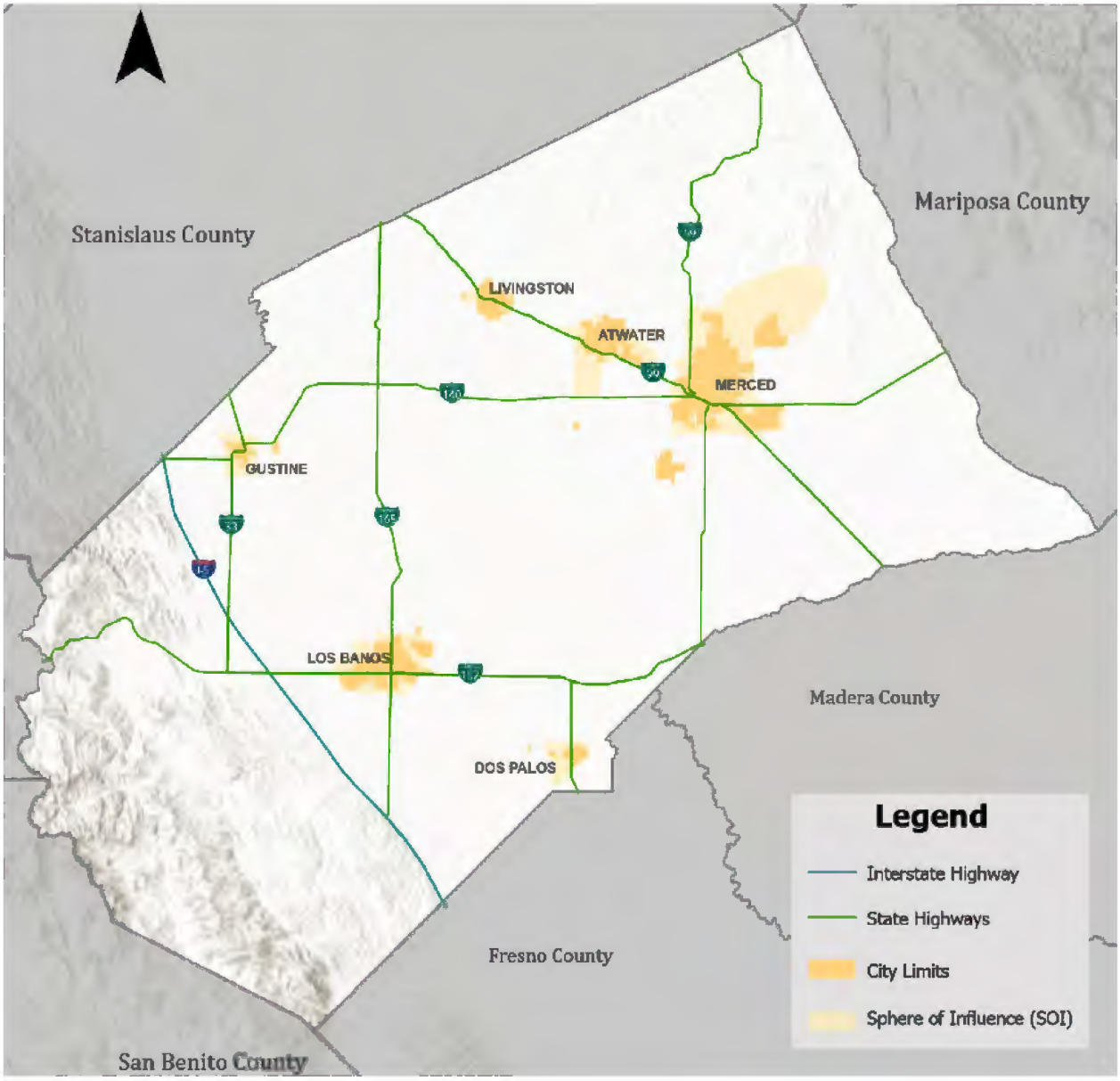
Merced County (County) is located in California's Central San Joaquin Valley (reference Figure 2-1). Figure 2.2 shows the boundaries of the Project or RTP/SCS per CEQA Guidelines Section 15124. Encompassing 1,979 square miles, the County is situated near the geographic center of the State along State Route (SR) 99, approximately 130 miles south of San Francisco. The County has an elevation range from near Merced at 163 feet above sea level to 3,801 feet in the Sierra Nevada. The population of Merced County in 2023 (EIR Base Year) was approximately 285,193. The current population in 2026 is 292,111.

FIGURE 2-1
Location of Merced County in California



Source: VRPA Technologies

FIGURE 2-2
Project Boundaries



Source: MCAG 2026 RTP/SCS

2.3 EIR OBJECTIVES

The RTP/SCS identifies the region's transportation needs and issues, sets forth an action plan of projects and programs to address those needs in a manner consistent with the adopted policies, and documents the financial resources required to implement the plan. Additional areas of emphasis and policy initiatives in the 2026 RTP include references to Environmental Justice and Goods Movement Planning. In addition, the 2026 RTP/SCS includes updated project lists and updated performance measures. The 2026 RTP is the third to contain an SCS as required by California Senate Bill (SB) 375. SB 375, enacted in 2008, requires that each Metropolitan Planning Organization (MPO) include an SCS that provides an integrated land use and transportation plan to meet emission-reduction targets set by the California Air Resources Board (CARB).

The vision and goals included in the 2026 RTP/SCS have been established for the Proposed Project and will aid decision-makers in reviewing the Project and associated environmental impacts. The 2026 RTP goals seek to identify the RTP and SCS goals that meet the regional needs and include the following:

Vision
Develop and maintain a safe, efficient, and reliable transportation system that supports economic vitality, sustainable growth, environmental protection, and a high quality of life for all.
Goals
1. Develop a comprehensive, safe, and connected multimodal transportation network to enhance mobility, support economic development, and serve both urban and rural populations.
2. Develop a safe, efficient, and reliable regional transportation system.
3. Create thriving communities with access to sustainable and resilient multimodal transportation options that enhance mobility, connectivity, improve air quality, and enhance quality of life.
4. Support a vibrant, integrated network of land use, housing, and transportation that drives economic development, promotes sustainability, expands access to jobs and services, and enhances overall quality of life.
5. Implement extensive, wide-ranging transportation planning strategies to enhance accessibility for all.
6. Bolster and strengthen project delivery and reduce project delays by working with local jurisdictions to develop plans, projects, and comprehensive funding strategies.
7. Integrate and leverage technologies and innovations to create a multimodal network that prioritizes accessibility, sustainability, and economic growth while adapting to future transportation needs.

2.4 PROJECT CHARACTERISTICS

The Regional Transportation Plan

The Project, as defined by CEQA Statutes, Section 21065, is the preparation of the 2026 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). This document may also be known or referenced as the 2026 RTP, RTP, or RTP/SCS. MCAG has prepared the RTP/SCS as required by Section 65080 et seq. of Chapter 2.5 of the California Government Code, as well as federal guidelines pursuant to the requirements of the Infrastructure Investment and Jobs Act, the 2021 Bipartisan Infrastructure Law (BIL), Moving Ahead for Progress in the 21st Century Act (MAP-21), and the Fixing America's Surface Transportation (FAST) Act. These acts require that RTPs include only those projects that can actually be delivered with funds expected to be available (i.e., financially constrained) and that those projects will help attain and maintain air quality standards consistent with the Clean Air Act Amendments of 1991 and other federal mandates noted below.

The RTP must also meet Transportation Conformity for the Air Quality Attainment Plan, per 40 CFR Parts 51 and 93. The conformity regulation applies nationwide to "all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan" (40 CFR 93.102). In addition, the RTP must address requirements set forth in Assembly Bill 32, the California Global Warming Solutions Act of 2006. The California Transportation Commission (CTC) has prepared guidelines (adopted by the Commission on January 18, 2017) to assist in the preparation of RTPs pursuant to Section 14522 of the Government Code.

On May 17, 2026, the House of Representatives introduced the Building Unrivaled Infrastructure and Long-term Development for America's 250th (BUILD America 250) Act (H.R. 8870). The bipartisan legislation would reauthorize federal surface transportation programs from Fiscal Year (FY) 2027 to FY 2031 and succeed the Infrastructure Investment and Jobs Act (P.L. 117-58), which is set to expire on September 30, 2026. Some of these, along with other applicable requirements and programs, are listed below.

- ✓ **Sustainable Communities and Climate Protection Act of 2008 (SB 375).** SB 375 requires that California's 18 MPOs, including MCAG, include an integrated Sustainable Communities Strategy (SCS) in the RTP/SCS. In essence, SB 375 requires aligning three major components within the regional transportation planning process – land use planning, transportation planning and funding, and State housing mandates – to reduce greenhouse gas (GHG) emissions from cars and light trucks. An SCS must be based on realistic planning assumptions; consider adopted general plans and spheres of influence; and consider natural resources and farmland. It must be internally consistent with the transportation and financing elements of the RTP and consistent with the adopted Regional Housing

Needs Allocation. Finally, an SCS must achieve the GHG reduction target established by the California Air Resources Board.

- ✓ **California Global Warming Solutions Act of 2006 (AB 32 and SB 32).** AB 32 requires that GHG emissions in California be at 1990 levels by 2020. AB 32 identifies GHGs as specific air pollutants responsible for global warming and climate change and directs the California Air Resources Board (ARB) to implement the regulatory and market mechanisms necessary to achieve the specified reductions in GHG emissions. These efforts include reducing emissions through land use and transportation planning. SB 32 extends the GHG emissions reductions required by AB 32 by specifying a reduction of at least 40 percent below 1990 levels by 2030. SB 32 also authorizes ARB to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective reductions in GHG emissions. ARB is directed to conduct the process to achieve GHG emissions reductions in a manner that benefits the state's most disadvantaged communities.

- ✓ **Title VI of the Civil Rights Act of 1964.** This law prohibits discrimination on the basis of race, color, or national origin by recipients of federal funds, such as state and local government agencies. Additionally, Title VI imposes obligations on recipients of federal funds to take affirmative action to assure, among other things, "that no person is excluded from participation in or denied the benefits of the program or activity on the grounds of race, color, or national origin."

  These prohibitions against discrimination were later supported by additional state and federal actions, including Presidential Executive Order 12898 on environmental justice (EJ), which requires that federal agencies and recipients of federal funding "identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations."

- ✓ **The California Complete Streets Act of 2008.** This law requires cities and counties to include complete streets policies in their general plans so that roadways are designed to safely accommodate all users, including bicyclists, pedestrians, transit riders, children, older adults, and people with disabilities, as well as motorists. It complements existing State policy, which directs Caltrans to "fully consider the needs of non-motorized travelers (including pedestrians, bicyclists, and persons with disabilities) in all programming, planning, maintenance, construction, operations, and project development activities and products."

- ✓ **Measure V.** Measure V was passed by voters in November 2016 to implement a 30-year, ½-cent transportation sales tax in Merced County. Funds were provided for the following categories: Transit, Eastside Regional, Westside Regional, and Local. Measure V is estimated to generate approximately $18 million per year based on the ½ cent sales tax for an estimated total of $540 million over the course of the measure's lifetime.

- ✓ **Clean Air Act Amendments (1990)**. Pursuant to Section 176 (c)(4) of the 1990 Federal Clean Air Act Amendments (CAAA), Metropolitan Planning Organizations (MPOs) such as MCAG must demonstrate that the RTP/SCS conforms to the applicable State Implementation Plan (SIP). This process is described in the Federal Transportation-Air Quality Conformity Rule. The purpose of conformity is to ensure that regional transportation planning and programming remain consistent with state and local air quality planning efforts to expeditiously achieve and/or maintain the health-based National Ambient Air Quality Standards (NAAQS). Specifically, the following activities/tests are required to be documented when making conformity determinations of regional transportation plans in Merced County:
  - Expeditious Implementation of Transportation Control Measures Test (Conformity Regulation, Section 93.113)
  - Emission Budget Test (Conformity Regulation, Section 93.118)
  - Transportation Plan is financially constrained (Section 93.108)
  - Interagency Consultation and Public Participation Procedures (Section 93.110)

The 2026 RTP is an update of the 2022 RTP. This RTP will take effect upon adoption. The 2026 RTP is similar to the 2022 RTP in that it includes the Sustainable Communities Strategy (SCS) as required by Senate Bill 375 – the Sustainable Communities and Climate Protection Act of 2008, and also contains updates to planned improvement projects.

As the designated Regional Transportation Planning Agency (RTPA), MCAG is mandated by state and federal law to update the RTP every four (4) years. For the 2022 RTP, a Program Environmental Impact Report (PEIR) was prepared and certified in 2022.

The Draft PEIR for the 2026 RTP/SCS has been prepared to evaluate the environmental effects of the SCS, the newly required element of the RTP. In addition, the PEIR is intended to address cumulative and growth-inducing impacts, as well as other issues resulting from the RTP and the SCS, as required by CEQA. The SCS, as set forth in Chapter 5 of the RTP, is further described below and is incorporated by reference.

The RTP guides the development of the Regional Transportation Improvement Program (RTIP). The RTIP is the programming document used to plan the construction of regional transportation projects and requires approval from the California Transportation Commission (CTC). No project-level assessments of environmental impacts are feasible in this Draft PEIR due to the absence of site-specific information and the inability to predict when, or if, particular projects will receive funding or approval.

The RTP is also used as a transportation planning document by each of the seven (7) member jurisdictions of MCAG. The members include the County of Merced and the cities of Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced.

The RTP/SCS identifies the region's transportation needs and issues, sets forth an action plan of projects and programs to address those needs in a manner consistent with the adopted policies, and documents the financial resources required to implement the plan. The 2026 RTP/SCS includes updated project lists and updated performance measures. The 2026 RTP is the fourth to contain an SCS as required by California Senate Bill (SB) 375. SB 375, enacted in 2008, requires that each Metropolitan Planning Organization (MPO) include an SCS that provides an integrated land use and transportation plan to meet emission-reduction targets set by the California Air Resources Board (CARB).

The RTP sets forth action plans for the region to address identified transportation needs and issues. Planned investments must be consistent with the goals and policies of the Plan and must be financially constrained (meaning that funding is available and has been committed by the appropriate agencies to implement the project). These projects are listed in the Constrained Program of Projects (reference Appendix B of this EIR). Results of the transportation modeling process are provided in Section 3.17 Transportation/Traffic of this Draft PEIR, as well as the Air Quality Conformity Analysis[1].

Forecasting methods in the RTP/SCS primarily use the "market-based approach," which relies on demographic data and economic trends. For best results, the RTP also uses the "build out" method, providing the most accurate estimates of growth in all areas of the County through the year 2049. Within each element of the RTP, assumptions guide the goals, policies, and actions. Those assumptions include demographic projections, land use forecasts, air-quality models, performance indicators, capital and operating costs, alternative costs, timeframes (short- and long-term), environmental resources, and methodology.

Alternative scenarios are briefly discussed in the SCS; they are also analyzed for feasibility in this PEIR, as required by the California Environmental Quality Act (15126(d), 15125.6(a)). From the Draft PEIR, the alternatives are identified and described. The 2026 RTP/SCS recommends only one alternative scenario, which is the preferred one.

The 2026 RTP/SCS promotes a "balanced" multi-modal transportation system. It calls for increased investments in alternative transportation modes, while accommodating the necessary amount of new highway capacity. The following section of this Introduction includes references to modal plans and constrained projects, and a list of all constrained projects by mode is contained in the 2026 RTP/SCS. Financially unconstrained projects are alternatives that could be moved to the constrained program if support for an individual project remains strong and funding is identified. The project's unconstrained

[1] The Air Quality Conformity Analysis is required by the Clean Air Act and U.S. Environmental Protection Agency transportation conformity regulations for all nonattainment and maintenance areas for transportation-related criteria pollutants. The Conformity Analysis demonstrates that the predicted emissions for the RTP meet both the emissions budget and the interim emission tests.

status does not imply it is unnecessary; rather, it simply cannot be accomplished given Merced County's fiscal constraints. MCAG will be vigilant in its search for funding to support these projects.

Unconstrained projects are not included in the air quality conformity analysis and are not analyzed in this PEIR. In the future, as the funding picture changes and community values and priorities for transportation projects become redefined and honed, unconstrained projects may be moved to the constrained program. Should this occur, the 2026 RTP/SCS would be amended, and a new assessment of the Plan's conformity with state and federal air quality rules and standards would be undertaken. Only funded transportation improvement projects can be reflected in the RTP/SCS and analyzed in the associated conformity finding. Each element in the RTP addresses proposed actions to implement the vision, goals, and actions identified in Chapter 4 – Policies and Implementing Actions. These actions outline specifically how the goals of the RTP/SCS will be accomplished.

2.5 2026 RTP PROVISIONS

Each mode available for the movement of people and goods in and through Merced County is addressed in the 2026 RTP/SCS, along with transportation/air quality strategies, as listed below. The 2026 RTP/SCS is incorporated by reference. Each mode of transportation is presented in the 2026 RTP, which includes an inventory of the existing system, accomplishments, a needs assessment, and proposed actions. Highlights of these sections are also included in this Chapter by mode. Proposed actions will be based upon projected travel demand and appropriate policy. The short-range measures will ultimately form the basis for the Regional Transportation Improvement Program (RTIP) and the Federal Transportation Improvement Program (FTIP).

Federal transportation legislation requires that long-range transportation plans include only those projects that have a "reasonably available" source of funding. This financially "constrained" list will define those projects. The RTP/SCS also identifies projects deemed necessary but without funding sources identified, providing a complete picture of the transportation systems needed for the region's future vitality.

Transportation Conformity with the Clean Air Act Amendments of 1990

The Federal Clean Air Act (FCAA) requires states to improve coordination between transportation and air quality planning and set a firm schedule for attainment of air quality standards. Federal transportation legislation strengthens the reforms of the Federal Clean Air Act Amendments (FCAAA) by requiring that local and state plans in nonattainment areas, such as the San Joaquin Valley, be consistent with, or conform to, the State Implementation Plans (SIP) for clean air. The financially constrained projects listed in the RTP have been analyzed to ensure that their implementation will contribute to the attainment of improved air quality

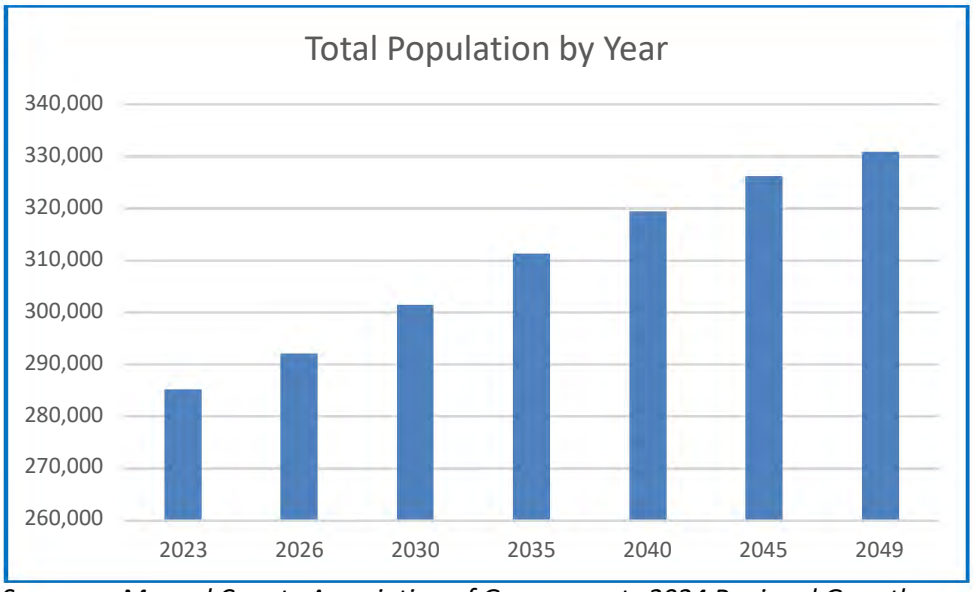
consistent with adopted SIPs. The 2026 Regional Transportation Plan's vision, goals, and actions are reflected in Chapter 4 of the RTP. The goals and objectives have been developed to serve as the foundation for both short and long-term planning. For purposes of the RTP/SCS, the following definitions will apply.

Sustainable Communities Strategy

MCAG updates its Regional Transportation Plan (RTP) every four years. Senate Bill 375 (SB 375), which took effect in 2009, added provisions to the California Government Code to encourage planning practices that create sustainable communities. It calls for each Regional Transportation Planning Agency (RTPA) to prepare an SCS as an integrated element of the RTP. The SCS is intended to demonstrate how integrated land use and transportation planning can reduce greenhouse gas (GHG) emissions from autos and light trucks. MCAG is including the SCS for the second time in its 2026 RTP.

Three demographic measures form the primary SCS and future-year 2035 and 2049 forecasts: household population, housing units, and employment. It is important to note that the population and employment forecasts were held constant across all SCS scenarios and served as the basis for the spatial distribution of land use in each scenario. Figure 2-3 provides population estimates and projections for 2023 through 2049.

FIGURE 2-3
Demographic Forecasts - Merced County Years 2023 – 2049



Source: Merced County Association of Governments 2024 Regional Growth Forecast

The 2026 RTP/SCS aims to guide the Merced region toward a sustainable future by coordinating land use, housing, and transportation to create compact, walkable, and transit-oriented communities. Sustainability involves meeting current economic, environmental, and social needs without compromising future generations' abilities to do the same. This is referred to as the "Three Es" of sustainability: economy, environment, and equity.

The strategy focuses on directing housing and job growth to urban areas with transportation infrastructure, protecting habitats, investing in transportation to reduce GHG emissions, and implementing the plan through collaboration and incentives. Four land use scenarios were developed based on public input: No Project; Alternative Scenario A (Baseline); Alternative Scenario B (Multimodal Infill and Conservation); and Alternative Scenario C (Affordable Housing-Centered Growth).

These scenarios consider regional growth forecasts, land use patterns, transportation networks, and assumptions about future travel behavior in Merced County. The transportation network includes planned investments in public transit and infrastructure improvements to enhance connectivity and safety. Based on community feedback, the MCAG Board approved three scenarios for detailed evaluation.

- ✓ **Scenario A: Baseline / Historical Trend**
  Scenario A reflects a continuation of existing development patterns, transportation investments, and adopted policies. This scenario assumes growth occurs generally consistent with historical trends and currently planned projects, with limited shifts in land use or travel behavior.
  Key characteristics include:
  - Limited emphasis on infill or redevelopment within existing urban areas.
  - Continued development of lower-density, suburban single-family neighborhoods.
  - Greater reliance on personal vehicles for daily travel.
  - Fewer opportunities to access destinations by transit, walking, or bicycling compared to the other scenarios.

- ✓ **Scenario B: Multimodal Infill and Conservation**
  Scenario B focuses on directing growth toward existing communities, major transit corridors, and rail station areas while preserving agricultural lands, open space, and environmentally sensitive resources. The scenario emphasizes compact development and expands multimodal transportation options.
  Key characteristics include:
  - Higher-density development concentrated near existing and planned rail stations.
  - Increased infill and redevelopment within established urban areas and along major transit corridors.

- More compact development patterns that accommodate growth while reducing land consumption and conserving farmland and natural resources.
- Enhanced investments in public transit, bicycle, and pedestrian infrastructure to reduce automobile dependence and support a broader range of travel choices.

✓ **Scenario C: Affordable Housing-Centered Growth – Preferred Project Scenario**

Scenario C prioritizes housing affordability, equity, and access to employment opportunities by directing a greater share of future residential growth to multifamily and higher-density housing located near jobs, services, and transit. The scenario also includes substantial infill development and seeks to improve transportation accessibility for lower-income households.

Key characteristics include:

- Increased development of multifamily housing compared to historical growth patterns.
- Greater emphasis on locating housing near employment centers, transit corridors, downtown areas, UC Merced, and transit-served unincorporated communities such as Planada.
- Less concentrated development around rail stations than Scenario B, with a broader distribution of housing near jobs and transit throughout the region.
- Reduced commute distances and improved access to employment and services for lower-income households through strategic housing placement and enhanced transportation connectivity.

The MCAG Governing Board selected Scenario C – Affordable Housing-Centered Growth as the preferred Sustainable Communities Strategy (SCS) for the 2026 RTP/SCS, based on public input and RTP Roundtable recommendations (reference Figures 2-4 and 2-5).

Scenario C envisions a future for Merced County that aims to reduce greenhouse gas (GHG) emissions by 14 percent by 2035. It addresses community priorities by promoting housing affordability, improving access to jobs and services, supporting economic development, enhancing air quality, maintaining transportation infrastructure, and improving safety.

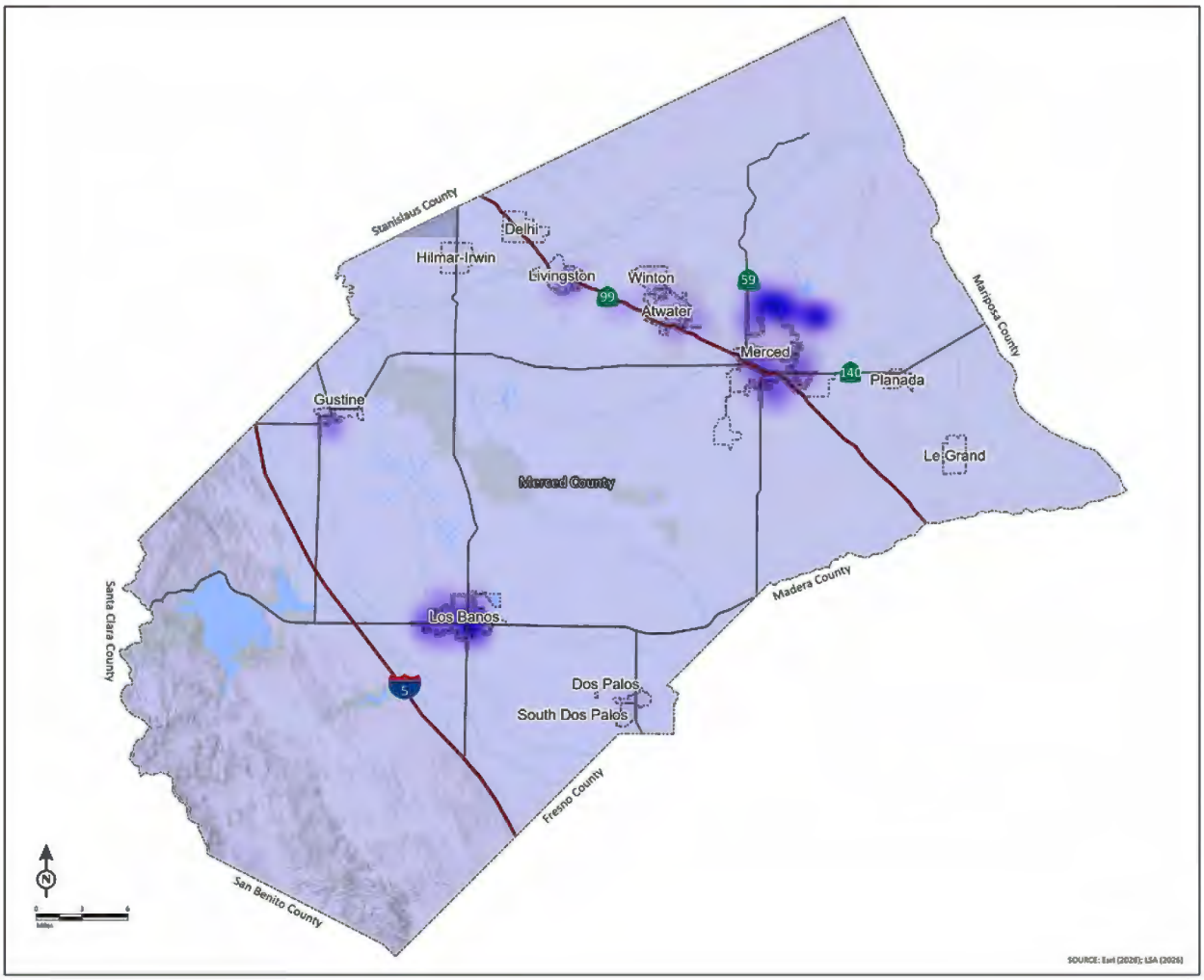
By focusing on housing and employment growth near transit options, Scenario C seeks to create a more sustainable and equitable future, providing residents with greater housing choices, improved mobility, and expanded opportunities.

✓ **Transportation Investment Strategy**

As detailed in Chapter 5 of the 2026 RTP/SCS, Scenario C encourages a transportation and land use pattern that enhances walking, bicycling, and transit by clustering development near employment centers, transit corridors, and key destinations. This approach reduces the need for long trips and broadens transportation options for residents.

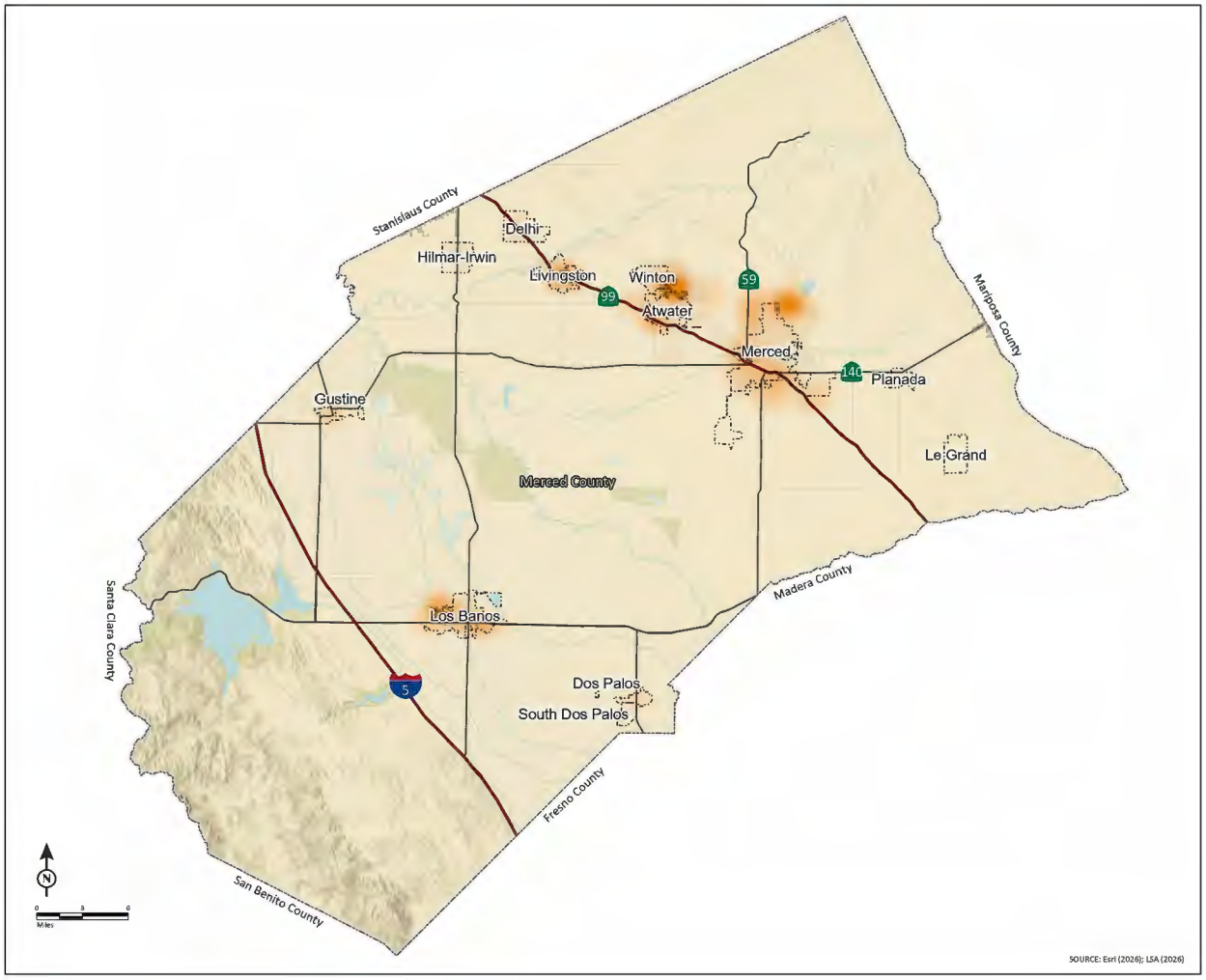
To achieve this vision, MCAG and its agencies are dedicated to investing in public transit, bicycle and pedestrian facilities, and multimodal improvements that enhance regional mobility and connectivity.

FIGURE 2-4
Preferred 2026 RTP SCS Scenario C
2035 Household Growth Distribution



Source: MCAG 2026 RTP/SCS

FIGURE 2-5
Preferred 2026 RTP SCS Scenario C
2035 Employment Growth Distribution



Source: MCAG 2026 RTP/SCS

Additionally, maintaining the existing transportation system, including roadway repairs and safety enhancements, will remain a priority to ensure a reliable network for residents.

The preferred project alternative includes the transportation project lists and improvements outlined in Chapters 3 and 6 of the 2026 RTP/SCS and aligns with SCS Scenario C.

In addition to the SCS alternatives, the No Project Alternative was also assessed as required by CEQA. The No Project Alternative and each of the three SCS scenario alternatives are further defined in Chapter 4 of this PEIR. A matrix identifying the Performance Measures and results used to evaluate and compare each alternative (where available) is presented in Tables 4-1 through 4-3 in Chapter 4. It should be noted that other environmental issues were considered when comparing and selecting the Preferred Project Alternative, including all environmental issue areas referenced in Chapter 3 of this PEIR and further documented in Chapter 4.

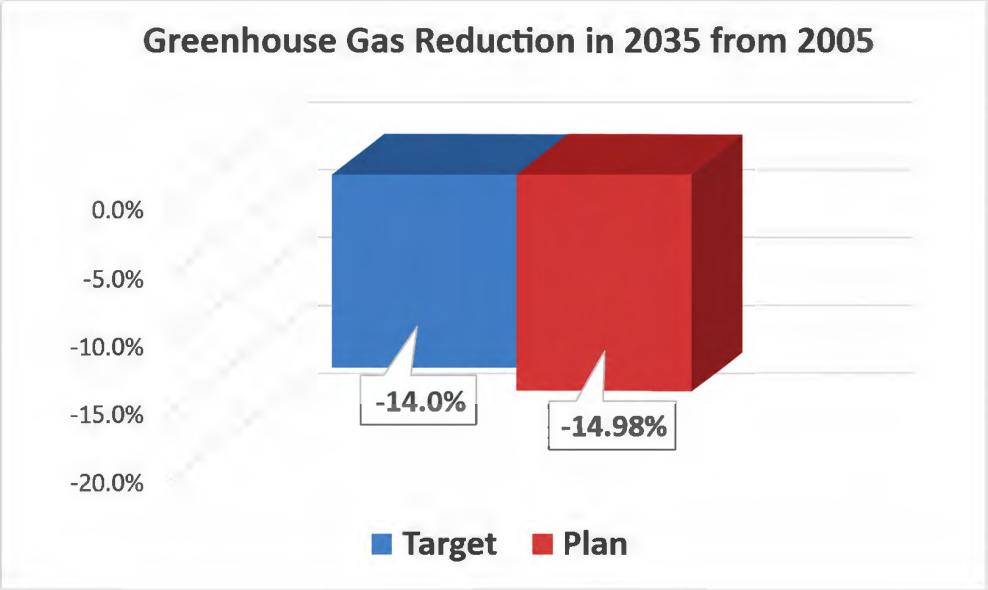
✓ **SCS Modeling**

Under Section 176 (c)(4) of the 1990 Federal Clean Air Act Amendments (CAAA), Metropolitan Planning Organizations (MPOs) like MCAG must ensure that the Regional Transportation Plan (RTP) aligns with the State Implementation Plan (SIP) to maintain compliance with National Ambient Air Quality Standards (NAAQS). The project analysis indicates that the Plan meets vehicle emissions budgets (reference Figure 2-6).

The Sustainable Communities and Climate Protection Act of 2008 (SB 375) mandates that California's MPOs, including MCAG, incorporate a Sustainable Communities Strategy (SCS) into the RTP/SCS to achieve greenhouse gas (GHG) reduction targets set by the California Air Resources Board (CARB). With this Plan, the Merced region can meet and exceed the GHG targets specified under SB 375.

FIGURE 2-6

GHG Emission Reduction



Source: MCAG 2026 RTP/SCS

Merced County will meet GHG reduction targets established by the California Air Resources Board (CARB) by focusing on housing and employment growth in urbanized areas, protecting sensitive habitat and open space, and investing in a transportation system that provides residents and workers with transportation options. Expectations for meeting GHG targets are based upon the modeling methodology described below.

Scenario planning is a method in which several scenarios are developed, analyzed for future impacts, and then evaluated against one another. In the context of the Merced County Association of Governments 2026 Regional Transportation Plan/Sustainable Communities Strategy Update (2026 MCAG RTP/SCS), scenario planning was used to evaluate four land use scenarios. Each scenario represents a different set of land use patterns and transportation investments. The analysis then shows how different combinations of investments and land uses yield different future outcomes.

MCAG developed alternative SCS scenarios to estimate GHG emissions reductions from combined transportation and land use improvements using both on-model and off-model tools. The on-model strategies involve land use and transportation improvements modeled with MCAG's four-step travel demand model, which was updated to the base year 2023 and includes post-COVID travel behaviors.

MCAG created a land use model to allocate future growth, estimating development suitability and land use capacity to meet growth targets for each jurisdiction. The model captures short-term induced travel demand from transportation projects and estimates long-term induced VMT using the NCST tool.

For GHG emissions estimation in the 2026 SCS, MCAG used EMFAC 2014 to assess on-road vehicle emissions and applied an adjustment factor to account for state program credits in accordance with CARB guidelines. Additionally, off-model strategies, including transit service, bike and pedestrian infrastructure, and electric vehicle incentives, were implemented and developed in alignment with the San Joaquin Valley approach.

For detailed technical methodology, please refer to Chapter 5 of the MCAG 2026 RTP/SCS.

- ✓ **Performance Indicators**
  During the SCS development process, MCAG created performance indicators to measure the impacts of three SCS scenarios on the Merced region's goals. The approved indicators for the 2026 RTP/SCS include:

  - GHG Emissions Reduction Per Capita: Measures the effectiveness of each scenario in reducing GHG emissions compared to the CARB's target of 14% by 2035, relative to 2005 levels.

- VMT Per Capita: Assesses average daily travel per resident in 2035, reflecting air quality and climate improvements based on housing, employment, and transportation investments.
- Air Quality – Criteria Pollutant Emissions: Evaluates emissions from vehicles, including ozone and particulate matter, which are critical for areas like Merced, designated as non-attainment for air quality.
- Farmland Consumed – Important Farmland: Counts the acres of important farmland that would be developed, emphasizing the need to preserve agricultural land according to the California Department of Conservation.
- Wetlands Preserved: Measures the acres of wetlands converted to urban development, highlighting the ecological importance of these areas for filtering pollutants and sustaining wildlife.
- Total Acres of Land Consumed: Calculates the total land converted for urban development, indicating each scenario's growth footprint.
- Housing Density: Analyzes the average housing units per acre planned for 2035, reflecting land use efficiency and its correlation with travel patterns and environmental impacts.

Using MCAG's land use and transportation modeling tools, Table 2-1 below is a summary of the indicator results for Scenarios A, B, and C:

TABLE 2-1
Summary of Indicator Results

Indicators	Scenario A Baseline/ Historical	Scenario B Multimodal Infill	Scenario C Affordable Housing	Notes
GHG reduction/capita	-14.51%	-14.79%	-14.98%	Target: -14% by 2035
VMT/capita	-12.23	-12.19	-12.16	Lower is better
Air quality	Worst	Moderate	Best	Lower is best
Farmland consumed	47 acres	38 acres	40 acres	Lower is better
Wetland consumed	1,752 acres	1,606 acres	1,544 acres	Lower is better
Total land consumed	3,785 acres	3,376 acres	3,279 acres	Lower is better
Housing density (dwelling units/acre)	5.48	6.11	6.55	Higher is better

Multi-modal Transportation System

The planned transportation/circulation system provides the basic network used for the movement of goods and people in the region. Regional streets and highways are used by nearly all travel modes, including automobiles, ridesharing vehicles, public and common carrier transit, intra- and inter-regional trucking, bicyclists, pedestrians, and other non-motorized modes of transportation. These systems must operate efficiently to reduce traffic congestion, improve air quality, and move people and goods safely. The RTP systems consist of regional streets and roads, including federal interstate and State highways, regional arterials, and other regional street and road facilities. The RTP also addresses the needs of future transportation/circulation systems, including mass transportation, aviation, non-motorized, and goods movement.

A list of planned improvement projects along each of these systems is provided in the RTP, and the list of improvement projects and programs contained in the RTP is provided in the appendices of this Draft EIR (Appendix B). These planned projects are considered "financially constrained"; therefore, the likelihood of implementation over the next twenty-four (24) years is assumed. The impact analysis of each mode on the planned transportation/circulation system is provided below. The analysis was developed with the assumption that only financially constrained projects would be implemented during the life of the Project.

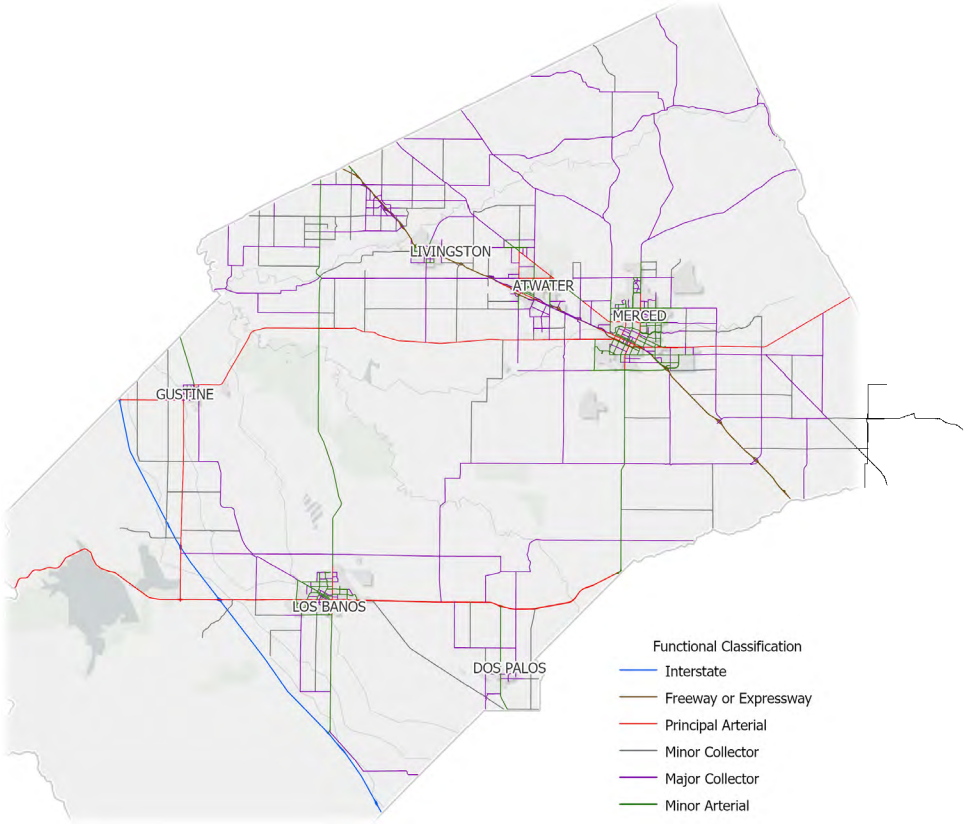
Details regarding the multimodal transportation system in Merced County are provided below and in the 2026 RTP/SCS, which is incorporated by reference. Projects are listed in the appendices of this Draft EIR.

- ✓ **Regionally Significant Roadway System**

  Merced County's roadway network is essential for regional mobility, accessibility, and economic activity. It facilitates the efficient movement of people and goods, providing access to jobs, education, healthcare, and essential services. The network also supports key industries such as agriculture, logistics, and commerce, which depend on reliable transportation links.

  California's functional classification system (Figure 2-7) is a standardized framework for categorizing roadways by the role they serve in the overall transportation network. Roadways are organized hierarchically, with interstates and freeways at the top, intended for high traffic volumes over long distances. Principal and minor arterials connect cities and major destinations, while collectors link local streets to the arterial network. Local roads serve homes and businesses, typically with lower speeds and traffic volumes. This classification system aids transportation planning, informs roadway design, determines eligibility for funding, and supports performance monitoring.

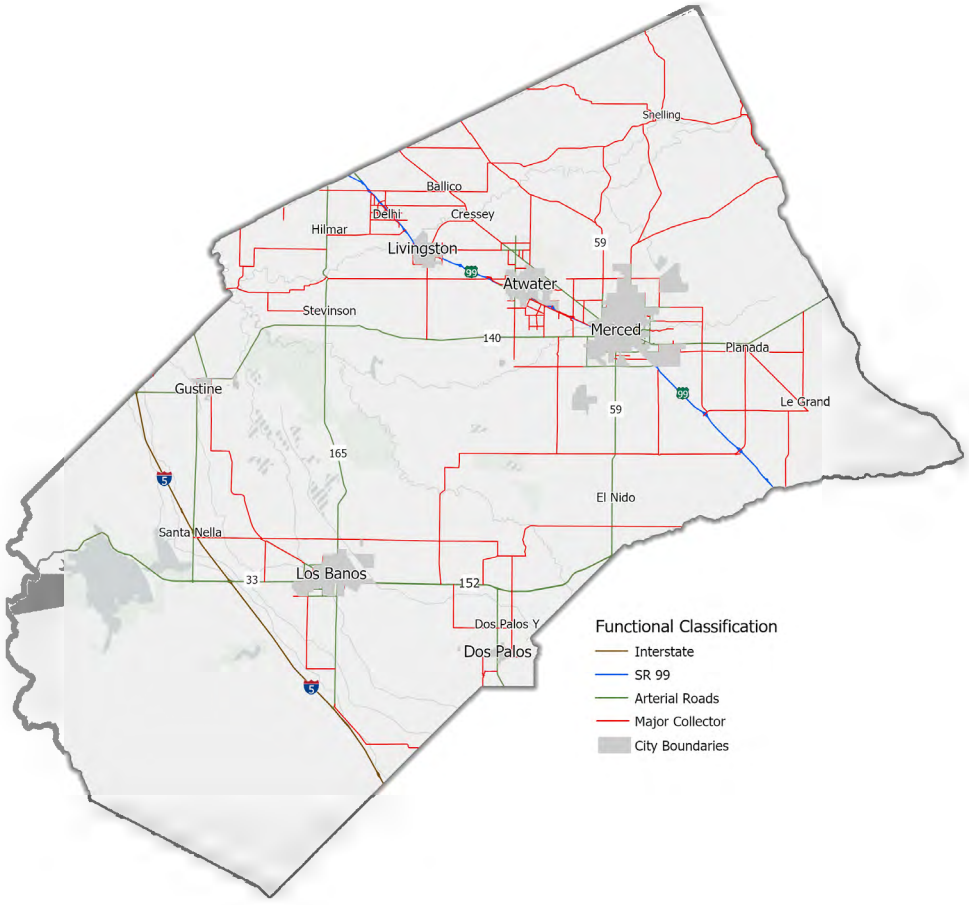
FIGURE 2-7
California Functional Classification System



Source: MCAG 2026 RTP/SCS

MCAG has identified a Regional Roadway System that serves as the backbone of Merced County's transportation system. The Regional Roadway System (Figure 2-8) includes Interstate facilities, other freeways and expressways, principal and minor arterials, and major collectors. The system also incorporates planned facilities that have not yet been constructed but are expected to play a significant role in the future network. Minor collectors and local roads are not included, as these facilities primarily serve local circulation rather than regional travel.

FIGURE 2-8
The Regional Roadway System



Source: MCAG 2026 RTP/SCS

- System Performance

  The RTP aims to create a transportation system that ensures reliable and predictable travel times for daily trips. While congestion is unavoidable at times, enhancing roadway reliability by reducing disruptions from crashes, weather, and construction can significantly boost system performance. A reliable network reduces uncertainty and enables more efficient goods movement.

  System performance is assessed through measures like travel time reliability and delay. Alongside system expansion, operational strategies such as traffic management and technology improvements can enhance performance. A safer and more efficient transportation system leads to better mobility, increased economic productivity, and improved quality of life in the region.

- System Preservation

  Maintaining the roadway network in good repair is crucial for economic vitality, safety, and long-term performance. The condition of roadways and bridges influences travel reliability, vehicle operating costs, and user experience, and supports transit services and bicycle facilities. Prioritizing roadway preservation extends asset life, protects investments, and reduces future rehabilitation costs, making it essential for regional transportation decisions.

  In Merced County, there are about 576 miles of roadways on the Regional Road System, including 279 miles of State Highways maintained by Caltrans. The remaining 297 miles of the Regional Road System and over 2,000 miles of local roads are maintained by seven local jurisdictions.

  Table 3.1 in Chapter 3 of the MCAG 2026 RTP/SCS presents Pavement Condition Index (PCI) results for each member agency in Merced County based on a 2018 analysis. Except for the City of Livingston, all jurisdictions are rated Fair to Very Poor, highlighting a significant need for system preservation. Although Measure V and Senate Bill 1 have helped advance roadway maintenance, funding remains inadequate to fully address deficiencies or prevent further deterioration. Continued investment in maintenance is essential to improve pavement conditions and avoid costly future reconstruction. A regional pavement condition assessment update is expected by 2027.

- Highlighted Plan and Projects

  This section outlines recent planning efforts and major regional projects that support the RTP's goals. These initiatives identify key investments and promote a coordinated, data-driven approach to current and future transportation needs. Additionally, it highlights significant projects aimed at improving travel patterns, connectivity, and safety in the region.

  - SR 99 Comprehensive Multimodal Corridor Plan

    The SR 99 Comprehensive Multimodal Corridor Plan (CMCP), adopted by Caltrans in 2025, outlines a vision for 300 miles of SR 99 from Kern County to Sacramento. Developed in partnership with San Joaquin Valley MPOs and various Caltrans districts, the plan addresses existing and future challenges along the corridor.

    It presents strategies to enhance safety, reliability, and system performance through a multimodal approach that includes roadway improvements, rail enhancements, transit investments, and active transportation connections. Key priorities are maintaining infrastructure, improving climate resilience, reducing greenhouse gas emissions, enhancing goods movement, and fostering economic development in surrounding communities. The

CMCP can be viewed at ***https://dot.ca.gov/caltrans-near-me/district-6/district-6-projects/central-valley-99*.**

- Merced and Atwater SR 99 Managed Lanes Projects
  Caltrans is preparing supplemental PSR-PDS documents for the unfinished four-lane segments of SR 99 in Merced and Atwater. The previous plan for an eight-lane facility is no longer being considered. The new configuration will include two general-purpose lanes and one Managed Truck-only Lane in each direction, with completion expected in 2026. After that, MCAG will move forward with implementation steps.

- Multijurisdictional Local Roadway Safety Plan
  In 2024, MCAG led the development of the Multijurisdictional Local Roadway Safety Plan (LRSP) to enhance traffic safety across the six incorporated cities in Merced County: Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced. The County created a separate LRSP for unincorporated areas. This plan, crafted with input from local jurisdictions, law enforcement, and safety partners, analyzes collision trends and identifies a high-injury network and systemic risks for all roadway users, including pedestrians and cyclists.

  The LRSP adopts a Safe System Approach, acknowledging human error while aiming to minimize crash risks and severity. It proposes a variety of engineering, education, enforcement, and policy strategies to address major safety concerns, including roadway departures, intersection collisions, and speeding. Priority projects and countermeasures are also outlined to direct local investments. The complete LRSP is available in Appendix D of the MCAG 2026 RTP/SCS.

- Merced County Transportation Network Vulnerability Assessment
  MCAG received a Caltrans Adaptation Planning Grant to develop the Merced County Transportation Network Vulnerability Assessment (TNVA). This assessment evaluates the impact of climate-related hazards, such as flooding, erosion, and extreme heat, on key transportation assets. It identifies vulnerable components and areas where risks may increase over time, providing a data-driven basis for prioritizing adaptation strategies and enhancing the resilience of Merced County's multimodal transportation system. The final TNVA is expected to be adopted in June 2026.

- Campus Parkway
  Campus Parkway is a new expressway connecting SR 99 in Merced to the University of California, Merced, featuring a separate multi-use path for pedestrians and cyclists. Phases 1 to 3, funded by federal, state, and local sources, built the expressway to Yosemite Avenue,

with Phase 3 completed in 2023. California Senate Bill 132, enacted in 2017, provided $100 million for Phases 2 and 3 and advanced Phase 4.

Phase 4 will extend the parkway to East Cardella Road, while Phase 5 will connect it to the UC Merced campus. The project is part of the Merced Loop System, aimed at enhancing regional connectivity and reducing congestion from university and freight travel.

- Other Major Projects
  Key projects include the Atwater–Merced Expressway (AME) for improved regional connectivity and economic development in Merced County; the Merced Loop System, which forms a ring around the city; and the Los Banos Pioneer Road project, featuring complete-streets upgrades and new connections to Pacheco Boulevard. Additionally, Merced County's diverse bridge infrastructure supports regional mobility and local access.

✓ **Goods Movement**

➢ Freight Corridors with Highway Backbone
The regional highway freight backbone is formed by Interstate 5 and State Route 99, which handle the primary north-south interregional truck movements. East-west and cross-regional distribution depend on a wider set of corridors. State Routes 152, 140, 33, 59, and 165 provide the major connections between Interstate 5 and State Route 99 (reference Figure 2-9). Together with local roads and streets, these corridors connect agricultural areas, industrial sites, distribution activity, communities, and external gateways. The regional freight system relies on both the backbone facilities and the first-mile/last-mile roadway network that feeds them.

➢ Freight Rail System
Freight rail is crucial to our regional goods movement, providing a valuable long-haul alternative to trucking for agricultural products, manufactured goods, and more. Merced County is served by two major Class I railroads—Union Pacific Railroad and BNSF Railway—each with extensive rail networks.

Union Pacific operates about 84 miles of track in the county, enhancing freight movement and set to welcome the Altamont Corridor Express (ACE) commuter service. BNSF maintains around 43 miles of track, supporting freight operations and intercity passenger service, including the Gold Runner from Merced station.

These rail corridors facilitate the transport of various products, benefiting local businesses that rely on rail access. Notably, BNSF's direct service to Castle Commerce Center boosts industrial connectivity.

FIGURE 2-9
Merced County Goods Movement Major Freight Corridors



Source: MCAG 2026 RTP/SCS

Exciting investments are enhancing our rail capabilities. In 2022, Merced County partnered with Patriot Rail to create a rail district at Castle Commerce Center, improving access to the BNSF mainline and expanding shipping opportunities for local producers and manufacturers. Our freight rail system is vital to our economy and the future development of the inland port at Castle Commerce Center.

- Intermodal and Trade-Related Facilities

  The inland port at Castle Commerce Center presents a significant opportunity for goods movement in the region, building on an existing rail connection to enhance intermodal freight handling.

In July 2023, it received $49.6 million from the Port and Freight Infrastructure Program to develop pre-shipment processing and intermodal cross-docking, and to expand rail capacity to support logistics growth. This project aims to improve market access for local producers, facilitate truck-to-rail transfers, and enhance connections to the ports of Los Angeles, Long Beach, and Oakland.

- Valleywide Coordination

  The Merced region's goods movement system is part of the vital San Joaquin Valley freight network, which contributes over $45 billion annually in agricultural production. Key routes like State Route 99 and Interstate 5 are essential for transporting goods to ports and major markets.

  Regional partners are collaborating to enhance corridor preservation, climate resilience, and the prioritization of freight projects. Efforts include identifying priority freight corridors, assessing vulnerable network segments, and developing strategies for improvement. Initiatives like the V-TRANSFRM study aim to bolster the reliability and sustainability of the Valley's freight system in response to changing economic and environmental conditions.

- Future Issues and Opportunities

  - Trucks

    Trucking will remain the primary and flexible mode of goods movement in the region, but it will also lead to increased pavement wear, congestion, emissions, and conflicts on local roads. Key issues to address include preserving freight corridors, enhancing access to industrial and agricultural areas, reducing urban conflicts, and transitioning to cleaner truck technologies. The 2025 State Route 99 Comprehensive Multimodal Corridor Plan introduces a managed-lane strategy for accommodating transit, high-occupancy vehicles, and trucks. This approach shifts focus from traditional roadway widening to lane management, bottleneck relief, safety improvements, and overall corridor performance, aiming to enhance freight reliability along SR 99.

  - Rail

    Rail is set to play a crucial role as industrial activity grows and investments in the Castle Commerce Center's inland port and rail district progress. Future efforts will focus on preserving freight capacity, improving connections for industrial users, and coordinating freight services with passenger rail services such as Amtrak and ACE. Additionally, addressing at-grade rail crossings will be essential for enhancing safety and local mobility, especially where rail intersects with major roadways.

- Future Technology and Operations

  Future goods movement in the region will rely on cleaner vehicle technologies, improved operational strategies, and better intermodal connectivity instead of a single innovative solution. Studies in the San Joaquin Valley emphasize the importance of zero-emission truck technologies, freight traveler information systems, and data-driven tools that enhance efficiency and reduce fuel consumption.

  Infrastructure planning should be adaptable, incorporating truck electrification, alternative fueling options, and intelligent transportation systems for real-time freight management. These strategies aim to improve goods movement, minimize environmental impacts, and boost long-term economic competitiveness.

- Clean Freight Corridor Program

  The Clean Freight Corridor Program is a California initiative designed to promote zero-emission freight movement on key trade routes. Managed by the California Air Resources Board (CARB) and in collaboration with other agencies, the program funds zero-emission trucks, the necessary infrastructure, including charging stations and hydrogen fueling facilities. It focuses on high-volume freight corridors and communities most affected by air pollution, aiming to reduce greenhouse gas emissions, improve air quality, and advance environmental justice. For regions like Merced County along major corridors, the program offers an opportunity to facilitate cleaner goods movement and align investments with state climate goals.

- Inland Port Opportunity at the Castle Commerce Center

  The Castle Commerce Center inland port is crucial to enhancing the regional goods movement strategy and to creating a more efficient multimodal freight system. If effective, it could expand rail freight opportunities, reduce long-haul trucking, lower emissions, and improve access for local producers. This will strengthen the Merced region's position within the San Joaquin Valley logistics network. Achieving this requires coordinated planning to integrate the port with surrounding transportation systems and to improve truck access and first- and last-mile connections. Aligning infrastructure investments with inland port development can foster a reliable freight network that boosts economic growth and sustainability.

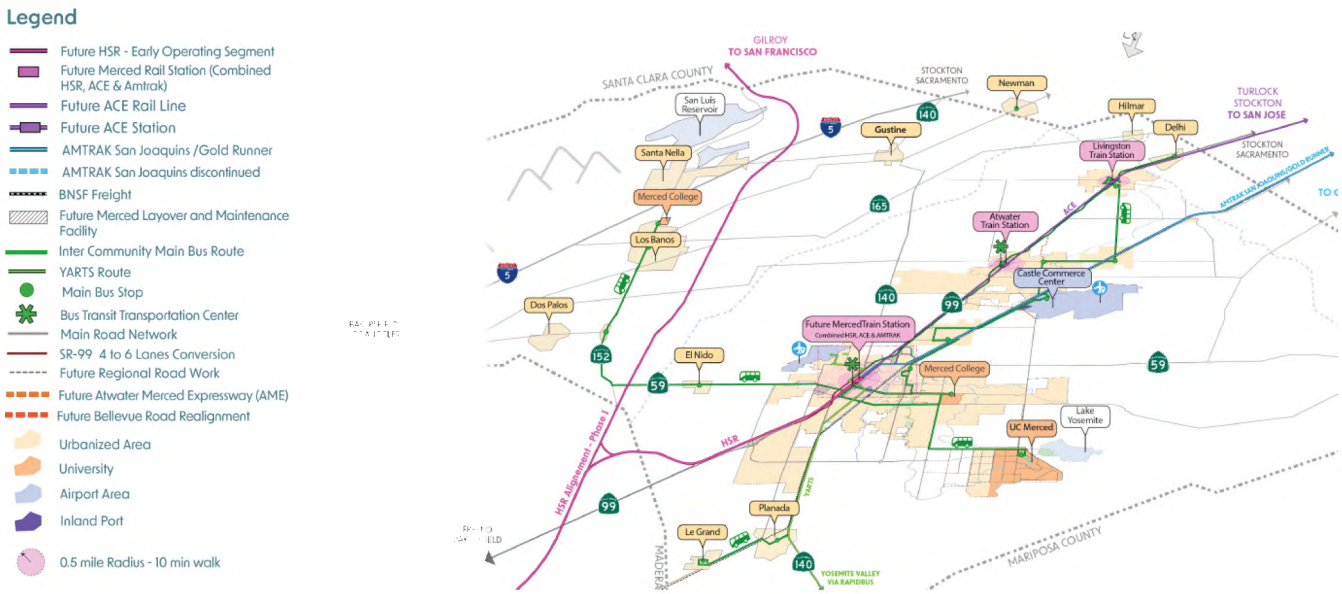
✓ **Passenger Rail**

Passenger rail is a key part of the region's transport system. Currently, Merced is served by the Gold Runner (formerly Amtrak San Joaquins) at the 24th Street station. Two new services are planned: the California High-Speed Rail (HSR) from Kern County with stations in Bakersfield, Fresno, and Merced, and the Altamont Corridor Express (ACE) southbound extension from Stockton, with planned stops in Merced.

While the exact location of the Merced HSR station is still uncertain, initial plans suggest it will connect with the Gold Runner at an integrated station between R and O Streets. The Gold Runner station may be relocated there, discontinuing the current line south of Merced, which would be replaced by HSR service. The new station will feature an aerial guideway connecting to the HSR platform and improvements to freight rail operations through the Merced County Inland Port.

The Merced Regional Multimodal Access Plan (MRMAP) includes "story maps" developed in 2025 to showcase transportation projects across Merced County and their connections to local communities, detailed in Appendix D of the MCAG 2026 RTP/SCS. Figure 2-10 provides a visual representation of the future of the passenger rail system in Merced County.

FIGURE 2-10
Future of Passenger Rail in Merced County – Looking West



Source: MCAG 2026 RTP/SCS

- Gold Runner

  The Gold Runner, previously known as Amtrak San Joaquins, is an intercity passenger line running 365 miles from Bakersfield to Oakland and Sacramento, covering 11 counties. Managed by the San Joaquin Joint Powers Authority (SJJPA), it includes seven daily round-trip trains and a bus network providing vital connections across California and into Nevada. Merced is the second-busiest station on the route and serves as a crew change location, with recent upgrades including a second platform and expanded parking.

Service improvements are in progress, focusing on newer locomotives and passenger rail cars. Future projects aim to accelerate train speeds and increase service frequency, notably plans for double-track improvements between Merced and Stockton to support up to 12 daily round trips. The Gold Runner also partners with YARTS for connections to Yosemite and added Thruway Bus services to San Jose. SJJPA is expected to operate early high-speed rail service once the Initial Operating Segment between Merced and Bakersfield is operational. The long-term goal for Gold Runner is to provide hourly service between Merced and Sacramento while integrating with high-speed rail connections.

Figure 2-11 provides a visual representation of the Gold Runner and Thruway Bus systems, as well as other passenger rail systems in California.

- California High-Speed Rail

  The California High-Speed Rail project is a statewide initiative led by the California High-Speed Rail Authority to develop an approximately 800-mile high-speed rail network with up to 24 stations (Figure 2-12). Phase 1 of the system will connect San Francisco and Los Angeles in about three hours, with trains capable of reaching speeds up to 200 miles per hour. The system is planned to serve major cities, including San Francisco, San Jose, Sacramento, Merced, Madera, Fresno, Hanford (Kings–Tulare), Bakersfield, Palmdale, Burbank, Los Angeles, Anaheim, and ultimately San Diego. The City of Merced is planned to be a key junction, connecting the Central Valley, the Bay Area, and the Sacramento region. Phase 1 is currently underway and has been subdivided into multiple segments. The first segment anticipated to begin service is the Early Operating Segment (EOS), which will connect Merced to Bakersfield. This segment is planned as a fully double-tracked, electrified rail line, with key components, such as the Fresno station, already under construction.

  Progress is ongoing on the 119-mile Central Valley segment, with construction active from Avenue 19 in Madera County to Poplar Avenue in Kern County. Plans are in place to extend this segment to 171 miles, linking Merced to Bakersfield. In 2025, the California Cap-and-Invest Program was approved to provide $1 billion annually through 2045, totaling $15 billion for the project.

  The High-Speed Rail Authority's 2025 Supplemental Project Update Report suggested refinements to expedite delivery and attract private investment. The Draft 2026 Business Plan, released in February 2026, includes scenarios for the Merced-to-Bakersfield segment and a new Merced station location.

  While Senate Bill 198 (2022) prioritizes the Merced–Bakersfield segment, the report recommends delaying the Madera–Merced section due to financial concerns and focusing on the Madera–Gilroy connection to enhance ridership and revenue.

FIGURE 2-11
Gold Runner System and Thruway Bus



Source: MCAG 2026 RTP/SCS

FIGURE 2-12
California High-Speed Rail Proposed Statewide Alignment



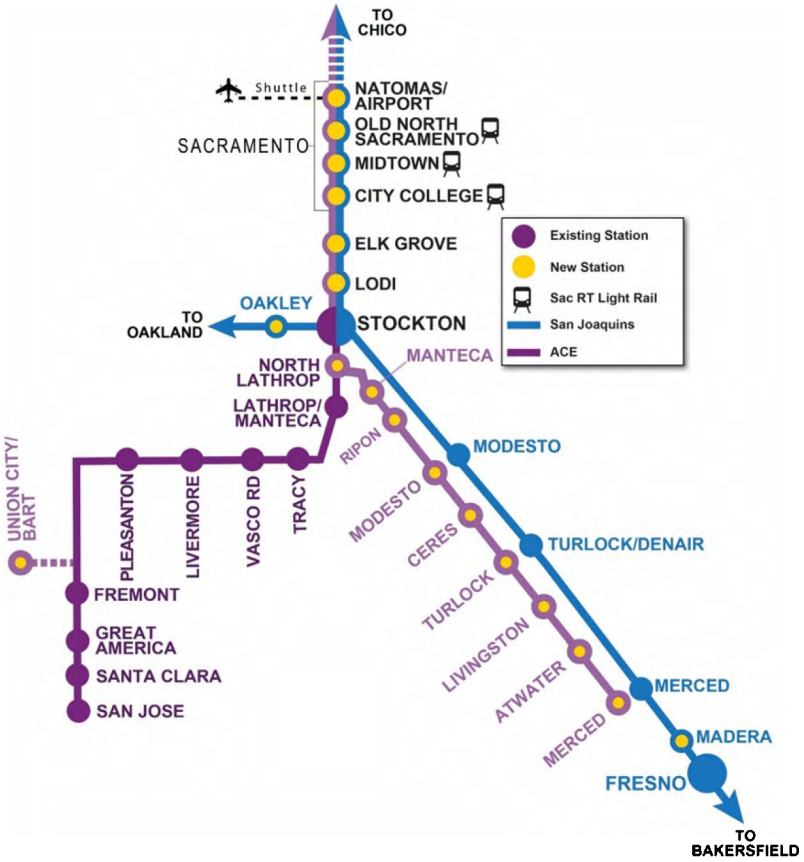
Source: https://hsr.ca.gov/project-overview/maps/ Retrieved on 3/30/26

- Altamont Corridor Express
  The Altamont Corridor Express (ACE) is a commuter rail service connecting the Central Valley to the Bay Area, currently operating between Stockton and San Jose. It provides a reliable alternative to congested highways like I-580 and I-680, linking residents to major employment centers.

Operated by the San Joaquin Regional Rail Commission (SJRRC), ACE aims to expand service frequency and geographic coverage.

ACE service is planned to be extended south to Modesto, Ceres, Livingston, Atwater, and Merced. This extension, when built, will provide commuter-oriented passenger rail service connecting Merced and Stanislaus Counties directly to the Bay Area, supported by new track, rail infrastructure, and capital improvements identified in SB 132 (reference Figure 2-13). The extension is being advanced in phases, with segments in various stages of development and construction. Once complete, the expanded ACE service is expected to improve regional connectivity, enhance access to jobs and education, reduce reliance on long-distance car travel, and provide important connections to future high-speed rail service in Merced.

FIGURE 2-13
ACE Expansion Project Map



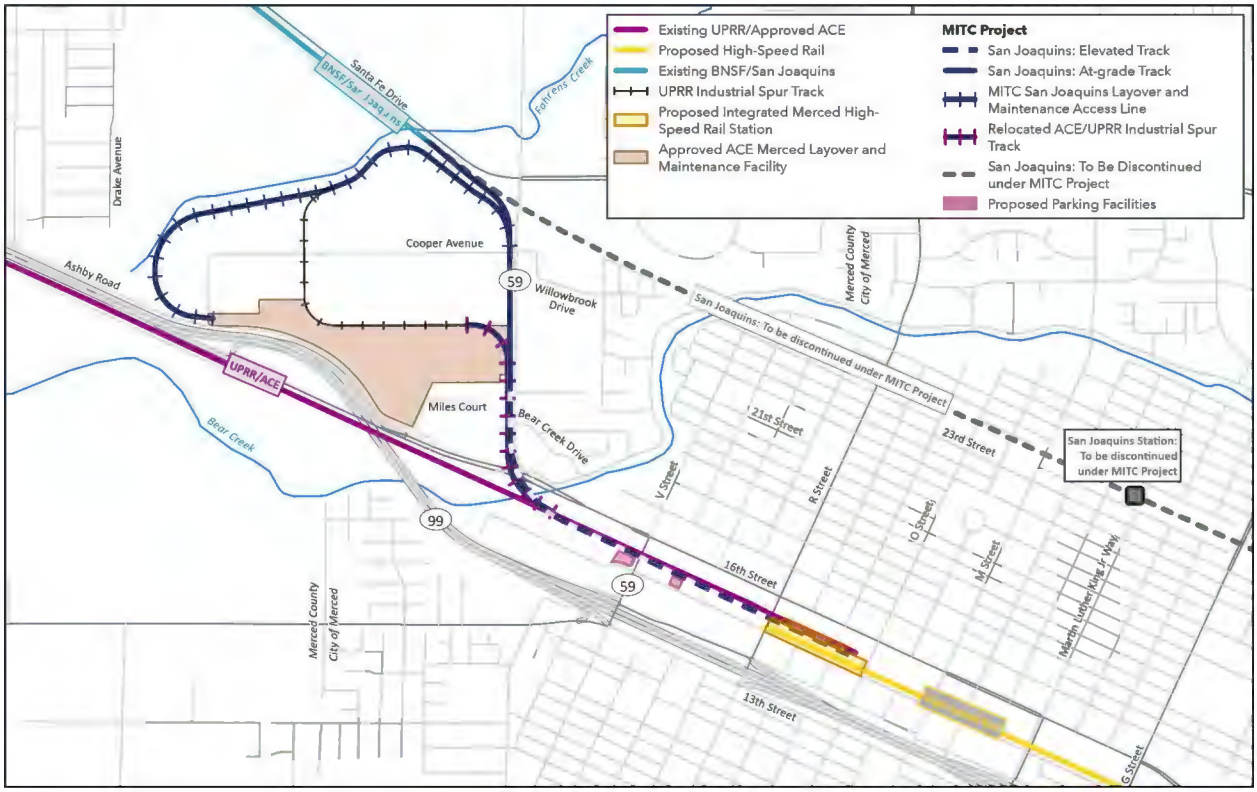
Source: MCAG 2026 RTP/SCS

- Merced Intermodal Track Connection (MITC)

  The Merced Intermodal Track Connection (MITC) aims to relocate the Gold Runner station from 24th Street to a new integrated intermodal station near R and O Streets (reference Figure 2-14). This project will consolidate intercity, commuter, and future high-speed rail services into a single hub, improving transfers among the San Joaquins, Altamont Corridor Express (ACE), and high-speed rail.

  To facilitate this, a new rail connection to the Burlington Northern Santa Fe (BNSF) corridor will be built, along with shared-platform infrastructure. The San Joaquin Joint Powers Authority (SJJPA) deems this project essential for future regional rail operations, enhancing mobility and connections within the statewide rail network.

FIGURE 2-14
Merced Intermodal Track Connection (MITC)

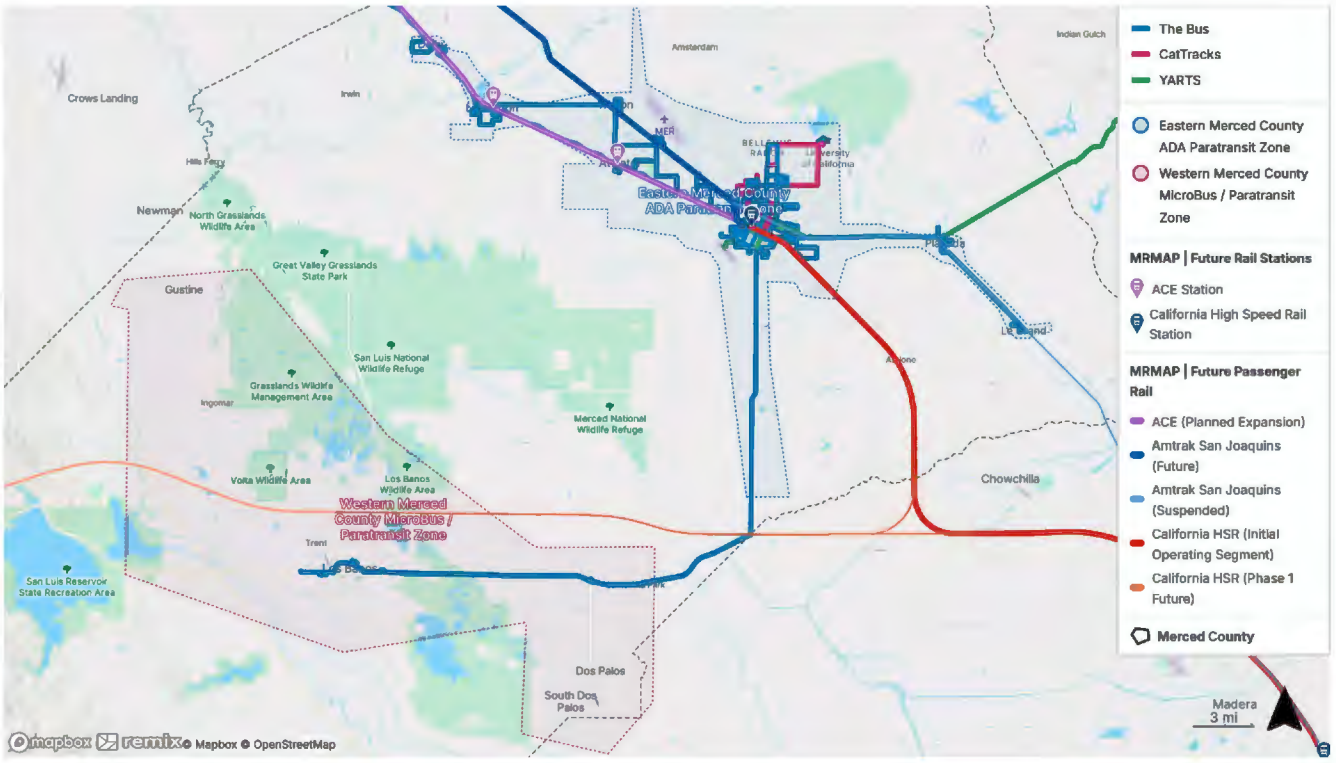


Source: Merced Intermodal Track Connection (MITC) Project – San Joaquin Joint Powers Authority Accessed June 4, 2025.

✓ **Transit**

A range of transit services operate throughout Merced County (Figure 2-15), reflecting the system's steady evolution since its introduction in 1974. What began as a service primarily focused on meeting the essential mobility needs of transit-dependent populations has expanded in both availability and geographic coverage over time. Today, public transportation plays an increasingly important role in the county's mobility network, serving a diverse range of users, including commuters, students, seniors, and individuals with disabilities, while supporting broader goals related to accessibility, connectivity, and system efficiency.

FIGURE 2-15
Transit Services in Merced County



➢ The Bus

In 1996, Merced County Transit, known as "The Bus," was created to provide a consolidated public transit system, previously managed independently by local jurisdictions. A Joint Powers Authority (JPA) was formed among the County of Merced and several cities to coordinate transit services.

Initially managed by the County's Department of Public Works, control was transferred to the Transit Joint Powers Authority (TJPA) on July 1, 2010. The TJPA operates Merced County's transit network, featuring 15 fixed-route lines and offering paratransit services for eligible individuals.

The Bus runs Monday through Friday from 6:00 a.m. to 8:00 p.m., and weekends from 8:00 a.m. to 6:00 p.m. It operates a fleet of 68 vehicles, including 41 for fixed routes and 27 for paratransit.

In 2021, the MCAG Governing Board expanded the Measure V free fare program to include paratransit, allowing seniors, veterans, and ADA-eligible riders to use paratransit services without paying a fare. In 2019, a partnership with Merced College introduced the 'MC Bus 4 Me' program, enabling students to ride The Bus for free by paying a semester fee.

- The Micro Bus

  The Micro Bus provides on-demand microtransit service within westside communities in Merced County, including Gustine, Santa Nella, Los Banos, and Dos Palos. The service is integrated with the Los Banos Commuter fixed-route, which connects these communities to the broader transit network.

  Microtransit combines elements of ride-hailing and traditional public transit, operating within a defined service area with designated virtual stops approximately every quarter mile. Compared to fixed-route service, it offers greater flexibility by allowing riders to request trips on demand through a mobile app, website, or by contacting customer service.

  The Micro Bus also provides complementary paratransit service, offering origin-to-destination transportation for ADA-certified passengers, with the option to schedule trips in advance.

- Yosemite Area Regional Transportation System (YARTS)

  Yosemite National Park experiences a growing number of visitors each year, leading to increased travel demand, especially during peak seasons. To manage this, Mariposa, Merced, Mono, Tuolumne, and Madera Counties, along with the City of Fresno, formed the Yosemite Area Regional Transportation System (YARTS) Joint Powers Authority (JPA) in 1999. The YARTS Board, consisting of representatives from these areas, oversees the transit system.

  YARTS provides year-round service on Highway 140 and seasonal service (May - September) on Highways 41, 120, and 395/120E. Its mission is to offer a reliable alternative to driving that eases congestion and minimizes environmental impacts, without replacing auto access.

  MCAG supports YARTS by handling administrative tasks, managing bus stop improvements, and

developing outreach materials.

- UC Merced CatTracks

  CatTracks, operated by the University of California, Merced, serves the mobility needs of the UC Merced community by offering transit service to students, faculty, and staff with a valid CatCard.

  The Bus provides a fixed-route service between UC Merced and downtown Merced every 40 minutes, funded by UC Merced, allowing students to ride fare-free.

  In 2022, MCAG's Short Range Transit Plan suggested exploring coordination between The Bus and CatTracks. In partnership with UC Merced, the UC Merced Transit Coordination Study was completed in November 2024, assessing existing services and potential benefits and challenges of service coordination.

- Other Transit Providers
  - VIA Trailways

    VIA Trailways provides charter transportation services to private groups throughout California and surrounding states. The company operates a fleet of approximately 20 motorcoaches and five large-capacity vans, serving a variety of group transportation needs, including tours, corporate travel, school trips, and special events.

  - Greyhound Bus Lines

    The Greyhound Trailways bus lines are a combined national bus carrier providing service in and through the county. Bus depots are located in Merced and Los Banos. Some of the buses scheduled to depart from these two depots will stop in other cities within the county.

  - Social Service Transportation Providers

    Various social service providers throughout Merced County offer specialized transportation services for their clients. These services tend to address needs that public transit cannot reasonably meet, including evening service, non-emergency medical transport, and job-training transport, to name a few.

  - Merced County Area Agency on Aging

    The Merced County Area Agency on Aging (AAA) Senior Transportation Program provides a funding subsidy to disabled and older adults, ages 60-61; once seniors reach age 62, transit is provided by Measure V at no cost to the riders.

- Zero Emission Investments

  The Transit Joint Powers Authority for Merced County ("The Bus") is transitioning to zero-emission

bus service through investments in battery electric and hydrogen fuel cell technologies. The Zero-Emission Transition Facility Infrastructure Project aims to modernize operations to support a fully zero-emission fleet by 2040, with construction expected to begin in 2026. This project will retrofit the main transit facility to support battery-electric charging and hydrogen fueling, including installing 21 chargers and essential upgrades.

The Bus is also introducing hydrogen fuel cell electric buses for routes where battery-electric options may not be practical. These enhancements will reduce maintenance costs and improve reliability for transit-dependent communities.

Senate Bill 125 (SB 125), enacted in 2023, provides funding to California transit agencies to support service maintenance and the shift to zero-emission fleets. MCAG will receive approximately $33.6 million over four years, distributing funds to The Bus and YARTS for zero-emission initiatives, infrastructure development, and transit service expansion. These investments will improve service reliability, cut greenhouse gas emissions, and promote a sustainable transit system.

- Transit Planning

  - Unmet Transit Needs Process
    MCAG annually monitors whether transit needs are being met for the citizens of Merced County, as is required by Section 99401.5 of the California Transportation Development Act (TDA). The TDA governs the administration of a variety of funding programs. MCAG has established the Social Services Transportation Advisory Council (SSTAC). The SSTAC meets on a quarterly basis and is tasked with the following:
    - Annually participate in the identification of transit needs in the jurisdiction, including unmet transit needs that may exist within the jurisdiction of the council, and that may be reasonable to meet by establishing or contracting for new public transportation or specialized transportation services or by expanding existing services.
    - Annually review and recommend action by the transportation planning agency for the area within the jurisdiction of the council, which finds by resolution, one of the following: that (A) there are no unmet transit needs, (B) there are no unmet transit needs that are reasonable to meet, (C) there are unmet transit needs, including needs that are reasonable to meet.
    - Advise the transportation planning agency on any other major transit issues, including the coordination and consolidation of specialized transportation services.

- Coordinated Public Transit-Human Services Transportation Plan
  The Coordinated Public Transit-Human Services Transportation Plan is required by the Section 5310 program, which supports enhanced mobility for seniors and individuals with disabilities. According to federal transit law reauthorized by the Infrastructure Investment and Jobs Act, projects funded through Section 5310 must be included in a locally developed plan that involves participation from seniors, individuals with disabilities, transportation and human service providers, and the public. This plan also establishes the framework for determining project eligibility for various federal programs, including Section 5310.

- Short Range Transit Plan
  The Merced County 2022 Short-Range Transit Plan (SRTP) is a planning document created by MCAG and the Transit Joint Powers Authority (TJPA) to meet Federal Transit Administration (FTA) requirements. Updated every four to five years, it maintains eligibility for federal and state transit funding and provides a framework for transit planning, operations, and investments.

  The 2022 SRTP involved a thorough analysis of current transit services and travel needs in Merced County, resulting in data-driven recommendations to improve the efficiency and quality of transit services.

✓ **Active Transportation**

Active transportation is essential for a safe, efficient, and sustainable transportation system in Merced County. Investments in bicycle and pedestrian infrastructure reduce greenhouse gas emissions by reducing vehicle trips and miles traveled, while enhancing mobility for residents of all ages and abilities. This includes not just walking and biking, but also skateboarding, electric bicycles, scooters, and wheelchairs. Nearly every trip involves some form of active transportation, highlighting its significance.

Furthermore, active transportation investments reduce traffic congestion, improve air quality, and boost public health and quality of life. The following sections outline the existing active transportation facilities in Merced County.

- Regional Active Transportation Plan
  In 2024, MCAG adopted the Regional Active Transportation Plan (Regional ATP) to develop a safe and accessible network for walking, biking, and other active transportation in Merced County. The plan evaluates current conditions for bicycling and walking and identifies strategies to improve safety, reduce fatalities, enhance public health, and minimize reliance on single-occupancy vehicles. It combines infrastructure recommendations, policy guidance, education, and equity-

focused strategies to achieve coordinated improvements across the region.

Merced County currently has about 42.1 miles of multi-use paths and 108.3 miles of designated bicycle facilities. During the planning process, MCAG engaged the community through surveys, public comments, and stakeholder focus groups, revealing key needs in active transportation infrastructure, safety, accessibility, and community health.

- **Safety for Vulnerable Users:** Improve safe and accessible routes to schools and key destinations for children, older adults, and people with disabilities.
- **Connected and Complete Networks:** Close gaps in sidewalks, bikeways, and multi-use paths to create a cohesive regional system.
- **Accessibility Improvements:** Expand ADA-compliant infrastructure, including curb ramps, tactile features, and accessible signals.
- **Safety Enhancements:** Address lighting deficiencies, implement traffic calming measures, and improve pedestrian crossings.
- **Facility Conditions and Comfort:** Repair pavement and develop separated, low-stress bikeways to improve safety and user experience.
- **Multimodal Connectivity:** Strengthen walking and biking connections to transit, rail, and key destinations, including parks and open space.
- **Supportive Amenities:** Increase access to secure bicycle parking and related facilities.
- **Education and Capacity:** Expand community education programs and provide additional funding, technical assistance, and staff resources to support project delivery.
- **Rural Needs:** Improve access to emergency services and safe travel options in rural areas.

Responding to these identified needs requires a comprehensive approach to bicycle network development. The following section outlines the types of bicycle facilities that comprise a complete system and serve as the foundation for planned improvements across the region.

- Bicycle Facilities

  Several types of bikeways and supporting facilities come together to form a complete bicycle network. Bikeways are classified in Chapter 1000 of the Highway Design Manual (Caltrans, 2015) into four primary types:
  - Class I bike paths (including shared-use paths and trails)
  - Class II bike lanes (including Class IIB buffered bike lanes)
  - Class III bike routes (including Class IIIB bicycle boulevards)
  - Class IV separated bikeways

The existing and proposed bicycle facilities for each of the six cities, as identified in the 2024 Regional ATP, are provided in Chapter 3 of the MCAG 2026 RTP/SCS. Additional maps, including

those depicting facilities in unincorporated communities, are provided in the Regional ATP.

- Pedestrian Facilities

  Mapping existing sidewalks at a comprehensive, countywide level is challenging due to inconsistent data availability, varying documentation standards across jurisdictions, and the absence of centralized inventories. While sidewalks are typically included in newer developments, they are often intermittent or entirely absent in older neighborhoods and rural communities, resulting in gaps in the pedestrian network. Details on pedestrian facilities in each jurisdiction are provided in Chapter 3 of the MCAG 2026 RTP/SCS.

- Active Transportation User Safety

  Safety is crucial to a successful active transportation system and vital to equity and mode shift goals. Well-designed facilities ensure that all users, especially those in underserved communities, children, older adults, and individuals with disabilities, can travel comfortably and confidently. Safety concerns, such as high vehicle speeds and inadequate infrastructure, disproportionately affect vulnerable populations and hinder walking and biking. Improving safety reduces perceived risks and encourages more people to adopt active transportation. Investing in safer streets through traffic-calming measures, protected bikeways, and enhanced crossings reduces collisions and injuries while fostering healthier, more active communities.

- Multijurisdictional Local Road Safety Plan

  MCAG's Multijurisdictional Local Road Safety Plan (LRSP) is a strategic framework for addressing roadway safety concerns in the region. Developed with local jurisdictions and community input, it analyzes collision patterns to identify high-risk locations and prioritize improvements for all roadway users, including drivers, pedestrians, and bicyclists.

  The LRSP focuses on implementing engineering countermeasures, proven strategies to reduce crash frequency and severity, such as enhanced pedestrian crossings, curb extensions, and traffic calming measures. By adopting a Safe System approach, the LRSP aims to design roadways that anticipate human error and minimize serious injuries during crashes.

- Safety Education Campaign

  MCAG's Safety Education Campaign is a new initiative aimed at improving roadway safety by addressing behavioral factors that lead to collisions. While infrastructure improvements from the LRSP are vital, many safety issues stem from user behaviors such as speeding, distracted driving, and unsafe practices. Through targeted outreach and education, MCAG seeks to influence behavior, enhance safety, and promote responsible interactions among all roadway users, ultimately supporting safer travel and advancing regional mobility goals.

✓ **Aviation**

The Merced region has five publicly owned airports: Gustine, Castle, Los Banos Municipal, and Merced Regional Airport, with Turlock Municipal Airport also in the area but owned by the city of Turlock in Stanislaus County. There are also eight privately-owned airfields that allow public use (reference Figure 2-16).

FIGURE 2-16
Merced County Public Airports



Source: MCAG 2026 RTP/SCS

MCAG is launching a Safety Education Campaign to improve roadway safety by addressing behavioral factors like speeding, distracted driving, and unsafe walking or biking. This initiative aims to enhance safety outcomes, reduce conflicts, and promote responsible interactions among all roadway users, aligning with regional mobility goals.

Airport facilities in Merced County currently meet public aviation needs, while land use compatibility with these airports is governed by the Merced County Land Use Compatibility Plan (ALUCP), adopted in 2012 and covering all five public-use airports.

A list of airports and related data is provided in Chapter 3 of the MCAG 2026 RTP/SCS.

✓ **Integrated Transportation Planning**

Merced County's transportation system relies on infrastructure investments and the intersection of transportation, land use, environmental needs, and travel behavior. To improve mobility, access, and safety, a more integrated approach is essential. This includes advancing complete streets, promoting land use patterns that reduce travel demand, meeting air-quality and greenhouse-gas standards, and enhancing system performance through demand management strategies. Together, these efforts foster a more efficient and connected transportation system.

- Complete Streets

  Complete streets is a transportation planning approach that ensures roadways are safe and accessible for all users, including pedestrians, bicyclists, transit riders, motorists, and individuals of all ages and abilities. In California, this is mandated by state laws such as Assembly Bill 1358, which requires cities and counties to incorporate complete streets principles into their general plans.

  Metropolitan Planning Organizations (MPOs) reinforce this through RTP Guidelines that promote multimodal considerations in long-range planning. Complete streets support a balanced transportation system, enhancing safety, accessibility, and encouraging walking, bicycling, and transit use. This approach also aims to reduce vehicle miles traveled (VMT), improve air quality, and support regional goals related to sustainability, equity, and public health.

- Supportive Land Use Development

  The Merced region has experienced growth in developments that promote walking, biking, and transit use, driven by its density and mixed-use features. These projects also aim to reduce vehicle use and miles traveled, aligning with the RTP/SCS objectives.

- Air Quality Requirements

  Regional transportation planning must address air quality requirements under the federal Clean Air Act, which establishes National Ambient Air Quality Standards (NAAQS) for pollutants such as ozone and particulate matter. In areas that do not meet these standards (nonattainment areas), such as the San Joaquin Valley, MPOs are required to demonstrate that their RTP and Federal Transportation Improvement Program (FTIP) conform to the State Implementation Plan (SIP),

which outlines how the region will achieve and maintain compliance with federal air quality standards. This process, known as transportation conformity, ensures that planned transportation investments do not worsen air quality, exceed emissions budgets, or delay achievement of meeting standards. The Air Quality Conformity Analysis for the 2026 RTP and 2027 FTIP is included in Appendix A of the MCAG 2026 RTP/SCS.

In California, federal requirements are enhanced by state policies such as Senate Bill 375, which requires MPOs to develop a Sustainable Communities Strategy (SCS) as part of the RTP. The SCS focuses on integrating land use and transportation planning to reduce GHG emissions from vehicles. Together, these requirements influence regional transportation planning, project prioritization, and investment strategies aimed at reducing vehicle miles traveled and promoting cleaner travel options.

- Travel Demand Management

  Travel Demand Management (TDM) programs aim to reduce single-occupancy vehicle use by promoting alternative travel modes to decrease congestion, improve air quality, and support public health. TDM strategies enhance system efficiency by providing travelers with reliable, real-time information.

  In the San Joaquin Valley, the Air Pollution Control District's eTRIP Rule (Rule 9410) mandates larger employers to implement programs that encourage carpooling and transit use. MCAG supports these efforts through the "Dibs" rideshare platform, vanpool options like CalVans, and partnerships with services such as Enterprise, all of which help reduce vehicle miles traveled (VMT) and promote regional air quality and sustainability.

✓ **Emerging Technologies**

There is little consensus on the future of transportation, even among experts, but there is general agreement that emerging technologies will significantly impact it. Innovations like navigation apps, electric vehicles, and autonomous vehicles are already transforming travel.

Understanding the full implications of these technologies is still a work in progress, making definitive transportation planning challenging. As a result, plans may need to be more flexible and updated more frequently, recognizing new partners who may not align with traditional agencies. Some challenges transportation technologies could help address include:

- Providing first-mile and last-mile transit service for transit users to connect underserved communities to jobs
- Enabling those who cannot drive to use transportation services, increasing access to resources, and supporting independence

- Coordinating data collection and analysis across systems and sectors
- Limiting the impacts of climate change and reducing carbon emissions
- Facilitating the movement of goods into and within a city
- Reducing inefficiency in truck parking systems and payment
- Optimizing traffic flow on congested freeways and arterial streets
- Improving safety

The following sections focus on key emerging transportation technologies and their potential implications for the regional system. These innovations may enhance mobility options, improve efficiency, and support regional goals, but they also require a flexible planning approach to address any unexpected negative impacts.

- Urban Air Mobility

  Urban Air Mobility (UAM) is a developing concept that leverages electric propulsion and vertical takeoff and landing (eVTOL) technology to enable new aerial transportation options. These eVTOL aircraft are designed to be quieter and emit less than traditional helicopters, making them suitable for air taxi services, emergency response, and regional passenger connections. UAM has the potential to enhance connectivity between urban and rural areas, reduce travel times, and spur economic growth, but it also faces uncertainties related to cost, equity, land use, and environmental impacts.

  Successful implementation of UAM requires infrastructure such as "vertiports" for takeoff and landing, as well as integration with existing ground transportation to enable complete journeys. Regulatory frameworks, airspace management, safety standards, and public acceptance are critical for deployment. While the long-term success of UAM is uncertain, advancements suggest it may evolve into a complementary mode within the broader transportation system.

- Autonomous Vehicles

  Autonomous Vehicles (AVs) are being deployed in closed networks, such as campuses and airports, as well as on city streets, with autonomous trucking gaining traction in states like Colorado and Texas. Merced County has a testing site at the Castle Commerce Center, operated by the Transportation Research Center, alongside other facilities in California.

  The deployment of AVs is influenced by federal and state regulations. The National Highway Traffic Safety Administration (NHTSA) oversees vehicle safety standards, while the California DMV and California Public Utilities Commission regulate AV testing and operations. These frameworks evolve with technological advancements.

To prepare for broader AV integration, agencies should consider strategies like maintaining clear road markings, evaluating dedicated lanes in busy corridors, upgrading traffic signals, and rethinking parking designs to accommodate shared and autonomous mobility services.

AVs are closely linked to connected vehicle technologies, enabling real-time data exchange that improves traffic flow and safety. While the timeline for widespread AV adoption is uncertain, ongoing monitoring and planning will be essential for accommodating these evolving technologies.

- Transportation-as-a-Service and Microtransit

  Transportation-as-a-Service (TaaS), also referred to as Mobility-as-a-Service (MaaS), represents a growing shift away from reliance on personally owned vehicles toward shared, on-demand mobility options. Common examples include Transportation Network Companies (TNCs), such as Uber and Lyft, which connect passengers to drivers through mobile applications or web-based platforms. These services offer flexible, demand-responsive travel and have become an increasingly important component of the broader transportation system. Public transit agencies are also exploring how similar on-demand models can complement fixed-route services by improving first- and last-mile connections and expanding access to areas that are difficult to serve efficiently with traditional transit.

  TaaS and microtransit services offer several potential benefits, including increased mobility options, greater flexibility, and improved system efficiency. By providing alternatives to single-occupancy vehicle travel, these services can reduce the need for personal vehicle ownership and influence land use patterns, including reduced parking demand and changes in curb space management. However, there are also potential challenges, including impacts on traditional transit ridership and the possibility of increased VMT due to increased demand and deadhead trips, which are trips that occur when a vehicle operates without passengers, such as when repositioning or traveling to pick up a rider.

  In Merced County, “The Bus” operates an on-demand microtransit service known as The Micro Bus, serving the communities of Gustine, Santa Nella, Los Banos, and Dos Palos. The Micro Bus provides flexible service through a network of virtual stops spaced approximately one-quarter mile apart, allowing riders to request trips to and from nearby locations. Trips can be scheduled via a mobile app, website, or by phone, making the service accessible to a wide range of users. By offering a more customized and responsive alternative to fixed-route transit, MicroTransportation-as-a-Service (TaaS), also known as Mobility-as-a-Service (MaaS), marks a shift from personal car ownership to shared, on-demand mobility options such as Uber and Lyft. These services enhance flexible travel and complement public transit by improving first- and last-mile connections, especially in hard-to-reach areas.

TaaS and microtransit services offer benefits such as increased mobility, flexibility, and system efficiency, while potentially reducing personal vehicle ownership and reshaping land use patterns. However, challenges include impacts on traditional transit ridership and potential increases in vehicle miles traveled (VMT) due to demand and deadhead trips.

In Merced County, "The Bus" operates The Micro Bus, an on-demand microtransit service for Gustine, Santa Nella, Los Banos, and Dos Palos. With virtual stops and trip requests via a mobile app, website, or phone, The Micro Bus provides a tailored alternative to fixed-route transit, enhancing mobility in lower-density areas and connecting users to broader transit networks. Bus helps improve mobility in lower-density areas and enhances connectivity to the broader transit network.

- Electrification and Charging Infrastructure

  Transportation electrification is essential for reducing greenhouse gas emissions and improving air quality. Transitioning from internal combustion engine vehicles to electric vehicles (EVs) provides significant environmental benefits, particularly as California decarbonizes its electricity grid. Electrification also enhances public health, especially in communities impacted by vehicle emissions.

  At the federal level, efforts like the Alternative Fuel Corridors program aim to develop a national charging infrastructure for EVs along major highways. Funding initiatives like the National Electric Vehicle Infrastructure (NEVI) and Charging and Fueling Infrastructure (CFI) programs focus on establishing fast-charging stations. California complements these initiatives with policies that promote EV adoption and infrastructure development.

  For regional planning, expanding charging infrastructure, especially in rural and disadvantaged areas, is vital for equitable access. Effective implementation requires coordination with utilities and local partners regarding grid capacity and land use.

  In recognition of these challenges, MCAG developed an Electric Vehicle Readiness Plan in 2023 that evaluated EV adoption rates, funding sources, and public support, along with site recommendations. As EV use increases, the RTP/SCS must consider the impact of electrification on travel behavior and infrastructure needs, ensuring alignment with regional mobility and sustainability goals.

- Hydrogen Fuel Technologies

  Hydrogen fuel cell technology is emerging as a viable option for decarbonizing transportation,

especially for long-distance or high-elevation routes where battery-electric vehicles face limitations. Fuel cell electric vehicles generate electricity through a reaction between hydrogen and oxygen, producing only water vapor. They offer longer ranges and faster refueling times, making them suitable for challenging conditions.

In the Merced region, hydrogen technology is being considered for transit services, particularly for YARTS, which is evaluating hydrogen fuel cell buses for routes to Yosemite National Park. These buses can better handle long distances and elevation changes compared to battery-electric options, which struggle with limited charging opportunities. However, deploying hydrogen technology will require substantial investment in fueling infrastructure and coordination with regional partners. Ultimately, hydrogen is expected to complement battery-electric technologies as the region moves toward a zero-emission transportation system.

Financial Element

The Financial Element identifies the funding sources, revenue projections, and investment assumptions that support implementation of the RTP/SCS through 2049. This section summarizes anticipated transportation revenues and demonstrates how funding is allocated to support regional transportation needs and priorities. A complete list and explanation of funding sources is provided in Chapter 6 of the MCAG 2026 RTP/SCS. Project lists for the 2026 RTP/SCS are included in Appendix B of the MCAG 2026 RTP/SCS.

The estimated revenue projections for the 2026 RTP/SCS include current and anticipated revenue sources that are reasonably expected to be available through the 2049 planning horizon. Revenue estimates are primarily based on established historical trends.

Federal and state regulations require the RTP/SCS to be fiscally constrained, meaning the total cost of planned transportation investments cannot exceed reasonably anticipated revenues. Projects that cannot demonstrate fiscal constraint are not included in the financially constrained plan; however, an unconstrained project list is included for illustrative purposes to identify additional transportation improvements that would benefit the region if additional funding resources become available. Both the fiscally constrained and unconstrained project lists for the 2026 RTP/SCS are included in Appendix B of the MCAG 2026 RTP/SCS.

Projects included in the RTP/SCS are identified through a variety of planning efforts, funding programs, agency initiatives, and local nominations, including:

- ✓ Previously identified projects resulting from vetted planning processes, such as the Regional Active Transportation Plan and Local Road Safety Plans.

- ✓ Previously identified projects included as a part of a specific local program or process, such as Measure V and the SB 125 transit program.
- ✓ Local selection; maintenance and most asset management projects are selected by local jurisdictions.
- ✓ Projects identified by Caltrans, such as the State Highway Operations and Protection Program and the Highway Bridge Program projects.
- ✓ Grants received by various agencies in the region, such as the Charging and Fueling Infrastructure (CFI) grant awarded to the SJV Air District and the Safe Streets and Roads for All (SS4A) grant obtained by the University of California, Merced.
- ✓ Local agency nominations; intersection improvements, traffic flow improvements, capacity increasing projects, and various other transportation enhancements are nominated for inclusion in the RTP.
- ✓ Continuation of long-term projects, such as major transit facilities and capacity-increasing projects like the completion of SR 99.

Depending on the structure and goals of the various funding sources and programs, projects may be prioritized and selected based on benefit and performance, technical evaluation, local engagement and input, or through state or federal competition.

In addition, all non-exempt transportation projects included in the RTP/SCS are incorporated into the regional air quality conformity analysis prepared by MCAG. Transportation conformity must be demonstrated for federally funded or federally approved projects to advance toward implementation. Certain project types, such as bicycle and pedestrian facilities, roadway maintenance, and other exempt projects, are excluded from conformity analysis because they are categorically exempt under federal air quality regulations due to their neutral or beneficial effect on emissions.

- ✓ **Funding Shortfalls**

  There is a continuing need to maintain and improve infrastructure, complete new safety projects, improve usability, and improve the system with new technologies and innovations. Many projects with funding shortfalls are explicitly shown in the RTP/SCS, but many are unquantified. Table 2-2 presents funding shortfalls by project type.

  Well before 2049, the Merced region will continue to face significant transportation investment needs beyond available and reasonably anticipated funding. These needs include expanded passenger rail service, grade separations, bridge and roadway rehabilitation and capacity improvements, enhanced transit and active transportation networks, and infrastructure and technology investments to support emerging mobility options, including connected and autonomous vehicles. Addressing these needs will require sustained investment, strategic prioritization, and continued pursuit of new and innovative funding sources.

TABLE 2-2

Transportation System Funding Shortfalls

Project Type	Source/Notes	Amount
Active Transportation	Regional ATP	$197,200,000
Mass Transportation	Unconstrained Project List	$1,211,000,000
Overcrossings	Unconstrained Project List	$2,200,000,000
Safety Projects	Local Road Safety Plans	60 projects identified (without cost estimates)

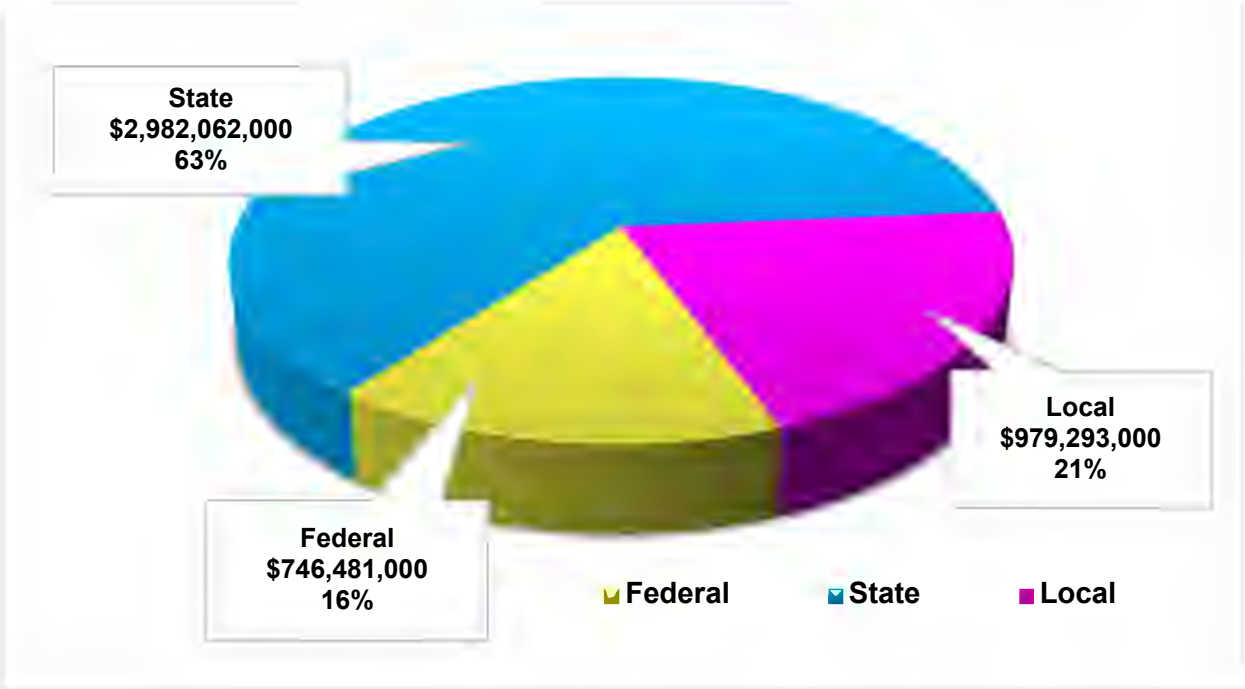
Source: MCAG 2026 RTP/SCS

✓ **Summary of Estimated Revenues and Expenditures in the 2026 RTP/SCS**

Figure 2-17 below illustrates total estimated revenues by source. State funds contribute the largest share, followed by local funds (primarily Measure V), then federal funds. There are several significant federal discretionary programs the region will compete for in the future that could expand its share, but they were not included in the revenue estimate.

FIGURE 2-17

Estimated Revenues for the 2026 RTP by Funding Source

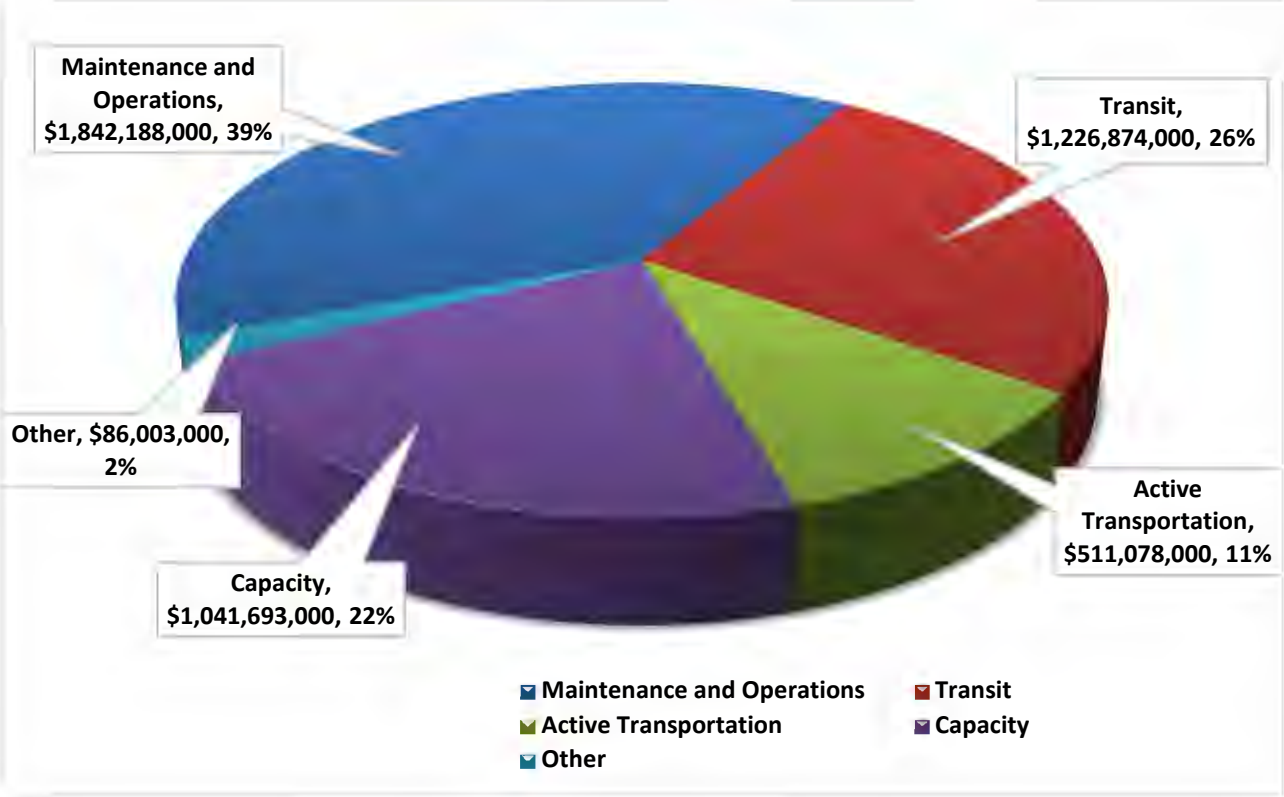


Source: MCAG 2026 RTP/SCS

Figure 2-18 illustrates the categorical expenditures in the 2026 RTP/SCS. These are further broken down by more specific project types in the project list included in Appendix B of this PEIR. For example, Maintenance and Operations includes road rehabilitation projects, safety projects, traffic flow improvements, and technology improvements such as traffic management systems. The Other category includes electrification projects, plans, and programs.

FIGURE 2-18

Estimated Expenditures by Project Category



**Maintenance and Operations includes Safety Projects.*
**Other includes multipurpose projects, electrification projects, programs, and plans.*
Source: MCAG 2026 RTP/SCS

By cost, Maintenance and Operations (39%) has the largest share of expenditures, followed by Transit (26%), then Capacity projects (22%), and Active Transportation projects (11%). The category Other (2%) accounts for the remainder.

Environmental Justice (EJ)

A critical component of MCAG's 2026 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) is the Environmental Justice (EJ) analysis. An EJ analysis is intended to protect low-income and minority individuals in Merced County by identifying and addressing any disproportionately high and adverse effects of the 2026 RTP/SCS on minority and low-income populations (i.e., EJ communities).

The goal is to achieve an equitable distribution of benefits and burdens across all communities in the County, including EJ communities.

EJ means both objectively evaluating the transportation projects and expenditures proposed in the 2026 RTP/SCS and ensuring full and fair participation by all potentially affected communities in the 2026 RTP/SCS decision-making process. This EJ analysis covers the technical methodologies used to measure and evaluate the distribution and effects of the elements contained within the 2026 RTP/SCS. The analysis focuses particularly on the costs and benefits of these projects on EJ communities. MCAG's outreach efforts to ensure full and fair participation by impacted communities are described elsewhere in the RTP/SCS.

The Social Equity Analysis for the 2026 RTP/SCS shows that disadvantaged communities (DAC) in Merced County will benefit from investments, performing comparably or better than non-DAC areas across key measures. By 2035, DAC areas are expected to have shorter average commute times, receive more transportation investments, and gain significantly more bicycle and pedestrian infrastructure. Although DAC areas may have more housing exposed to transportation-related air pollution, the increasing use of electric vehicles in California is expected to reduce this exposure. Overall, the analysis confirms that the 2026 RTP/SCS promotes equitable planning, improving mobility, accessibility, public health, and quality of life for all residents, aligning with the region's vision for a sustainable transportation system.

MCAG will continue to adhere to implementing EJ principles in all future planning processes. Additionally, MCAG is committed to the continual improvement of its EJ performance measures used to evaluate and analyze the benefits and burdens of its transportation planning efforts on EJ populations within the region.

2.6 RELATIONSHIP TO OTHER PLANS AND PROGRAMS

The RTP/SCS is a planning guide containing transportation policy and projects through 2049. The Plan includes programs and policies for transportation management, transit, bicycles and pedestrians, roadways, passenger rail, freight, and finances. The RTP's primary use is as a regional long-range plan for federally funded transportation projects. It also serves as a comprehensive, coordinated transportation

plan for all governmental jurisdictions within the region. Numerous jurisdictions have different transportation implementation responsibilities under the Plan, including Caltrans, Merced County, and each city within the County. RTPs are planning documents developed by RTPAs and Metropolitan Planning Organizations (MPOs) in cooperation with Caltrans and other stakeholders. The plans are developed to provide a clear vision of regional transportation goals, policies, objectives, and strategies. Specifically, the Merced County RTP/SCS has been developed to address the following:

- ✓ Assessment of current modes of transportation and the potential of new travel options within the region.
- ✓ Prediction of future needs for travel and goods movement.
- ✓ Identification and documentation of specific actions necessary to address the region's mobility and accessibility needs.
- ✓ Identification of guidance and documentation of public policy decisions by local, regional, state, and federal officials regarding transportation expenditures and financing.
- ✓ Identification of needed transportation improvements.
- ✓ Promotion of consistency between the California Transportation Plan, the regional transportation plan, and other transportation plans developed by cities, counties, districts, private organizations, tribal governments, and state and federal agencies in responding to statewide and interregional transportation issues and needs.
- ✓ Providing a forum for participation and cooperation and facilitating partnerships that reconcile transportation issues which transcend regional boundaries.
- ✓ Involvement of the public, federal, state, and local agencies, as well as local elected officials, early in the transportation planning process to include them in discussions and decisions on the social, economic, air quality, and environmental issues related to transportation.

Further, the RTP/SCS addresses the effects of planned growth and development on the existing and planned transportation system. The resulting analysis documents the existing and future-year (Year 2049) conditions of the multimodal transportation system. Modes studied include highways and arterials, public transit, nonmotorized systems, passenger and freight rail, and aviation. The analysis conducted as part of this PEIR considers the effects of projects and programs outlined in the 2026 RTP/SCS.

2.7 STREAMLINING THE CEQA PROCESS

Under SB 375, general consistency with a CARB-approved SCS allows projects to qualify for two types of CEQA streamlining:

- ✓ **Projects consistent with the SCS or APS.** A residential or mixed-use project consistent with the density and policies in an SCS is not required to discuss (1) growth-inducing impacts; or (2) project-specific or cumulative impacts from cars and light-duty truck trips on global warming or the regional transportation network if the project incorporates the mitigation measures required by an applicable prior environmental document (Pub. Res. Code, § 21159.28, subd. (a) and (b); Gov. Code, § 65080, subd. (b)(2)(l).

- ✓ **Three Types of Streamlining for Transit Priority Projects**. A "transit priority project" (TPP) is created by SB 375 that must meet three requirements: (1) contain at least 50% residential use; (2) have a minimum net density of 20 units per acre; and (3) be located within one-half mile of a major transit stop or high-quality transit corridor included in an RTP (Pub. Res. Code, § 21155, subd. (b).

  A TPP is exempt from CEQA if it is not more than 200 units on not more than 8 acres; can be served by existing utilities; does not affect historical resources; buildings are 15% more energy efficient than required and the project is designed to achieve 25 percent less water usage; and the project provides either a minimum of 5 acres/1,000 residents of open space, or housing for moderate, low, or very low income residents (Pub. Res. Code, § 21155.2, subd. (b). A TPP that does not qualify for an exemption may qualify for a sustainable community environmental assessment (SCEA) if the project incorporates mitigation measures, performance standards, or criteria from prior applicable environmental impact reports. An SCEA is similar to a negative declaration under CEQA.

  SB 375 also authorizes the adoption of specific traffic mitigation measures for TPPs, including requirements for traffic control improvements, street or road improvements, transit passes, or other measures to mitigate the traffic impacts of transit priority projects. A TPP does not need to comply with any additional mitigation measures for the traffic impacts of that project if traffic mitigation measures have been adopted. However, it is widely believed that very few development projects in Merced County would qualify as Transit Priority Projects, at least in the near future. TPPs are designed for more urban locations with higher concentrations of development, such as the Bay Area and Southern California. Local jurisdictions retain discretion and will be solely responsible for determining whether any future project is consistent with the SCS. MCAG staff may provide a lead agency with readily available data and documentation to support its findings upon request.

2.8 EIR BASELINE TO DETERMINE SIGNIFICANCE

As previously noted, significant impacts are defined as a "substantial or potentially substantial, adverse change in the environment" (Public Resources Code § 21068). The Program EIR must identify significant impacts expected to result from the implementation of the 2026 RTP/SCS. Significant impacts must be

determined by applying significance criteria to compare the future Plan conditions to the existing environmental setting (CEQA Guidelines § 15126.2(a)). The existing setting and the criteria for determining significance for each environmental resource issue are described in detail in Chapter 3 of this EIR and represent the most recent, reliable, and representative data on current regional conditions. CEQA Guidelines provide that the existing physical conditions at the time the Notice of Preparation ("NOP") is published will "normally" constitute the baseline (Cal. Code Regs., tit. 14, § 15125 "CEQA Guidelines"). The NOP for the MCAG 2026 RTP/SCS was issued on November 19, 2021. However, 2019 is the baseline for purposes of the analysis in this Draft PEIR. While the NOP was released in 2025, the PEIR baseline is considered to be 2023 for the following reasons:

- ✓ MCAG's travel model requires comprehensive land use, travel, and other data, which are built upon baseline land use and travel data. The most recent available land use data used by MCAG when it validated and calibrated its traffic model was from 2023.

- ✓ Because the baseline must be an integrated set of land use, demographic, traffic count, and VMT data, 2023 provides the most complete, integrated data portrait of the existing conditions in the region. In other words, 2023 is the most recent year for which comprehensive land use, demographic, traffic count, and VMT data are available for the Merced region.

However, for some resources, more recent data from the years following 2024 were used as the basis for the analysis. This data, however, is nonetheless representative of 2023 baseline conditions because (i) it was gathered in the years immediately before the NOP was released but since 2023, (ii) it has been updated with additional data as available to provide the most current reflection of existing conditions, and (iii) there have been no substantial changes in county-wide physical conditions – in part due to the economic downturn and the limited residential and commercial development in the area. Therefore, for purposes of this Draft PEIR, and unless otherwise stated, "existing conditions" refers to the on-the-ground physical conditions that are representative of those in 2023.

2.9 CRITERIA FOR SIGNIFICANCE

CEQA gives the lead agency the responsibility to determine whether an adverse environmental effect identified in an EIR should be classified as "significant" or "less than significant." (CEQA Guidelines § 15064(b).) Under Section 15064(b), "the significance of an activity may vary with the setting," and, as a result, an inflexible definition of what constitutes a significant effect is not always possible. The lead agency has discretion to set its own significance criteria, which requires it to make a policy judgment about how to distinguish impacts that are adverse but significant from those that are adverse but not significant. *(Eureka Citizens for Responsible Gov't v City of Eureka (2007) 147 Cal.App.4th 357).* A lead agency may

select a standard of significance based on its judgment about an appropriate standard of significance (*Sierra Club v. City of Orange (2008) 163 Cal. App.4th 523, 541).* The standards of significance used in an EIR may also rely upon policies adopted and implemented by the lead agency *(Mira Mar Mobile Community v. City of Oceanside (2004) 119 Cal. App.4th 477).*

2.10 PROJECT ALTERNATIVES

Urbanization in the region will increase significantly by 2049, regardless of whether or not the 2026 RTP/SCS is implemented. As a result, Chapter 4 of this Draft PEIR includes a comparison between the expected future conditions with implementation of the RTP/SCS and the expected future conditions assuming the 2026 RTP/SCS were not adopted (or a comparison to the No Project Alternative). This evaluation is not included in the determination of significant impacts in the remaining sections of the Draft PEIR, but it provides a perspective on the effects of implementing the 2026 RTP/SCS. In addition, Chapter 4 provides a comparison of three (3) additional RTP/SCS land use and transportation scenarios developed during the preparation of the SCS through an open and engaging public process. The alternative SCS scenarios were designed to:

- ✓ Explore and clearly convey the impact of where the region grows over the project duration.
- ✓ To what extent is growth focused within existing cities and towns?
- ✓ How growth occurs, or the shape and style of the neighborhoods and transportation systems that will shape growth over the project timeline.

The MCAG Policy Board selected Scenario C as the preferred SCS scenario for the Merced County region in 2026. As a result, the 2026 RTP/SCS and this Draft PEIR contain and reflect Scenario C as the preferred SCS scenario for planning purposes. As such, this PEIR describes the Project as the 2026 RTP/SCS (Scenario C), reflecting the planned transportation system described in the RTP and the SCS documented in the RTP/SCS. Both are incorporated in this Draft PEIR by reference. For purposes of this Draft PEIR, Scenarios A and B were identified as Project Alternatives to the Preferred Project Alternative [2026 RTP/SCS (Scenario C)]. Each of these alternatives, along with the No Project Alternative, has been reviewed, and findings are included in Chapter 4 of this Draft PEIR.

2.11 EIR AND REGIONAL TRANSPORTATION PLAN APPROVAL PROCESS

The process to approve the RTP, SCS, and associated PEIR includes (1) assessing Merced County's transportation needs, identifying RTP projects to address the needs, and addressing air quality conformity requirements in the Draft and Final PEIR; (2) seeking comments on the PEIR and approval of the RTP/SCS

from the local agencies including the County and each of the five (5) cities; (3) approval of resolutions passed by MCAG certifying the PEIR associated with the RTP/SCS, and (4) approval of a resolution passed by MCAG approving the RTP/SCS. Public involvement will be encouraged throughout the process.

2.12 CONTENTS OF THE RTP

The RTP/SCS guides the development of the Regional Transportation Improvement Program (RTIP). The RTIP is the programming document used to plan the construction of regional transportation projects and requires approval from the State Department of Transportation (Caltrans). No project-level assessments of environmental impacts will be addressed by this PEIR. The RTP/SCS is also used as a transportation planning document by each of the seven (7) member jurisdictions of MCAG. The RTP/SCS identifies the region's transportation needs and issues, sets forth an action plan of projects and programs to address those needs in a manner consistent with the adopted policies, and documents the financial resources required to implement the plan.

The RTP/SCS consists of the required elements referenced in the enabling legislation and is organized into the chapters shown below.

1. Introduction
2. Growth Trends and Forecast
3. Transportation System
4. Policies and Implementing Actions
5. Sustainable Communities Strategy (SCS)
6. Financial Element
7. Environmental Justice (EJ) Analysis
   Appendices

2.13 INTENDED EIR USES

As a Program EIR, a type of first-tier document (CEQA Guidelines Sec. 15152, 15168), this document is prepared for an agency program or series of actions that can be characterized as a single large project. Typically, such a project involves actions that are geographically close and are logical parts of a chain of contemplated events, rules, regulations, or plans that govern the conduct of a continuing program with generally similar environmental effects and mitigation measures. When a Program EIR has been prepared, subsequent program activities must be evaluated to determine whether an additional CEQA document is required. When subsequent activities involve site-specific issues, the Lead Agency should use a written checklist to document its determination that:

- ✓ Environmental effects of the subsequent project were covered in the Program EIR and found to be within the scope of the Program EIR – no additional environmental review is required.

- ✓ A subsequent activity would have effects not within the scope of the Program EIR. The Lead Agency must prepare a new Initial Study that results in either a Negative Declaration, a Mitigated Negative Declaration, or an EIR.

This Draft PEIR was prepared as a 'tiered' document. The tiering concept is a multi-level approach to streamline subsequent environmental reviews. The first-tier Program EIR is an analysis of general matters (i.e., in this case, projects within the RTP/SCS and their related impacts). Subsequent tiers (later EIRs and Negative Declarations) include analyses of narrower, subsequent projects by "incorporating by reference" the general discussions from the broader first-tier EIR. Second-tier environmental reviews focus on the impacts of individual improvement projects that implement the Plan, program, or policy.

The environmental areas addressed in this Draft PEIR were identified from the Notice of Preparation (NOP), which is included as Appendix A of this PEIR. Appendix A also includes NOP comment letters submitted by responsible and other agencies during or following the NOP 30-day review period. The scope of first-tier EIRs is limited to descriptions of impacts and mitigation measures related to project implementation, without being overly speculative. Each improvement project will be subsequently reviewed for potential environmental effects. MCAG, Merced County, the cities, Caltrans, and other responsible and trustee agencies will use this PEIR[2] for:

- ✓ Regional Transportation Plan Updates.
- ✓ Transportation Improvement Programs.
- ✓ Grants and other funding source projects.
- ✓ Project Study Reports.
- ✓ Design Studies.
- ✓ Corridor Studies.
- ✓ Transit Plans and Studies.
- ✓ Non-Motorized Plans and Studies.
- ✓ Aviation Plans and Studies.
- ✓ Passenger and Freight Rail Plans and Studies.
- ✓ Other Plans and Studies including those for Transportation Demand Management (TDM) and Intelligent Transportation Systems (ITS) Improvement Projects.
- ✓ General Plan Amendments.
- ✓ Review of transportation and land use development projects.
- ✓ Capital Improvement Program budgeting and project priorities.

[2] For the purposes of CEQA, the term "responsible agency" includes all public agencies other than the Lead Agency, which have discretionary approval power over the project (CEQA Guidelines Sec. 15381). A "trustee agency" means a State agency having jurisdiction by law over natural resources affected by a project, which are held in trust for the people of California. Trustee agencies include the California Dept. of Fish and Wildlife, the State Lands Commission, and the State Dept. of Parks & Recreation (CEQA Guidelines Sec. 15386).

- ✓ Encroachment Permits.

The following responsible and trustee agencies will use this PEIR for the potential permits/actions:

- ✓ California Dept. of Fish and Game -- *Improvement projects involving Stream Alteration Permits and California Endangered Species Act.*
- ✓ California Dept. of Transportation -- *Local Assistance Projects, Transportation Improvement Program, and development permits/encroachment permits on State highways.*
- ✓ Cities -- *regional transportation planning, Capital Improvement Program budgeting and project priorities, review of transportation and land use development projects, General Plan Amendments, and encroachment permits.*
- ✓ Merced County (public, Board of Supervisors, Redevelopment Agency, Planning Commission, Airport Land Use Commission, and County staff) -- *regional transportation planning, Capital Improvement Program budgeting and project priorities, review of transportation and land use development projects, General Plan Amendments, and encroachment permits.*
- ✓ Local water departments, Districts, and regional irrigation districts/companies -- Improvement projects involving waterway crossings, channel realignments*, piping, etc.*
- ✓ San Joaquin Valley Air Pollution Control District (SJVAPCD) -- *air quality attainment plan consistency and air quality mitigation measures for improvement projects.*
- ✓ Merced County Association of Governments (MCAG) -- *Development of the Regional Transportation Improvement Program and other regional transportation planning documents, tracking of progress in implementing RTP/SCS strategies, monitoring of progress made by other entities, and development and implementation of the Expenditure Plan.*
- ✓ School Districts -- *Improvement projects adjacent to or in the vicinity of public schools.*
- ✓ Federal agencies such as the Federal Highway Administration, Federal Transit Agency, Fish and Wildlife Service, Housing and Urban Development (Community Development Block Grant program), etc. – *RTP and funding review and subsequent improvement projects funding, and the U.S. Endangered Species Act.*

2.14 APPROVALS REQUIRED TO IMPLEMENT THE PROJECT

MCAG will consider certification of this PEIR before approving the 2026 RTP/SCS. Before the RTP/SCS can be implemented, federal review and approval of the 2026 RTP/SCS is required. That approval will follow consideration and potential approval of the RTP/SCS on August 20, 2026.

2.15 EIR DEVELOPMENT/APPROVAL PROCESS

✓ Draft PEIR submitted to MCAG for distribution	June 16, 2026
✓ Draft PEIR Notice of Completion submitted to the State Clearinghouse for distribution to state agencies	June 16, 2026
✓ Draft PEIR emailed to organizations, agencies and individuals for review and comment	June 16, 2026
✓ Availability of Draft PEIR for public review published	June 10, 2026
➢ Sun-Star	June 5, 2026
➢ Merced County Times	June 8, 2026
➢ West Side Express	June 8, 2026
✓ Draft PEIR available at MCAG offices	June 16, 2026
✓ Draft RTP/SCS and PEIR Presentation:	
➢ 5:30 PM Los Banos Community Center	July 13, 2026
➢ 3:00 PM Governing Board meeting	July 16, 2026
✓ Draft 45-day public comment period closed	July 31, 2026
✓ Final PEIR to be received by commenting agencies	August 10, 2026
✓ Draft RTP/SCS and PEIR Presentation to MCAG Policy Board for adoption	August 20, 2026
✓ Notice of Determination filed with State Clearinghouse	August 21-27, 2026

2.16 ORGANIZATION OF THE EIR

This PEIR consists of the following six sections and two appendices. Each one begins with an overview of general EIR terminology and/or requirements specific to that section. *These overviews are in italic typeface.*

1.0 Executive Summary
2.0 Introduction/Project Description
3.0 Environmental Setting, Impacts, Mitigation Measures, and Level of Significance
4.0 Project Alternatives
5.0 Cumulative Effects
6.0 List of Preparers, Organizations, and Agencies Referenced or Consulted

Appendices
A Notice of Preparation (NOP) and NOP Comments
B RTP/SCS Project Listing
C Noise Assessment Worksheets

Table 2-3 compares the required contents of an EIR with those of this Draft PEIR. When the required EIR elements are not separated into distinct sections, the document must include a statement for each element in which it is discussed.

TABLE 2-3
Required Contents of an EIR

Required (CEQA Guidelines 15120)	***Environmental Impact Report***
Table of Contents or Index *(CEQA Guidelines 15122)*	Table of Contents
Summary *(CEQA Guidelines 15123)*	Executive Summary
Project Description *(CEQA Guidelines 15124)*	Introduction/Project Description
Environmental Setting *(CEQA Guidelines 15125)*	Setting, Impacts, Mitigation & Level of Significance
Effects Not Found to be Significant	Setting, Impacts, Mitigation & Level of Significance
Significant Environmental Impacts *(CEQA Guidelines 15126 & 15126.2)*	Setting, Impacts, Mitigation & Level of Significance
Areas of Known Controversy	Setting, Impacts, Mitigation & Level of Significance
Alternatives *(CEQA Guidelines 15126.6)*	Project Alternatives
Mitigation Measures *(CEQA Guidelines 15126.4)*	Setting, Impacts, Mitigation & Level of Significance
Growth-inducing Impacts *(CEQA Guidelines 15126.2(d))*	Cumulative Effects
Significant Irreversible Changes *(CEQA Guidelines 15126.2(c))*	Cumulative Effects
Cumulative Impacts	Cumulative Effects
Organizations and Persons Consulted	List of Preparers, Organizations, and Agencies Referenced or Consulted

2.17 EIR AND 2026 RTP/SCS AVAILABILITY

The RTP/SCS and this environmental review document are available at:

Merced County Association of Governments (MCAG)
369 West 18th Street
Merced, CA 95340
www.mcagov.org

Comments and questions should be made to:

Meg Prince, Principal Planner
Merced County Association of Governments
369 West 18th Street
Merced, CA. 95340
(209) 723-3153, extension 126 office
meg.prince@mcagov.org

3.0 ENVIRONMENTAL SETTING, IMPACTS, MITIGATION MEASURES, AND LEVEL OF SIGNIFICANCE

3.1 INTRODUCTION

An EIR is required to:

- ✓ *Provide a description of the physical environmental conditions in the vicinity of the project (local and regional perspectives). Each environmental condition includes an introduction that presents the topic and provides an overview of the impacts to be evaluated. In addition, this section includes a regulatory setting (as appropriate) or a discussion of the various regulations and regulatory agencies pertinent to each impact category. Finally, this section includes the environmental setting, which typically constitutes the baseline physical conditions, and a discussion of the policy and technical background that a lead agency uses to determine whether an impact is significant.*

  The environmental setting section should be no longer than necessary to provide an understanding of the significant effects of the proposed project and its alternatives. The "environment" (CEQA Guidelines 15360) refers to the physical conditions that exist within the area that will be affected by a proposed project. The area involved shall be the area in which significant effects would occur, either directly or indirectly, as a result of the project. The environment includes both natural and man-made conditions.

- ✓ *Examine changes to the physical environment in the affected area by identifying direct and indirect significant effects as well as considering long- and short-term effects. This includes a description of significant impacts, including those that can be mitigated – but not reduced to a level of insignificance. A "significant effect on the environment" (CEQA Guidelines 15382) means a substantial, or potentially substantial, adverse change in any of the physical conditions within an 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. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.*

  This section must contain a methodology or a description of the methods applied to determine environmental impacts. In addition, this section must include criteria for significance or a description of the criteria used to evaluate the significance of potential environmental impacts. This results in an analysis of the proposed project's beneficial and adverse effects relative to the significance criteria.

The individual projects will still be required to comply with CEQA requirements. Detailed analysis of the projects proposed in the Plan would be the responsibility of the agencies that approve them.

The CEQA Guidelines recommend tools for determining the potential for significant environmental effects, including:

- *Initial Study checklist (see the Notice of Preparation (NOP), Appendix A)*
- *CEQA's Mandatory Findings of Significance (see the NOP, Appendix A)*
- *Consultation with other agencies (See NOP Comment Letters, Appendix A)*
- *Particular agency thresholds of significance*

The NOP determined that a Program Environmental Impact Report (PEIR) is required for the Regional Transportation Plan (RTP) or "Project" because it could result in significant environmental impacts, considering the following environmental issue areas:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biotic Resources
- Climate Change
- Cultural and Tribal Cultural Resources
- Energy and Energy Conservation
- Geology/Soils/Mineral Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use, Planning and Recreational Resources
- Noise
- Population, Housing and Employment
- Public Utilities, Other Utilities, and Services Systems
- Social and Economic Effects
- Transportation/Traffic
- Wildfire

After reviewing the NOP comments, it was determined that this Program EIR should focus on the same environmental issues referenced in the NOP and listed above.

✓ **Preferred Project Alternative – 2026 RTP and the Preferred SCS Alternative (SCS) Scenario C: Affordable Housing-Centered Growth**

Scenario C prioritizes housing affordability, equity, and access to employment opportunities by directing a greater share of future residential growth to multifamily and higher-density housing

located near jobs, services, and transit. The scenario also includes substantial infill development and seeks to improve transportation accessibility for lower-income households.
Key characteristics include:

- Increased development of multifamily housing compared to historical growth patterns.
- Greater emphasis on locating housing near employment centers, transit corridors, downtown areas, UC Merced, and transit-served unincorporated communities such as Planada.
- Less concentrated development around rail stations than Scenario B, with a broader distribution of housing near jobs and transit throughout the region.
- Reduced commute distances and improved access to employment and services for lower-income households through strategic housing placement and enhanced transportation connectivity.

The MCAG Governing Board selected Scenario C – Affordable Housing-Centered Growth as the preferred Sustainable Communities Strategy (SCS) for the 2026 RTP/SCS, based on public input and RTP Roundtable recommendations (reference Figures 2-4 and 2-5).

Scenario C envisions a future for Merced County that aims to reduce greenhouse gas (GHG) emissions by 14 percent by 2035. It addresses community priorities by promoting housing affordability, improving access to jobs and services, supporting economic development, enhancing air quality, maintaining transportation infrastructure, and improving safety.

By focusing on housing and employment growth near transit options, Scenario C seeks to create a more sustainable and equitable future, providing residents with greater housing choices, improved mobility, and expanded opportunities.

Transportation Investment Strategy
As detailed in Chapter 5 of the 2026 RTP/SCS, Scenario C encourages a transportation and land use pattern that enhances walking, bicycling, and transit by clustering development near employment centers, transit corridors, and key destinations. This approach reduces the need for long trips and broadens transportation options for residents.

To achieve this vision, MCAG and its agencies are dedicated to investing in public transit, bicycle and pedestrian facilities, and multimodal improvements that enhance regional mobility and connectivity. Additionally, maintaining the existing transportation system, including roadway repairs and safety enhancements, will remain a priority to ensure a reliable network for residents. The preferred project alternative includes the transportation project lists and improvements outlined in Chapters 3 and 6 of the 2026 RTP/SCS and aligns with SCS Scenario C.

Chapter 3 Contents

- ✓ **Regulatory Setting**
  Section 15125(d) of the CEQA Guidelines requires the EIR to discuss "any inconsistencies between the proposed project and applicable general plans and regional plans." This EIR analyzes the adoption of a regional transportation plan; therefore, consistency with lower-level documents such as general plans and project plans is not applicable at this programmatic level. Consistency with applicable general plans will be considered as projects are carried forward for project-specific review. Implementing agencies will also be required to comply with any applicable consultation requirements, such as those established by Government Code Section 65402, in evaluating conformity with applicable general plans. This Chapter, Section 3.4, addresses air quality attainment plans. Regulatory mandates, legislation, and other requirements are provided for federal, state, and local, or other agencies to address transportation, air quality, and climate change requirements, as well as to inform readers of the regulations that may be applicable to address impacts to be assessed in "project-level" environmental review, especially by the implementing agencies.

- ✓ **Environmental Setting**
  The environmental setting of each environmental resource or issue area is included to provide an overview or background of existing or baseline conditions in the Project area.

- ✓ **Methodology**
  This section presents the information and analysis used to determine the impacts of each environmental issue area in this Chapter.

- ✓ **Environmental Impacts, Mitigation Measures, and Significance After Mitigation**
  Each section of this Chapter contains a section that identifies significance criteria consistent with CEQA Appendix G Thresholds and other applicable significance criteria (criteria for determining the level of significance and environmental impact); impacts associated with the Project considering the significance criteria or thresholds of significance; feasible mitigation measures that would minimize significant adverse impacts; and significance after mitigation intended to identify impacts found not to be significant, impacts found to be significant, and impacts found to be significant and unavoidable.

Other Considerations

It should be noted that the RTP transportation improvement projects and future land use development projects will be implemented by ***implementing agencies*** such as Caltrans, each of the cities, the County of Merced, transit agencies, Native American Tribes, and other agencies responsible for the construction and/or operation of transportation facilities, land use development, and other services. For purposes of

reviewing the environmental impacts associated with the MCAG 2026 RTP, this Draft Program EIR has been prepared because MCAG does not know all the details or have all the information it would need regarding each and every transportation improvement project identified in the RTP or the specific information regarding the specific type of land use development that will occur in each local jurisdiction between 2026 and 2049.

It will be the implementing agencies (referenced above) that will approve, design, and implement the transportation improvement projects referenced in the RTP, and approve the individual land use developments proposed over the duration of the planning period. These implementing agencies would be able to prepare subsequent environmental documents that incorporate by reference the appropriate information from this Draft Program EIR regarding secondary effects, cumulative impacts, project alternatives, and other relevant factors. If the lead agency finds that implementing a later activity would have no new effects and that no new mitigation measures would be required, the activity would not require additional CEQA review. Where subsequent environmental review is required, such review would focus on project-specific significant effects related to the project or its site that have not been considered in this Draft Program EIR.

MCAG is a planning agency responsible only for planning and programming projects included in the 2026 RTP. Further, the 2026 RTP includes the SCS, which is intended to show how integrated land use and transportation planning can reduce greenhouse gas (GHG) emissions from autos and light trucks [see Chapter 2 of this PEIR (Introduction/Project Description) and Chapter 5 of the 2026 RTP for the Sustainable Communities Strategies, incorporated by reference].

The SCS encourages changes to the urban form that improve transit accessibility and create more compact development, thereby yielding a number of transportation benefits for the region. These include reductions in travel time, vehicle miles traveled (VMT), vehicle hours traveled (VHT), and vehicle hours of delay. Concurrently, the plan increased transit use and mode share, leading to improvements in both mobility and air quality. The SCS only shows how future growth and development would be allocated to planned growth areas consistent with the general plans of the cities and the County of Merced. The merits of the 2026 RTP and SCS (as reflected in SCS Scenario C, chosen as the preferred project scenario) are summarized above.

As growth and development occur, it will be the cities and the County that review and approve development proposals and determine consistency with their plans, programs, and policies, not MCAG. MCAG has no land use authority to approve future growth and development as it occurs over the life of the RTP (Year 2049).

3.2 AESTHETICS

Issues related to existing visual and aesthetic quality, including the character, condition, and quality of a scenic landscape or other visual resource, are addressed in this section. Also included are aesthetic impact results from the development of the proposed 2026 RTP/SCS, and a list of associated mitigation measures intended to reduce impacts. In addition, regional projects can influence visual character through design, station development, and corridor improvements.

Regulatory Setting

A number of federal, state, and local agencies establish policies and programs relative to visual resources and impacts on those resources, as follows:

Federal Highway Administration (FHWA) – National Scenic Byways Program - The FHWA National Scenic Byways Program designates selected highways as "All American Road" (a roadway that is a destination unto itself) or "National Scenic Byway" (a roadway that possesses outstanding qualities that exemplify regional characteristics).

United States Bureau of Land Management (BLM) – Scenic Areas - The BLM designates some of its holdings as Scenic Areas and some roadways in remote areas as Back Country Byways.

United States Forest Service (USFS) – National Scenic Byways Program - The USFS also has a National Scenic Byways Program, independent from the BLM program, to indicate roadways of scenic importance that pass through national forests.

National Environmental Policy Act (NEPA) - Provides information on potential impacts to the environment, including aesthetic resources (Section 101 [b]). NEPA is implemented through regulations in the Code of Federal Regulations (40 CFR 6), which require careful consideration of the potential harmful effects of federal actions or plans, including projects that receive federal funds, which may significantly affect the environment. Impacts on scenic resources (40CFR6, Section 6.108 [f]) and conflicts with state, regional, or local plans and policies (4040CFR6, Section 6.108 [b]) are among the considerations included in the regulations. While NEPA compliance is not required for the Project, it will be required for transportation improvement projects financed with federal funds. The regulations also require projects that require NEPA review to seek to avoid or minimize the adverse effects of proposed actions and to restore and enhance environmental quality to the greatest extent possible. NEPA includes consideration of visual impacts from transit corridors and infrastructure that affect viewsheds.

The Wild and Scenic Rivers Act - The Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§ 1271-1287), as set forth herein, consists of Public Law 90-542 (October 2, 1968) and amendments thereto. The Act established a method for providing federal protection for certain of the country's remaining free-flowing rivers, preserving them and their immediate environments for the use and enjoyment of present and future generations. Eligible rivers can be designated as Wild River Areas, Scenic River Areas, or Recreational River Areas. Recreational River Areas are "those rivers or sections of rivers that are readily accessible by road or railroad, which may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past."

United States Department of Transportation Act, Section 4(f) - Section 4(f) of the Department of Transportation Act (DOT Act) of 1966 (49 U.S.C. § 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 Federal Highway Administration, Federal Transit Administration, and Federal Aviation Administration that involve the use or interference with the use of the following types of land:

- ✓ Public park lands.
- ✓ Recreation areas.
- ✓ Wildlife and waterfowl refuges.
- ✓ 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.
- ✓ If there is a feasible and prudent alternative, a proposed project using Section 4(f) lands cannot be approved by the 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 of 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 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 no historic properties will be affected by the proposed action. In this instance, analysis of avoidance alternatives is not required, and the Section 4(f) evaluation process is complete.

Section 6009(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users - In August 2005, Section 6009(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU; 23 CFR 774) amended existing Section 4(f) at both Title 49 USC Section 303 and Title 23 USC Section 138 to simplify the process and approval of projects that have only de minimis impacts on lands impacted by Section 4(f). Under the revised provisions, once the U.S. DOT determines that a transportation use of Section 4(f) property results in a de minimis impact, analysis of avoidance alternatives is not required, and the Section 4(f) evaluation process is complete. Section 6009 also required the U.S. DOT to issue regulations clarifying the factors to consider and the standards to apply when determining whether an alternative to avoid using a Section 4(f) property is feasible and prudent. On March 12, 2008, the FHWA issued a Final Rule on Section 4(f), which clarified the 4(f) approval process, simplified its regulatory requirements, and moved the Section 4(f) regulation to 23 CFR 774.

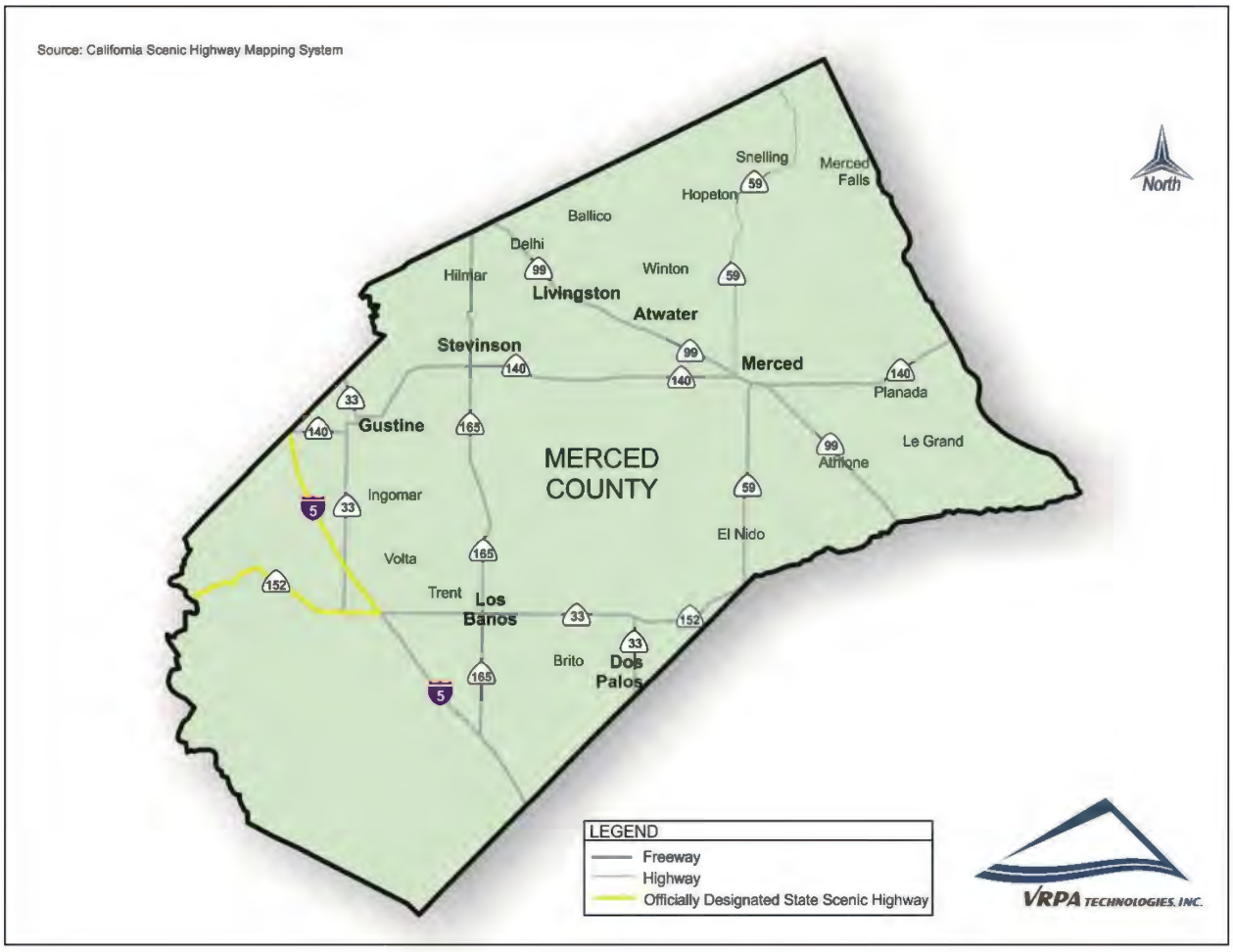
California Environmental Quality Act (CEQA) - Similar to NEPA, CEQA affords environmental protection, including protection of aesthetic resources. The CEQA Guidelines provide four criteria that may be used to evaluate the significance of visual quality impacts: negative effects on a scenic vista, damage to scenic resources within a State scenic highway, degradation of the visual character or quality of a site and its surroundings, and creation of a new source of substantial light or glare affecting views. CEQA also applies to BRT, light rail, and HCT systems, introducing new visual elements.

California Department of Transportation (Caltrans) - The State Legislature created the California Scenic Highways Program in 1963 to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. To be included in the State program, the proposed highways for designation must meet Caltrans's eligibility requirements and demonstrate visual merit. According to the Caltrans California Scenic Highway Mapping System, Interstate 5 and State Route 152 are the only highways designated as scenic within Merced County. Both are shown in Figure 3-1.

Caltrans's Adopt-a-Highway Program - To improve and maintain the visual quality of California highways, Caltrans administers the Adopt-a-Highway Program, established in 1989. The program provides an avenue for individuals, organizations, or businesses to help maintain sections of the roadside within California's State Highway System. Groups may participate as volunteers or hire a maintenance service provider to perform the work on their behalf. Adoptions usually span a 2-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 removing litter, planting trees and flowers, and removing graffiti and vegetation.

FIGURE 3-1
Eligible Scenic Highways



California Code of Regulations Title 24 Part 6 - The California Energy Code (Cal. Code Regs., title 24 § 6) was created as part of the California Building Standards Code by the California Building Standards Commission in 1978 to establish statewide building energy efficiency standards to reduce California's energy consumption. California's Building Energy Efficiency Standards are updated approximately every 3 years; the 2016 Standards went into effect on January 1, 2017. These standards include mandatory requirements for the efficiency and design of lighting control devices and for indoor and outdoor lighting systems in residential, non-residential, and hotel or motel buildings.

County and City Controls - Most local planning guidelines to preserve and enhance the visual quality and aesthetic resources of urban and natural areas are established in a jurisdiction's General Plan. The value of a visual resource is generally determined by its characteristics and distinctiveness, as well as the number of people who view it. Vistas of undisturbed natural areas, unique or unusual features that form an important or dominant portion of a viewshed, and distant vistas that offer relief from less attractive nearby features are often considered scenic resources. In some instances, a case-by-case determination of scenic value may be needed. Still, often there is agreement within the relevant community about which features are valued as scenic resources.

In addition to federal and State designations, counties and cities have their own scenic highway designations, which are intended to preserve and enhance existing scenic resources. Criteria for designation are commonly included in the conservation/open space element of the city or county general plan.

Environmental Setting

The aesthetic quality of the Merced County regional transportation system is comparable to other transportation systems in the San Joaquin Valley. The County has a predominantly flat topography within the Valley region. The Valley areas are bounded on the east and west by foothill and mountain ranges and are dominated by the agricultural landscape. Most cities and communities in Merced County are in the Valley area. Valley communities and cities include Atwater, Ballico, Cressey, Delhi, Dos Palos, El Nido, Gustine, Hilmar, Le Grand, Livingston, Los Banos, Merced, Planada, Santa Rita Park, Snelling, South Dos Palos, Stevinson, and Winton.

Merced County is bordered to the east and west by foothill and mountain ranges, including the Sierra Nevada, the Coast Range, and the Diablo Range. Eastern Sierra Nevada foothill areas generally include gently rolling grass-covered hills sprinkled with oak trees, occasional water features, and rock formations. Agricultural and range animals may or may not be present in certain seasons. Western foothill areas within the Coast Range are similar to the eastern foothills. Mountain areas in the northeast Sierra Nevada Range typically feature numerous pine trees, some rock formations, and varying elevations.

Various forms of transportation have affected the County's aesthetic quality. As a result, the existing and planned multimodal transportation system is considered to have a significant impact on the County's aesthetic quality. The aesthetic appearance of Merced County's urban and rural areas is a function of both the natural landscape and the artificial elements that shape their character and design. Because transportation facilities can significantly influence human perception of the visual environment, this

section of the PEIR addresses the general aesthetic landscape of the Merced region. It assesses the potential impacts of region-wide construction of at- and above-grade facilities, as well as impacts from transit corridors, stations, and dedicated transit lanes.

Definitions

- ✓ Viewshed: A viewshed is the area within the field of view of an observer and is commonly used to describe the extent of a scenic resource. A number of intervening elements, including trees and other vegetation, built structures, or topography, such as hills and mountains, can limit the extent of a viewshed.
- ✓ Various jurisdictions within the Merced region, such as cities, counties, or federal or regional agencies, provide guidelines regarding the preservation and enhancement of visual quality in their plans or regulations. Because of Merced County's size and diversity, there are no uniform standards that apply across the region. The analysis does utilize the State CEQA Guidelines Appendix G thresholds to evaluate impacts.

Transportation systems have a major influence on human perception of the visual environment. In urban areas, roadway rights-of-way comprise 20-30 percent of the total land area. As most vehicular movement occurs along transportation corridors, the placement of these corridors largely determines which parts of the area will be visible. Even for people not using the transportation system at a particular time, or who never use certain modes of travel, transportation systems are usually a dominant element of the visual environment. Corridor-based design improves mobility and visual experience through coordinated infrastructure.

View sheds and visual quality are affected by air quality, particularly visibility. In Merced County, high pollutant emissions – combined with poor natural ventilation in the San Joaquin Valley Air Basin – result in degraded visibility. Of particular note are photochemical smog and airborne particulates, finely divided solids, or liquids, such as soot, dust, aerosols, and mists that absorb sunlight, producing haze and reducing visibility.

Aesthetically Significant Resources

Aesthetically significant features occur in a diverse array of environments within the region, ranging in character from urban centers to rural agricultural lands to natural woodlands. The mixture of climate and topography affords the region an extraordinary range of visual features, flora and fauna, and a diversity of styles, compositions, and distributions in the built environment.

Natural features include land and open spaces, such as parks and open areas, mountainous areas, beaches, and natural water sources. Included as natural features are elements of the visual environment that have been constructed to resemble natural features, such as man-made lakes. The loss of natural aesthetic features, reduction of vistas, or the introduction of contrasting urban features may diminish the value of natural resources in the region.

From a regional perspective, views of the various mountain ranges from locations in the region are considered valuable visual resources. Other natural features that may be visually significant include the numerous stream corridors of the Merced River, San Joaquin River, and Bear Creek, as well as reservoirs within the region. Features of the built environment that may have visual significance include individual structures or groups of structures that are distinctive for their aesthetic, historical, social, or cultural significance or characteristics. Examples of the visually significant built environment include bridges or overpasses, architecturally appealing buildings or groups of buildings, landscaped freeways, or locations where historic events occurred, as well as transit infrastructure such as BRT corridors, rail lines, and stations.

Designated State and Local Scenic Highways

According to the Caltrans California Scenic Highway Mapping System, Interstate 5 from SR 152 to the Stanislaus County Line and State Route (SR) 152 from the Santa Clara County line to the junction of Interstate 5 is a designated State Scenic Highway in Merced County. Figure 3-1 depicts the location of these eligible highways. These designations recognize the high scenic and visual qualities of these corridors. Specific design guidelines are required by local regulations for all designated highways, and state-designated corridors must be reviewed when improvements are proposed to determine whether the highway will remain eligible for designation as a scenic corridor. The remainder are locally designated highways or streets.

Light and Glare

General sources of light can be categorized as follows:

- ✓ Man-made interior lighting that can be seen from the exterior of a building.
- ✓ Man-made exterior lighting such as lampposts, signs, or headlights.
- ✓ Naturally occurring light, such as sunlight or moonlight.
- ✓ Indirect light that is reflected from a direct source of light.

Examples of direct light associated with transportation systems include highway signs, car headlights, street and highway lights, illumination from transit stations and park-and-ride facilities, and the interiors of transit facilities. An example of indirect light is the reflection of sunlight from a new, light-colored road surface or a highly reflective noise wall.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Potential impacts to scenic resources and vista points were based on available data on state-designated highways and vista points. This analysis discusses and assesses potential impacts on designated scenic resources, including scenic highways or vista points, which may result from projects proposed in the RTP and SCS, as well as from other projects on the RTP's financially constrained project lists. This analysis also discusses the potential impact of additional light and glare from proposed improvement projects within the RTP and new development planned within the SCS. Mitigation measures are provided if the impact is identified as potentially significant.

Generally, greater changes from existing conditions result in more significant impacts. For example, the construction of a new roadway generally has a greater impact on scenic resources than the widening of an existing one. Road widening, however, can have significant local impacts, especially when it requires removing trees and other important landscape buffers, or when constructing noise barriers or other visual impediments is necessary. New land use development can also significantly alter the existing landscape and viewshed.

Criteria for Significance

The following significance criteria were used to determine the level of significance of impacts on scenic resources resulting from the proposed Project. Significance criteria were developed based on Appendix G of the State CEQA Guidelines and on professional judgment. In general, an individual improvement project and new development project contained within the RTP and SCS would result in a significant visual impact if it:

- ✓ Have a substantial adverse effect on a scenic vista.
- ✓ Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
- ✓ Substantially degrade the existing visual character or quality of the site and its surroundings.
- ✓ Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Generally, proposed projects are of the following two types:

- ✓ New Systems (new highway and transit facilities).
- ✓ Modifications to Existing Systems (widening roads, addition of carpool lanes, grade crossings, intelligent transportation systems, maintenance, and service alterations).

Methodology

Impacts on aesthetic resources resulting from the proposed Project would depend on several factors, including the type of improvement or land use development proposed for the area, the area's scenic resources, and the duration of construction activities. Natural and man-made landscapes affect the perceived visual and aesthetic qualities of the County's scenic resources.

In general, scenic resources could be significantly affected by transportation improvement projects or future land use development projects proposing new systems. Specifically, the construction and operation of transportation improvement projects and future land use development proposed within the RTP and SCS could significantly affect aesthetic resources in the vicinity of these "new or future" projects.

Impact AE 3.2.1 – Have a substantial adverse effect on a scenic vista

Construction and implementation of individual transportation improvement projects and future land use development projects could impede or block views of scenic resources from the transportation facility, transit or highway corridor development, or the surrounding area. This could have a potentially significant impact.

Construction of new facilities or development of previously undisturbed sites for transportation improvements or future land use could block or otherwise impede views of scenic resources in a given area. For example, the construction of highways or new residential areas could block views of the Sierra Nevada Mountain Range and other scenic resources. Grade-separated facilities could block or impede views of surrounding scenic resources during and after construction. Moreover, the elevation and scale of the proposed grade-separated facilities or high-rise development could be visually intrusive in surrounding areas (depending on the facility's visibility).

Construction of transportation facilities that involve modifications such as widening or upgrading existing roadways would entail fewer changes to the visual environment. These "modification projects" would most likely occur within existing roadway facilities and/or could require the acquisition of right-of-way property. However, such changes may not block or impede views of scenic resources to a greater extent than at present.

Implementation of the proposed RTP and SCS will result in more compact development than the existing conditions. By developing more compactly, the RTP and SCS direct more growth to already urbanized areas and potentially reduce the amount of undeveloped land or lands with aesthetic resources that are converted or lost to urban uses. Focusing growth in already developed areas limits growth at the urban edge, adjacent to aesthetic resources.

Mitigation Measures

The specific impacts on obstruction of views will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, MCAG's role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **AE 3.2.1-1** Implement design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions.

- ✓ **AE 3.2.1-2** To the extent feasible, noise barriers that will not degrade or obstruct a scenic view will be constructed. Noise barriers will be well landscaped, complement the natural landscape, and be graffiti-resistant.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact AE 3.2.2 – Substantially damage scenic resources, including, but not limited to, trees, rock outcropping, and historic buildings within a state scenic highway

Construction and implementation of the projects and new development could alter the appearance of scenic resources along or near scenic highways such as Interstate 5, SR 152, and other vista points. This could have a potentially significant impact.

The State Legislature created the California Department of Transportation's (Caltrans) State Scenic Highway Program in 1963 to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of land adjacent to highways. The state laws governing the Scenic Highway Program are stated in the California Streets and Highways Code, Section 260.

The State Scenic Highway System includes highways designated by Caltrans as scenic or eligible for designation. These highways are designated in Section 263 of the Streets and Highways Code. Scenic highway designation can offer the following benefits.

- ✓ Protection of the scenic values of an area.
- ✓ Enhancement of community identity and pride, encouraging citizen commitment to preserving community values.
- ✓ Preservation of scenic resources to enhance land values and make the area more attractive.
- ✓ Promotion of local tourism that is consistent with the community's scenic values.

According to Caltrans, a scenic corridor is the land generally adjacent to and visible from the highway. A scenic corridor is identified using a motorist's line of vision. A reasonable boundary is selected when the view extends to the distant horizon. Trails outline the following minimum requirements for scenic corridor protection: regulation of land use and development density; detailed land and site planning; control of outdoor advertising; careful attention to and control of earthmoving and landscaping; and careful attention to the design and appearance of structures and equipment.

Some of the proposed projects in the RTP/SCS include countywide improvements to highways, arterials, and transit systems. These improvements could potentially fall within a designated eligible state scenic highway. Interstate 5 and SR 152 are the two (2) designated scenic highways in Merced County. The highways eligible for designation as a state scenic highway are referenced in Figure 3-1.

Mitigation Measures

The specific impacts on the altered appearance of scenic resources will be evaluated as part of the implementation agencies' project-level environmental review process regarding their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, MCAG's role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **AE 3.2.2-1** Avoid construction of transportation facilities and new development in state and locally designated scenic highways and vista points.

- ✓ **AE 3.2.2-2** If transportation facilities and new development are constructed in state and locally designated scenic highways and/or vista points, design, construction, and/or operation of the transportation facility or new development will be consistent with applicable guidelines and regulations for the preservation of scenic resources along the designated scenic highway.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact AE 3.2.3 – In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? The construction and implementation

of improvement projects or new development could create significant contrasts with the overall visual character of the existing landscape. This could have a potentially significant impact.

There is an extraordinary range of urban characteristics and urban-natural environmental contrasts throughout the proposed RTP Project area. Given the region's size and diversity, no single set of standards applies to all areas. Therefore, local planning guidelines regarding the visual quality of urban areas must be researched and adhered to. Components of the urban environment include transportation infrastructure and areas designated for new development in local general plans. Many roads have been built throughout the region, connecting urban concentrations with natural areas in rural areas. Transportation systems have a major effect on the visual environment. As most vehicular movement occurs along transportation corridors, their placement largely determines what parts of the region will be seen. Arterials and freeways are a major component of the region's existing visual environment. In addition, new land use development consistent with the SCS could impact visual resources by obstructing existing viewsheds. In addition, corridor-based transit planning may introduce new visual contrasts while improving connectivity.

Development of previously undeveloped sites could result in impacts to visual resources. Construction of a new transportation system or new land use development could result in land use changes that could also impact visual resources. For example, the extension of a highway through an urban area could require the acquisition of residential, commercial, or industrial property, thereby changing land use and, consequently, the area's visual quality. “Modification projects” that involve widening or upgrading existing roadways can be designed to complement the existing system and therefore entail fewer changes to the visual character of the existing landscape setting. Therefore, the impacts of “modification projects” would be less than significant.

Mitigation Measures

The specific impacts on the development of previously undeveloped sites with visual qualities will be evaluated as part of the implementation agencies’ project-level environmental review process regarding their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, MCAG’s role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **AE 3.2.3-1** Where appropriate, encourage the development of design guidelines for each type of transportation facility and land use that make elements of proposed projects visually compatible with

surrounding areas. Visual guidelines will, at a minimum, include setback buffers, landscaping, color, texture, signage, and lighting criteria. The following methods will be employed whenever possible:

- Transportation systems and new development will be designed to allow the surrounding landscape to dominate.
- Transportation systems and new development will be designed to be compatible with the surrounding environment (e.g., colors and construction materials).
- If exotic vegetation is used, it will be used for screening and landscaping that blends in with and complements the natural landscape.
- Trees bordering highways will remain or be replaced so that clear-cutting is not evident.
- Grading will blend with the adjacent landforms and topography.

✓ **AE 3.2.3-2** Project implementation agencies should design transportation and new development projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Project implementation agencies should design projects to minimize their intrusion into important viewsheds and use contour grading to better match the surrounding terrain. To the maximum extent feasible, landscaping along highway corridors should be designed to incorporate significant natural elements and visual interest, softening the hard-edged, linear travel experience that would otherwise occur.

✓ **AE 3.2.3-3** Project implementation agencies should use natural landscaping to minimize contrasts between the Project (RTP/SCS) and surrounding areas. Wherever possible, interchanges and transit lines should be designed at the grade of the surrounding land to minimize visual obstruction. Edges of major cut-and-fill slopes should be contoured to provide a more natural-looking finished profile. Project implementation agencies should, to the greatest extent possible, replace and renew landscaping along corridors as part of road widenings, interchange projects, and related improvements. New corridor landscaping should be designed to respect existing natural and man-made features and to complement the dominant landscaping of surrounding areas.

✓ **AE 3.2.3-4** Project implementation agencies should construct sound walls of materials whose color and texture complement the surrounding landscape and development, and to the maximum extent feasible, use color, texture, and alternating facades to “break up” large facades and provide visual interest. Where there is room, project sponsors should landscape the sound walls with plants that screen them, preferably native vegetation or landscaping that complements the dominant landscaping of surrounding areas.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact AE 3.2.4 – Create a new source of substantial light or glare that could adversely affect day or nighttime views in the area

Construction and implementation of individual transportation and land use development projects could create a new source of substantial light or glare that would affect daytime or nighttime views of scenic resources from the transportation facility or the surrounding area. This could have a potentially significant impact.

There is an extraordinary range of urban characteristics and urban-natural environmental contrasts throughout the proposed Project area. Given the region's size and diversity, no single set of standards applies to all areas. Therefore, local planning guidelines regarding the visual quality of urban areas must be researched and adhered to. Urban areas, with numerous buildings in close proximity, experience significant light from all light-source categories. Merced County includes medium-sized cities and vast rural areas, either in the Valley region or in the mountains. Rural areas are primarily used for agriculture. In smaller communities and rural areas of the County, where urban development is less dense, light and glare impacts are less frequent.

Mitigation Measures

The specific impacts of new light sources and glare will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, MCAG's role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **AE 3.2.4-1** Where appropriate, encourage the development of design guidelines for each type of transportation facility and land use development that make light elements of proposed facilities visually compatible with surrounding areas. The following methods will be employed whenever possible:

  - Transportation systems and new development areas will be designed to allow the surrounding landscape to dominate.
  - Transportation systems and new development areas will be developed to be compatible with the surrounding environment.
  - Lighting devices will be employed, such as downward-facing light, light shields, and amber lumens.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

3.3 AGRICULTURE AND FORESTRY RESOURCES

This section provides information on the impacts of RTP/SCS improvement projects and future planned land-use development on agricultural and forestry resources. The methodology and criteria for evaluating the significance of agriculture- and forestry-related impacts, as well as mitigation measures, are discussed.

Regulatory Setting

Federal Agencies and Regulations

- ✓ **The Environmental Protection Agency (EPA) implements NEPA -** NEPA provides information on the expected environmental effects of federally funded projects. Impacts on land uses and conflicts with state, regional, or local plans and policies are among the considerations included in the regulations. The regulations also require that projects subject to NEPA reviews seek to avoid or minimize the adverse effects of proposed actions and to restore and enhance environmental quality to the greatest extent possible.

- ✓ **U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) -** The NRCS maps soils and farmland uses to provide comprehensive information necessary for understanding, managing, conserving, and sustaining the nation's limited soil resources. The NRCS manages the Farmland Protection Program, which provides funds to help purchase development rights to keep productive farmland in agricultural uses.

- ✓ **United States Bureau of Land Management (BLM) -** The California Desert Conservation Area Plan is used to manage BLM controlled areas. The BLM also implements biological resource management policies by designating Areas of Critical Environmental Concern.

- ✓ **United States Fish and Wildlife Service (USFWS) -** The USFWS administers the Federal Endangered Species Act (FESA) and designates critical habitat for endangered species. The USFWS also manages the National Wildlife Refuges

- ✓ **United States Army Corps of Engineers (USACE) -** Among its responsibilities, the USACE administers Section 404 of the Clean Water Act (CWA), which governs specified activities in waters of the United States, including wetlands. In this role, the USACE requires that a permit be obtained if a project would place structures, including dredged or filled materials, within navigable waters or wetlands, or alter such areas.

- ✓ **Federal Farm and Ranchland Protection Program (FRPP) -** The FRPP, also referred to as the Farmland Protection Program (FPP), is a voluntary easement purchase program that helps farmers and ranchers keep their land in agriculture. Pursuant to the Farmland Protection Policy Act (FPPA) of 1981 Sections 1539-1549, 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 nonagricultural 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 nongovernmental organizations with existing farmland protection programs to purchase conservation easements or other interests in land. FPP is reauthorized in the Farm Security and Rural Investment Act of 2002 (Farm Bill). The NRCS manages the program. 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 Environmental Quality Incentives Program (EQIP) -** EQIP is a voluntary program that provides assistance to farmers and ranchers who face threats to soil, water, air, and related natural resources on their land.

- ✓ **Federal Forest Legacy Program (FLP) -** The FLP (16 U.S.C. § 2103c) was part of the 1990 Federal Farm Bill. The FLP's purpose is to protect environmentally important forestland under private ownership from conversion to non-forest uses, such as residential or commercial development. The FLP promotes the use of voluntary conservation easements on these properties. Participating landowners may sell or transfer particular rights, while retaining ownership of the property and the right to use it in any way consistent with the terms of the easement.

  The easement holder is responsible for managing the rights it acquires and for monitoring the landowner's compliance. Forest management activities, such as timber harvesting, hunting, fishing, and hiking, are encouraged, provided they are consistent with the program's purpose.

Department of Transportation Act, Section 4(f) - Section 4(f) of the Department of Transportation Act, as amended (49 USC 303), "policy on lands, wildlife and waterfowl refuges, and historic sites" indicates:

- ✓ It is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public parks and recreation lands, wildlife and waterfowl refuges, and historic sites.
- ✓ The Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the states, in developing transportation

plans and programs that include measures to maintain or enhance the natural beauty of lands crossed by transportation activities or facilities.

- ✓ The Secretary may approve a transportation program or project (other than any project for a park road or parkway under Section 204 of Title 23) requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

    1. There is no prudent and feasible alternative to using that land; and
    2. The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Agricultural Act of 2014 - Every five years, Congress passes a Farm Bill to establish national agriculture, nutrition, conservation, and forestry policy; the Agricultural Act of 2014 (2014 Farm Bill; H.R. 2642; Public Law 113-79) provides for the reform and continuation of agricultural and other programs of the Department of Agriculture through fiscal year 2022. The Agricultural Act of 2014 consolidates agricultural conservation programs for flexibility, accountability, and adaptability at the local level; makes the USFS's Stewardship Contracting Authority over forestry resources permanent; provides funding for agricultural research, development, and promoting local and regional food systems; and encourages agricultural producers and partners to design conservation projects that focus on and address regional priorities. Projects that are funded under the Agricultural Act of 2014 are subject to FPPA agricultural conservation requirements. The Farm and Ranch Lands Protection Program (FRPP), a voluntary easement purchase program that helped farmers and ranchers keep their land in agriculture, was repealed under the Agricultural Act of 2014 and replaced with the Agricultural Conservation Easement Program (ACEP).1,1 Acres under the FRPP are considered enrolled ACEP.1 ACEP is composed of an Agricultural Land Easement (ALE) component and a Wetlands Reserve Easement (WRE) component; the purposes of the ALE component are to protect the agricultural use and future viability and related conservation values of eligible land by limiting nonagricultural uses of that land and to protect grazing uses and related conservation values. The United States Natural Resources Conservation Service (NRCS) manages the program.

State Agencies and Regulations

- ✓ **California Department of Conservation -** In 1982, the State of California created the Farmland Mapping and Monitoring Program within the California Department of Conservation to carry on the mapping activity from the NRCS on the Conservation Act of 1965, also known as the Williamson Act, for the conservation of farmland and other resource-oriented laws.

- ✓ **California Department of Transportation (Caltrans) -** The Caltrans jurisdiction includes rights-of-way of state and interstate routes within California. Any work within the right-of-way of a federal or state transportation corridor is subject to Caltrans regulations governing allowable actions and modifications to the right-of-way. The Act includes the Division of Aeronautics, which is responsible for airport permitting and for establishing a county Airport Land Use Commission (ALUC) for each county with one or more public airports. ALUCs are responsible for preparing land-use plans for areas near aviation facilities.

- ✓ **California Department of Forestry and Fire Protection (CAL FIRE) - Cal** Fire reviews and approves plans for timber harvesting on private lands. In addition, through its responsibility for fighting wildland fires, Cal Fire plays a role in planning development in forested areas.

- ✓ **California Department of Parks and Recreation (CDPR) -** The CDPR manages and provides sites for a variety of recreational and outdoor activities. The CDPR is a trustee agency that owns and operates all state parks and participates in land use planning that affects state parkland.

- ✓ **California Department of Fish and Wildlife (CDFW) -** The land use mandate of the CDFW is to protect rare, threatened, and endangered species by managing habitat in legally designated ecological reserves or wildlife areas.

- ✓ **Farmland Mapping and Monitoring Program (FMMP) -** In 1982, the State of California created the Farmland Mapping and Monitoring Program (FMMP) within the Department of Conservation to carry on the mapping activity from the NRCS on a continuing basis. The FMMP is a non-regulatory program that provides consistent and impartial analysis of agricultural land use and land-use changes throughout California for decision-makers to assess current status, review trends, and plan for the future of California's agricultural land resources. The FMMP produces Important Farmland Maps, which are a hybrid of resource-quality (soils) and land-use information. Information from the FMMP was used to identify agricultural resources within Fresno County. The FMMP is the primary system for evaluating and monitoring the extent, distribution, and quality of farmland. Maps of Important Farmland are prepared approximately every two years by the FMMP for most of the state's agricultural regions, based on soil survey information and land inventory and monitoring criteria developed by the NRCS.

  The classification system employed by FMMP comprises eight mapping categories: five for agricultural lands and three for nonagricultural lands. The characteristics of these eight categories are summarized below.

  - ➢ Prime Farmland. Prime farmlands are lands with a combination of physical and chemical features that best sustain long-term production of agricultural crops. The land must be supported by a

reliable, high-quality water supply during the growing season. It must also have been used to produce irrigated crops at some point during the four years preceding the collection of the mapping data.

- Farmland of Statewide Importance. Farmland of statewide importance is land with agricultural land-use characteristics, irrigation water supplies, and physical characteristics similar to prime farmland but with minor shortcomings, such as steeper slopes or reduced ability to retain and store moisture.
- Unique Farmland. Unique farmlands are lands with lesser quality soils used for the production of California's leading agricultural cash crops. These lands are usually irrigated but may include non-irrigated orchards or vineyards as found in some of the state's climatic zones.
- Farmland of Local Importance. Farmlands of local importance are important to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.
- Grazing Land. Grazing lands are lands on which the existing vegetation is suited to the grazing of livestock.
- Urban and Built-Up Land. This category describes land occupied by structures with a building density of at least 1 unit per 1.5 acres, or approximately 6 structures per 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
- Other Land. This category encompasses land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; vacant and nonagricultural land surrounded on all sides by urban development; confined livestock, poultry, or aquaculture facilities; strip mines; borrow pits; and water bodies smaller than 40 acres.
- Water. This category describes perennial bodies of water with an extent of at least 40 acres.

Table 3-1 provides the FMMP acres listing of existing important farmland by type and the amount of grazing land within Fresno County. Figure 3-2 depicts areas devoted to prime farmland, unique farmland, farmland of statewide importance, and farmland of local importance (California Department of Conservation and MCAG 2026).

FIGURE 3-2
Farmlands

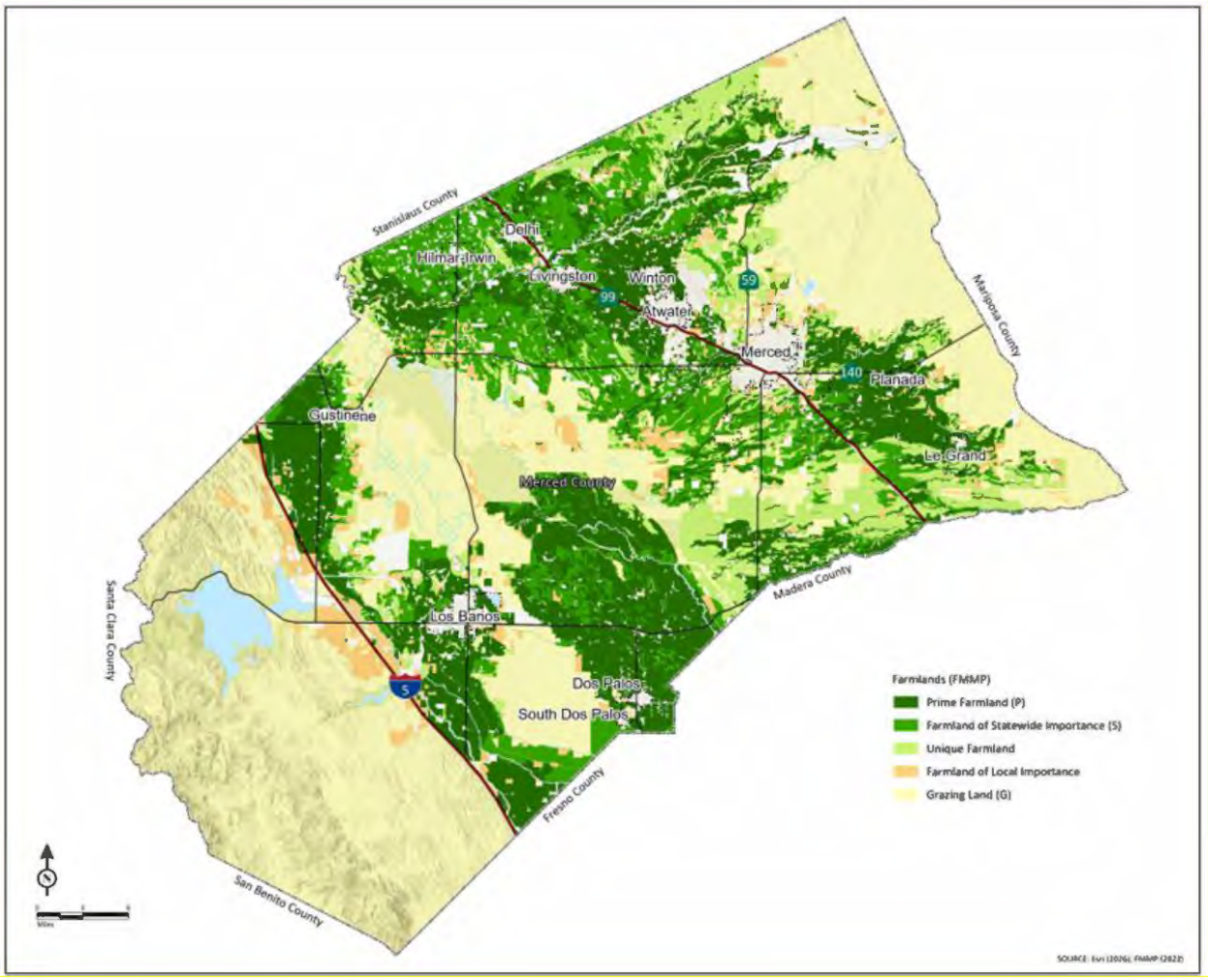


TABLE 3-1
Important Farmland by Type in Merced County

Important Farmland Type	Acres
Prime	263,772
Statewide Importance	153,135
Unique	114,431
Local Importance	57,904
Grazing	557,712
TOTAL	1,146,954

* Acreages should be calculated using the most recent California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) GIS dataset available for Merced County.

Source: *California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program (FMMP), latest available Merced County GIS data; accessed 2026.*

The California Department of Conservation updates Important Farmland mapping every 2 years. Acreage totals may vary over time due to agricultural conversion, urbanization, changes in irrigation status, revised soil mapping, and updates to FMMP classification methodologies. Current FMMP GIS datasets should be used to calculate acreage totals for environmental review documents.

- ✓ **Oak Woodlands Conservation Act of 2004 -** The Act (Senate Bill 1334) supports the conservation and protection of the State of California's oak woodlands, requiring counties to determine whether a project may result in loss of oak woodlands with a significant effect on the environment and implement one or more specified mitigation alternatives in compliance with CEQA and its provisions.

- ✓ **California Forest Legacy** - Similar to the Federal Forest Legacy Program, the California Forest Legacy Act of 2007 (Pub. Resources Code, § 12220(G)) is a program of the California Department of Forestry and Fire Protection (CAL FIRE) to promote conservation easements in environmentally sensitive forest areas. Money to fund the Program is obtained from gifts, donations, federal grants and loans, other appropriate funding sources, and from the sale of bonds pursuant to Proposition 12, the Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection Bond Act (The Villaraigosa-Kelley Act) of 2000 (Pub. Resources Code, div. 5, Ch. 1.692).

This act defines "forest land" as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits" (California Department of Forestry and Fire Protection, 2011).

- ✓ **The Right to Farm Act of 1981** - The Right to Farm Act of 1981 (Civ. Code, § 3482.5) is designed to protect commercial agricultural operations from nuisance complaints that may arise when an agricultural operation is conducting business in a "manner consistent with proper and accepted customs." The code specifies that established operations that have been in business for three or more years and were not nuisances at the time they began shall not be considered nuisances as a result of new land use.

- ✓ **California Farmland Conservancy Program Act** - The California Farmland Conservancy Program Act of 2010 (Pub. Resources Code, § 10200 *et seq*.), also known as Sen. Bill No. 1142 (Stats. 2010, Ch. 323) (SB 1142), established the California Farmland Conservancy Program (CFCP), which provides grants for agricultural conservation easements. An agricultural conservation easement aims to maintain agricultural land in active production by removing development pressure. Such an easement prohibits practices that would damage or interfere with the land's agricultural use. Because the easement is a restriction in the deed to the property, it remains in effect even when the land changes ownership. Agricultural conservation easements are created specifically to support agriculture and prevent development on the subject parcels. While other benefits may accrue from the land's undeveloped status (scenic and habitat values, for example), the land's primary use is agricultural. Easements funded by the CFCP must be of a size and nature suitable for viable commercial agriculture.

- ✓ **Open Space Subvention Act** - The Open Space Subvention Act (OSSA) of 1972 (Gov. Code, § 16140 *et seq*.) was enacted on January 1, 1972, to provide for the partial replacement of local property tax revenue foregone as a result of participation in the Williamson Act and other enforceable open space restriction programs. Participating local governments receive annual payments based on the quantity (number of acres), quality (soil type and agricultural productivity), and, for Farmland Security Zone contracts, location (proximity to a city) of land enrolled under eligible, enforceable open space restrictions.

- ✓ **The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000** - The Cortese-Knox-Hertzberg Local Government Reorganization Act (Cortese-Knox-Hertzberg Act) of 2000 (Gov. Code, § 56000 *et seq*.) established 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 the development or use of land for purposes other than open space be guided away from existing prime agricultural lands used for open space toward areas containing nonprime

agricultural lands, unless that action would not promote the planned, orderly, efficient development of an area.

- ✓ **Z'berg-Nejedly Forest Practice Act of 1973** - The Z'berg-Nejedly Forest Practice Act (Forest Practice Act) of 1973 (Pub. Resource Code, div. 4, Ch. 8) established a nine-member Board of Forestry whose mandate is to assure the best economic and environmental practices in timber production in California. The Board requires that a Registered Professional Forester (RPF) prepare a Timber Harvest Plan (THP) before harvesting timber on most nonfederal forestland. The goal of the THP is to ensure that the ongoing productivity of timberlands is sustained and enhanced by timber harvesting on the site, and that related resources are protected to the extent feasible, including watersheds, fisheries, wildlife, recreation, aesthetics, and employment in the region.

- ✓ **California Timberland Productivity Act of 1982** - The California Timberland Productivity Act (CTPA) of 1982 (Gov. Code, §§ 51100–51104) describes the powers and duties of local government in protecting timberlands. The law is designed to maintain an optimal amount of timberland, ensuring its current and continued availability by establishing Timberland Preserve Zones (TPZ) on all qualifying timberland, which restrict land use to growing and harvesting timber, as well as other compatible uses. The Act discourages premature or unnecessary conversion of timberland to urban or other uses and expansion of urban services into timberland and encourages investment in timberlands based on a reasonable expectation of harvest. The CTPA also provides that timber operations conducted in accordance with California forest practice rules shall not be restricted or prohibited due to land uses in or around the location of the timber operations.

- ✓ **Oak Woodlands Conservation Act of 2004 -** The Act (Senate Bill 1334) supports the conservation and protection of the State of California's oak woodlands, requiring counties to determine whether a project may result in loss of oak woodlands with a significant effect on the environment and implement one or more specified mitigation alternatives in compliance with CEQA and its provisions.

- ✓ **California Forest Legacy Act of 2007** - The California Forest Legacy Act (Pub. Resources Code, § 12220(G)) establishes the program to promote the conservation of environmentally sensitive forest areas. Under the California Department of Forestry and Fire Protection (CAL FIRE) this act defines "forest land" as "land that can support ten-percent native tree cover of any species, including hardwoods, under natural conditions and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits" (California Department of Forestry and Fire Protection, 2012).

Public Agencies

Public agencies are entrusted with compliance with CEQA, and its provisions are enforced, as necessary, through litigation and the threat thereof. CEQA defines a significant effect on the environment as a substantial or potentially substantial adverse change in the physical conditions of the area affected by the project. Agriculture and Forestry resources are a required category for impact assessment under CEQA.

- ✓ **California Land Conservation Act of 1965 (Williamson Act) -** The Williamson Act is the only established program that directly involves state government in an administrative or fiscal capacity. The Act creates an arrangement (contract) whereby private landowners voluntarily restrict their land to agricultural and compatible open-space uses under a rolling 10-year contract. In return, parcels are assessed for property tax purposes at a rate consistent with their actual use, rather than potential market value.

- ✓ **Farmland Security Zone -** In August 1998, the Legislature enhanced the Williamson Act with the farmland security zone (FSZ) provisions. The FSZ provisions offer landowners greater property tax reduction in return for a minimum rolling contract term of 20 years.

- ✓ **California Farmland Conservancy Program (CFCP) -** The CFCP seeks to encourage the long-term, private stewardship of agricultural lands through the voluntary use of agricultural conservation easements. The CFCP provides grant funding for projects that use and support agricultural conservation easements to protect agricultural lands. As of December 2016, the CFCP has funded more than 130 easement projects in California, including nearly 58,000 acres in more than a dozen counties. CFCP has also funded a number of planning grants, including some with regional or statewide value.

Local Agencies and Regulations

- ✓ **Land Conservation Trust -** A land conservation trust is another type of organization devoted to protecting open space, agricultural lands, wildlife habitats, and natural resource lands. A land trust is a nonprofit organization that, as all or part of its mission, actively works to conserve land by undertaking or assisting in land or conservation easement acquisition, or by its stewardship of such land or easements. There are approximately 150 established trusts in California. Local and regional land trusts, organized as charitable organizations under federal tax laws, are directly involved in conserving land for its natural, recreational, scenic, historical, and productive values.

- ✓ **Local Agency Formation Commissions -** The local agency formation commission (LAFCO) is the agency that has the responsibility to create orderly local government boundaries, with the goal of encouraging "planned, well-ordered, efficient urban development patterns," the preservation of

open-space lands, and the discouragement of urban sprawl. While LAFCO has no direct land use authority, its actions determine which local government will be responsible for planning new areas. LAFCO addresses a wide range of boundary actions, including the creation of spheres of influence for cities, adjustments to special district boundaries, annexations, incorporations, detachments of areas from cities, and the dissolution of cities.

- ✓ **General Plans -** The most comprehensive land use planning in the Merced region is provided by city and county general plans, which local governments are required by state law to prepare as a guide for future development. The general plan contains goals and policies concerning topics mandated by state law or chosen by the jurisdiction. Required topics are land use, circulation, housing, conservation, open space, noise, and safety. Other topics that local governments frequently address include public facilities, parks and recreation, community design, and growth management, among others. The cities and the County's general plans must be consistent with each other. The County's general plan must cover areas not included in the city general plans (i.e., unincorporated areas). A few representative agricultural policies from general plans for the County of Merced (rural area and rural unincorporated communities), City of Merced (large urban area), and the City of Atwater (small urban area) are provided below to highlight the commitment to agricultural, Williamson Act contract lands, and forest/timber lands. This sampling of policies highlights MCAG's support for preserving these lands while also respecting and understanding local jurisdictions' land-use authority and processes. These local agricultural policies also offer the greatest available mitigation potential, given each local agency's land-use authority.

  - Merced County
    - Policy AG-2.1 - Protect agriculturally designated areas and direct urban growth away from productive agricultural lands into cities, Urban Communities, and New Towns.
    - Policy AG-2.2 - Protect productive agricultural areas from conversion to non-agricultural residential uses by establishing and implementing an agricultural mitigation program in cooperation with the six cities in Merced County, with consistent standards for county and city governments, which matches acres converted with farmland acres preserved at a 1:1 ratio. In addition, the Land Evaluation and Site Assessment Model (LESA model) may be used to determine whether the conservation land is of equal or greater value than the land being converted. The County shall exempt commercial, industrial, and mixed-use projects within Urban Communities and Highway Interchange Centers from this mitigation requirement.
    - Policy AG-2.3 - Formalize County-City agreements emphasizing concentration of new development in cities that include agricultural mitigation and avoidance of productive agricultural land conversion.
    - Policy AG-2.4 - Encourage property owner participation in programs that preserve farmland, including the Williamson Act, conservation easements, and USDA-funded conservation practices.

- Policy AG-2.5 - Encourage larger parcel size minimums (40 or more acres) and/or evidence of commercial agricultural use for entering new Williamson Act contracts.
- Policy AG-2.6 - Remove (non-renew) current Williamson Act contracts on small parcels not devoted to commercial agriculture.
- Policy AG-2.7 - Remove land not under Williamson Act contracts from the Merced County Agriculture Preserve by redrawing the current boundary of the Agricultural Preserve to create one or a series of smaller preserves aligned with contracted land.
- Policy AG-2.8 - Support the efforts of public, private, and non-profit organizations to preserve agricultural areas in the County through dedicated conservation easements, and range land held as environmental mitigation.
- Policy AG-2.9 - Oppose the extension of urban services, such as sewer lines, water lines, or other urban infrastructure, into areas designated for agricultural use, unless necessary to protect public health, safety, and welfare.
- Policy AG-2.10 - Minimize the fiscal impact to the County from State and Federal programs which result in the purchase of property in fee title through the use of mutual aid agreements, required subvention payments, and any other available means.
- Policy AG-2.11 - Collaborate with landowners, cities, State and Federal agencies, colleges, universities, stakeholders, and community-based organizations to continue and expand agricultural preservation in the County.
- Policy AG-2.12 - Encourage the voluntary merger of antiquated subdivision lots that conflict with adjacent agricultural uses and continue to require environmental review of permits that could result in adverse environmental impacts in agricultural and rural areas, including traffic generation, groundwater contamination, storm water drainage disposal, and air quality deterioration.
- Policy AG-2.13 - Require 40-acre minimum permitted parcel size in areas designated Agricultural to discourage land divisions for rural residential purposes and maintain parcels large enough for efficient commercial agriculture production. Require a minimum permitted parcel size of 160 acres in areas designated Foothill Pasture and in grassland areas.
- Policy AG-2.14 - Require applicants seeking to divide agriculturally zoned parcels to demonstrate the continued viability of lots less than 40 acres for commercial agriculture, using specific standards (i.e., access to agricultural water, joint farm management, access for aerial spraying, size viability for specific commodities) and farm management plans.
- Policy AG-2.15 - Modify the Merced County Agricultural Preserve to be consistent with the State Subdivision Map Act and Williamson Act rules for allowing parcels less than 10 acres for a limited number of circumstances authorized as exceptions in the County Zoning Code and consistent with State law.
- Policy AG-2.16 - Coordinate with the California High Speed Rail Authority to locate the high-speed rail lines along existing major transportation corridors, such as State Routes 99 or 152, to minimize the conversion of productive agricultural land to non-agricultural uses.

- Policy LU-1.1 - Direct urban development to areas within adopted urban boundaries of cities, Urban Communities, and Highway Interchange Centers in order to preserve productive agriculture, limit urban sprawl, and protect natural resources.
- Policy LU-1.2 - Limit the amount of new growth within existing Rural Centers by allowing only agriculture-supporting residential and commercial uses.
- Policy LU-1.4 - Continue to support compact Urban Communities through the efficient use of land to reduce conflicts with agricultural and open space areas and minimize public service costs.
- Policy LU-1.5 - Consider the establishment of new Urban Communities in areas off of productive agricultural land (as defined in the General Plan Glossary), which satisfy the policy requirements under Goal LU-5.F, in order to accommodate projected future growth.
- Policy LU-2.1 - Apply the Agricultural land use designation as the primary designation in the County to support productive agricultural lands and promote the agricultural industry.
- Policy LU-2.2 - Apply the Foothill Pastureland use designation on agricultural and open space lands located on the eastern and western edges of the County, which are recognized for their value as grazing, cropland, and open space.
- Policy LU-2.3 - Limit allowed land uses within Agricultural and Foothill Pasture areas to agricultural crop production, farm support operations, and grazing and open space uses.
- Policy LU-2.4 - Limit ancillary uses in Agricultural and Foothill Pasture areas to include secondary single-family residences, farm worker housing, agricultural tourism-related uses, and agricultural support services.
- Policy LU-2.6 - Prohibit the re-designation of property outside of Rural Centers, Highway Interchange Centers, or Urban Communities for a more intensive residential land use without a General Plan amendment.
- Policy LU-2.9 - Support special agricultural commercial uses in rural areas when they directly relate to and are part of an existing and permitted agricultural enterprise or operation.
- Policy LU-4.1 - Allow new rural residential development and agricultural support uses in vacant areas within existing Rural Centers, but prohibit the establishment of new Rural Centers.
- Policy LU-4.2 - Require uses within Rural Centers to be limited to: a) Commercial uses serve the daily convenience needs of the surrounding agricultural and rural areas; b) Agricultural supply and service businesses; c) Limited public facilities such as schools, fire stations, post offices, churches, granges, and veterans' halls; and/or d) Housing for agricultural workers at minimum of one unit per acre.
- Policy LU-5.F.1 - Only accept applications for the establishment of additional new Urban Communities if they encompass a minimum area of 320 acres in order to achieve efficiencies in urban service delivery and provide for long-range growth needs. In addition, require that proposed new Urban Communities be located only in areas that: a) Are off the valley floor unless the project area is clearly located on non-productive soil; b) Contain few wetlands or

significant natural resources; c) For proposals off the valley floor, do not contain more than 50 percent productive farmland (as defined in the General Plan Glossary) or 10 percent Prime Farmland (as classified on the Statewide Important Farmland Map), and for projects on the valley floor, do not contain more than 10 percent productive farmland; d) Are not located within two miles of an existing city or Urban Community; and e) Are near major transportation routes.

- Policy LU-7.1 - Encourage infill development to occur in cities in order to maximize the use of land within existing urbanized areas, minimize the conversion of productive agricultural land, and minimize environmental impacts associated with new development.
- Policy NR-3.13 - Require mining projects to obtain agricultural conservation easements at a minimum of 1:1 for each acre of productive agricultural land converted as a result of mining and not returned to agricultural production.

- City of Merced
  - OS 2.1 – Protect agricultural areas outside the City's Specific Urban Development Plan (SUDP)/Sphere of Influence (SOI) from urban impacts.
  - OS 2.2 – Relieve pressures on converting areas containing large concentrations of "prime" agricultural soils to urban uses by providing adequate urban development land within the Merced City SUDP/SOI.
- City of Atwater
  - Policy CO-4.1 – Comply with all agricultural preservation policies and implementation programs developed jointly by the City and Merced County.
  - Policy LU-13.1 – Encourage Merced County to continue to apply land use designations within Atwater's Areas of Interest that will ensure the maintenance of the existing agricultural and open space character of those lands.
  - Policy LU-14.2 – Cooperate with the City of Merced and Merced County to explore the creation of a "greenbelt" that maintains a significant portion of the land area between Atwater and Merced, and Atwater and Winton, in open space or agricultural uses.
- City of Los Banos
  - POSR-G-8 – Promote preservation of agriculture within the Planning Area.
  - POSR-I-28 – Work with the county and with the Grasslands Water District to preserve agricultural uses outside the Urban Growth Boundary.
- City of Gustine
  - Policy UG-1. – Provide land for urban development, while preserving prime and producing agricultural land, sensitive wetlands, and lands of environmental significance.
  - Policy UG-2. – Provide a transition from urban to rural land uses by controlling development that occurs outside of the City limits, but within the Sphere of Influence, with an agriculture buffer.
  - Policy AP-1. – Whenever feasible, investigate options for City-owned agriculture easements to ensure an adequate buffer is maintained between land uses.

- Policy AP-2. – Maintain the City's Right to Farm Ordinance.
- Policy AP-3. – Whenever feasible, investigate opportunities for Williamson Act contracts within the City's SOI.

➢ Community of Hilmar

- Policy OS 1.1 – Provide the open space land use designation to serve as a transition between the urban and surrounding agricultural environments, as well as create pedestrian circulation and recreational opportunities.
- Policy OS 1.2 – Establish land use designation that provides a transition between the urban and surrounding agricultural environment on the fringes of the Community.
- Policy OS 1.3 – Mitigation shall be required to preserve important farmland around Hilmar and to protect agriculture within Merced County.

✓ **Specific and Master Plans -** A city or the County may also provide land use planning by developing community or specific plans for smaller, more specific areas within their jurisdiction. These more localized plans provide focused guidance for developing a specific area, with development standards tailored to the area and the systematic implementation of the general plan.

✓ **Zoning -** The city or county zoning code is the set of detailed requirements that implement the general plan policies at the level of the individual parcel. The zoning code sets standards for different uses and identifies which uses are allowed in the jurisdiction's various zoning districts. Since 1971, State law has required a city or county zoning code to be consistent with a jurisdiction's general plan.

Environmental Setting

Merced County is home to over 1.2 million acres of productive farmland, with agricultural operations covering more than 90 percent of all land area. The prominent role of agriculture has positioned Merced County as the fifth-largest county in California and the sixth-largest in the nation in annual market value of farm products. Near year-round sun, rich, productive soil, accessible irrigation water, a large labor force, and access to local, national, and global markets have kept Merced County a thriving agricultural community.

Agricultural Land

Merced County is located in California's San Joaquin Valley, the world's richest agricultural region. The County is home to over 1.2 million acres of productive farmland, with agricultural operations covering more than 90 percent of the County's total area. Over two thousand six hundred (2,600) farmers grow more than 90 different crops, contributing more than $3.4 billion a year to the California economy. An estimated 12 percent of the labor force is directly or indirectly connected to agriculture, including those employed in food manufacturing.

Despite the low precipitation in the area and the County's dependence upon the availability of irrigation water, agriculture remains one of the primary industries in the County, with much of the level and moderately sloping land used for the production of agricultural crops. The foothills and mountain areas are used for livestock grazing. Merced County's 10 leading crops include: Milk, almonds, chickens, cattle and calves, sweet potatoes, tomatoes, silage, grapes, hay, and all nursery products. These top 10 crops are worth over $3 billion.

Williamson Act Lands

Merced County currently contains almost half a million acres of prime and nonprime agricultural land under Williamson Act preserve status. Prime agricultural land is defined as land containing the best combination of physical and chemical characteristics for the production of crops. Table 3-2 and Figure 3-3 illustrate the type and amount of agricultural land enrolled in Williamson Act Land contracts within Merced County. The Merced County Planning & Community Development Department has Williamson Act files for each contract in force. The files are incorporated by reference.

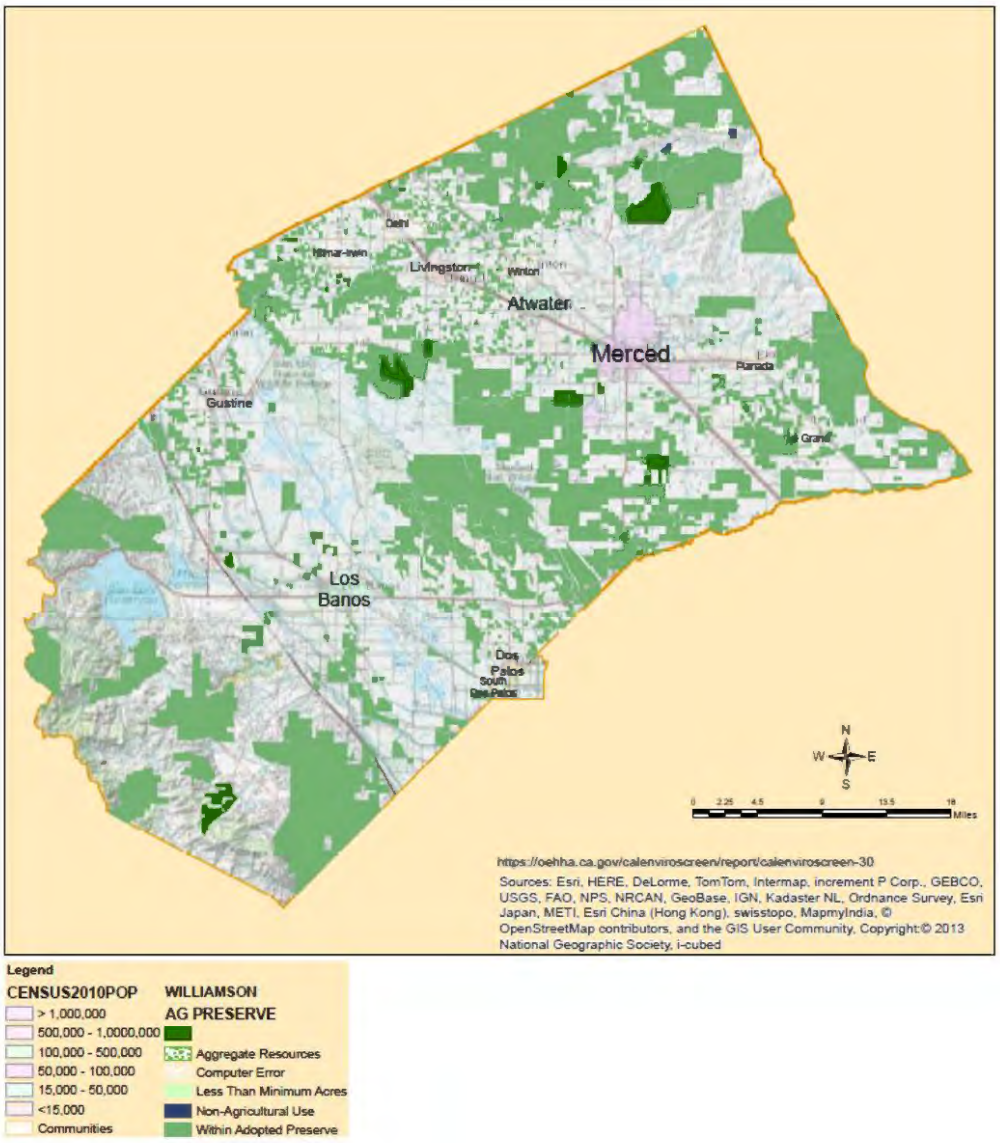
TABLE 3-2
Lands Enrolled in Williamson Act Preserve

Description		Acres
Land Conservation Act	Prime	255,900
	Non-prime	208,100
Farmland Security Zone	Urban Prime	-
	Non-urban Prime	-
	Non-urban Non-prime	-
Total		464,000

Source: California Department of Conservation, Division of Land Resource Protection, Williamson Act Enrollment Finder and GIS Database, 2025.

FIGURE 3-3

MCAG Williamson Act Land



Forest/Timber Lands

Timber lands are defined as land available for timber production and capable of growing at least 20 cubic feet of industrial-quality wood per acre per year. Private timberlands in California are governed by the Forest Taxation Reform Act of 1976. The Act created the Timberland Production Zone (TPZ) to preserve forest lands from encroachment by other incompatible land uses. The Act identifies five compatible uses: management for watershed and fish and wildlife, or hunting and fishing; uses related to the growing, harvesting, and processing of forest products; construction, alteration, or maintenance of utility facilities; and grazing.

Forest land and timberland production areas, as zoned by applicable state regulations, do not exist within Merced County. While oak woodland habitats exist in the far eastern and western sections of the County, zoning codes do not classify them as timber lands. Instead, these areas are classified as Foothill Pasture Zones. Large, forested areas or commercial forestry production do not fall within the County; therefore, no timber resources are known to exist. Timber production or harvesting operations do not contribute to the County's economy.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Criteria for Significance

- ✓ 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.
- ✓ Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- ✓ Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code, § 12220(G)), timberland (as defined by Public Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104(G)).
- ✓ Result in the loss of forest land or conversion of "Forest Land" as defined in the California Forest Legacy Act of 2007 (Pub. Resources Code, § 12220(G)) or conversion of Forest Land into non-forest use.
- ✓ Involve other changes in the existing environment, which, due to their location or nature, could result in the conversion of Farmland to non-agricultural use or the conversion of forest land to non-forest use.

Methodology

Impacts are assessed in terms of both land use and transportation impacts. By 2049, implementation of the proposed RTP/SCS will result in a land-use pattern and transportation network that differ from existing conditions. Unless otherwise stated, "existing conditions" in the proposed RTP/SCS refer to conditions in the baseline of 2023. The proposed RTP/SCS uses 2019 because it is the most recent year with comprehensive land-use, demographic, traffic-count, and VMT data available for the MCAG region. Chapter 2 of this Draft EIR – Introduction includes a more detailed discussion of the baseline for the proposed RTP/SCS. For descriptions of the agricultural environment, data from 2019, or the most recent available, were used to reflect existing conditions. Data sources used to analyze the agricultural environment included the California Department of Conservation's Farmland Monitoring and Mapping Program (FMMP) data to assess impacts on agricultural resources. These data classify agricultural resources into several categories. For purposes of this analysis, Prime Farmland, Unique Farmland, and Farmland of Statewide Importance were considered.

In addition, the California Department of Conservation's Williamson Act data were used to analyze agricultural impacts. This data includes any lands currently enrolled in a California Land Conservation Act contract. This analysis does not include lands in nonrenewal status. In addition, general plan data from each jurisdiction were used to analyze land designated for agricultural and forest uses.

Impact AG 3.3.1 – 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

Strategies to address transportation needs and future growth patterns were considered in developing the proposed RTP/SCS. The RTP promotes a preferred land-use scenario and an alternative transportation system to the automobile through enhanced funding for transit and other modes, such as bicycle facilities, trails, and airport improvements. Implementation of strategies proposed in the RTP/SCS could result in positive changes to land uses and reduced impacts on important farmland or Forest/Timber Lands. Reducing the footprint of new development, as reflected in the 2026 RTP/SCS, protects farmland, Williamson Act contract land, and other open space lands in the Merced region.

Approximately 3,279 acres of farmland and wetlands will be converted for transportation and new land-use development projects. This figure includes total land consumption both outside of and within the existing spheres of influence of the local agencies. While CEQA requires all agricultural land consumption to be analyzed, SB 375 only requires MCAG to assess the amount of important farmland consumed by or converted to urban uses outside of the recorded year 2026 spheres of influence of each of the local jurisdictions or agencies within the County.

Implementation of transportation improvements included in the RTP could influence land use patterns throughout the region, as shown in the SCS, and result in the conversion of important agricultural lands. Land use and transportation policies are emphasized in the RTP in order to address automobile traffic and air quality concerns. Growth patterns that promote alternatives to the automobile by creating mixed-use developments, which would include residences, shops, parks, and civic institutions, linked to pedestrian- and bicycle-friendly public transportation centers, are also discussed in the RTP/SCS.

Implementation of enhanced alternative modes as provided by the RTP could lead to more balanced land-use conditions throughout the region, as mixed-use developments would concentrate jobs and residences in close proximity. This could reduce the footprint of new development, as reflected in the 2026 RTP/SCS, thereby protecting farmland, Williamson Act contract land, forest/timber land, and other open space lands in the Merced region. As a result, there are no major differences in impact among the alternatives studied. For purposes of the analysis, it is not possible to accurately reflect the amount of agricultural land that would be impacted by new or expanding transportation improvement projects. There are a number of key factors that must be considered in order to make such a calculation, including, but not limited to, the following:

- ✓ Amount of Right-of-way (ROW) already acquired by the affected local agency or Caltrans
- ✓ The amount of ROW impacting agricultural operations vs. vacant of any use
- ✓ How wide the expanded or new facility will be
- ✓ Pedestrian and streetscape improvements
- ✓ Provision for parking and type of parking
- ✓ Need for bus turnouts
- ✓ Staging area requirements
- ✓ Location of utility easements and relocation
- ✓ Road alignment
- ✓ The need for roundabouts is now required along Caltrans facilities where warranted – require more ROW
- ✓ Whether traveler safety is an issue that would require wider lanes, shoulders, or median treatments
- ✓ The need for truck acceleration and deceleration lanes
- ✓ Extent of intersection improvements
- ✓ Bike lane requirements, lane type, and width
- ✓ The need for passing lanes
- ✓ The need for continuous left turn lanes
- ✓ Other turn lanes
- ✓ The extent of drainage facilities and culverts
- ✓ Bridge requirements and footprint
- ✓ Overcrossing and undercrossing requirements and footprint
- ✓ Other considerations

While other MPOs may have estimated the impact of new facilities on agricultural operations, the estimates are rough, considering the above. The exact extent of agricultural land impacts by type of farmland can only be known once design plans and environmental reviews for each individual transportation improvement project are complete. It is not possible on the regional scale of the MCAG 2026 RTP/SCS EIR. As such, mitigation measures to be carried out by the agencies responsible for implementing RTP/SCS transportation improvement projects are included in the Draft PEIR and will reduce

the severity of potential significant impacts if implemented in accordance with the noted measures. The extent to which the measures will be effective can only be determined as environmental documents are prepared for individual improvement projects. While there are mountain communities, forest land, and timberland production areas, as defined by applicable State regulations, these are not present in Merced County. Oak woodland habitats exist in portions of the County, both east and west, but are not classified as timber lands under zoning; rather, they are zoned as Foothill Pasture zones. Timber production and timber production areas are not contributing to industries in the local economy; therefore, no impacts would occur related to forest land resources. Growth and development outside of those planned growth areas would not be consistent with the goals and policies of the Merced County General Plan.

Mitigation Measures

The specific impacts on the conversion of important farmlands or forest/timber lands will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land-use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land-use authority to approve development projects, MCAG's role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **AR 3.3.1-1** MCAG shall work with its member agencies and Caltrans as they implement projects to commit to mitigating at a 1:1 ratio any loss of farmland or natural lands due to projects funded by MCAG.

- ✓ **AR 3.3.1-2** Implementing agencies should encourage infill development, in place of development in rural and environmentally sensitive areas. Agencies should seek funding to prepare specific plans and related environmental documents to facilitate mixed-use development and enable these areas to serve as receiving sites for the transfer of development rights away from environmentally sensitive lands and rural areas outside established urban growth boundaries.

- ✓ **AR 3.3.1-3** Implementing agencies should consider agricultural resource lands when considering project designs. Prior to design approval for RTP/SCS projects, the implementing agency should assess the project area for agricultural and forestry resources and constraints. For federally funded projects, implementing and local agencies are required to follow the rules and regulations of the Farmland Protection Policy Act, including determining the impact by completing the Farmland Conversion Impact Rating form (AD-1006). For non-federally funded projects, implementing and local agencies should assess projects for the presence of important farmland (prime farmland, unique farmland, farmland of statewide importance) and, if present, perform a Land Assessment and Site Evaluation (LESA).

- ✓ **AR 3.3.1-4** Implementing agencies should consider agriculture and forestry resources in all projects and seek to avoid or minimize the encroachment and/or impact on these areas. Agencies should consider measures such as, but not limited to, relocation or redesign of site features, reduction of the project footprint, or compensation and/or preservation activities to lessen the overall impact on resource lands. Prior to final approval of each transportation improvement project, the implementing agency should consider whether to include a conservation easement program or enroll agricultural lands in the Williamson Act program.

Significance After Mitigation

The responsibility to approve land-use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of mitigation strategies to avoid or reduce the identified significant impacts.

Impact AR 3.3.2 – Conflict with existing zoning for agricultural use, or a Williamson Act Contract

Transportation improvement projects and future land use development projects have the potential to affect agricultural and forest/timber lands zoned for agricultural use, as noted in Tables 3-1 and Figure 3-2, or Williamson Act contract lands, as noted in Table 3-2 and Figure 3-3. The amount of agricultural and forest/timber-zoned lands impacted by the 2026 RTP/SCS is not available, but would be consistent with the lands quantified and reflected in Table 3-1. The number of Williamson Act contract lands that could be affected by the Project is not available, but would be consistent with the preferred Scenario 3 development.

Conversion of forest and timberland is not anticipated, as growth in rural areas of the County has been allocated to existing communities and cities, consistent with adopted or draft general plans for the County of Merced and each of the affected cities. The extent of important farmland, Williamson Act contract lands, or forest/timber lands affected by transportation improvement projects cannot be fully estimated because the actual designs and scopes of improvements for projects in the RTP/SCS are unknown. As a result, the development of the proposed Project could disturb or lose some of these designated areas. Specifically, new transportation and future land-use development projects involving construction would most likely affect these areas.

Mitigation Measures

The specific impacts on conflicts with existing zoning for agricultural use or a Williamson Act contract will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land-use authority to approve development projects, MCAG's role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **AR 3.3.2-1** Mitigation Measures referenced in Section 3.3.1, above are also included by reference.

- ✓ **AR 3.3.2-2** Individual projects will be consistent with federal, state, and local policies that preserve agricultural lands and support the economic viability of agricultural activities, as well as policies that provide compensation for property owners if preservation is not feasible.

- ✓ **AR 3.3.2-3** For projects in agricultural areas, project implementation agencies should contact the California Department of Conservation and the Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy.

- ✓ **AR 3.3.2-4** Prior to final approval of each individual improvement project, the implementing agency should avoid impacts to prime farmlands or farmlands that support crops considered valuable to the local or regional economy.

Significance After Mitigation

The responsibility to approve land-use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact AR 3.3.3 - Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220 (g), timberland (as defined by Public Resources Code section 4526), or Timberland is zoned Timberland Production (as defined by Government Code section 51104(g)).

Transportation improvement projects and future land use development projects have the potential to impact or conflict with existing zoning, or to cause the rezoning of timberland and forest lands. The amount of timber or forest lands potentially impacted by or in conflict with existing zoning by the 2026 RTP/SCS is not available; however, significant rezoning of forest and timberland is not anticipated since the growth within rural areas of the County has been allocated to existing communities and cities in the rural areas consistent with adopted or draft general plans for the County of Merced and each of the affected cities. The amount of forest/timberland that could be rezoned by transportation improvement projects cannot be fully estimated because the actual designs and extent of improvements for projects in the RTP/SCS are unknown. As a result, the development of the proposed Project could lead to the rezoning of some of these designated areas.

Mitigation Measures

The specific impacts on or conflicts with existing zoning related to timber or forest lands will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land-use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land-use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **AR 3.3.3-1** Mitigation Measures referenced in Impact 3.3.1, above are also included by reference.

- ✓ **AR 3.3.3-2** Individual projects will be consistent with federal, state, and local zoning policies that preserve timber or forest lands and support the economic viability of forest activities, as well as policies that provide compensation for property owners if preservation is not feasible.

- ✓ **AR 3.3.3-3** For projects in timber or forest areas, project implementation agencies should contact the California Department of Forestry and Fire Protection (CAL FIRE) and the U.S. Forest Service to identify the location of timber and forest lands to address applicable zoning regulations and processes.

Significance After Mitigation

The responsibility to approve land-use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project

area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the significant impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact AR 3.3.4 – Result in the loss of forest land or conversion of forest land to non-forest use.

Transportation improvement projects and future land use development projects have the potential to convert forest lands to non-forest uses. The amount of forest lands potentially impacted by the 2026 RTP/SCS is not available; however, significant loss or conversion of forest land is not anticipated since the growth within rural areas of the County has been allocated to existing communities and cities in the rural areas consistent with adopted or draft general plans for the County of Merced and each of the affected cities. The extent of forest land potentially affected by transportation improvement projects cannot be fully estimated because the actual designs and scopes of improvements for projects in the RTP/SCS are unknown. As a result, the development of the proposed Project could lead to the loss or conversion of forest lands. Specifically, new transportation and future land-use development projects involving construction would most likely affect these areas.

Mitigation Measures

The specific impacts related to the loss or conversion of forest lands to non-forest uses will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land-use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG lacks land-use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **AR 3.3.4-1** Mitigation Measures referenced in Impact 3.3.1, above are also included by reference.

- ✓ **AR 3.3.4-2** Individual projects will be consistent with federal, state, and local policies that preserve forest lands and support the economic viability of forest activities, as well as policies that provide compensation for property owners if preservation is not feasible.

- ✓ **AR 3.3.4-3** For projects in forest areas, project implementation agencies should contact the California Department of Forestry and Fire Protection (CAL FIRE) and the U.S. Forest Service to identify the location of forest lands and address applicable regulations and processes.

✓ **AR 3.3.4-4** Prior to final approval of each individual improvement project, the implementing agency should avoid impacts on forest lands.

Significance After Mitigation

The responsibility to approve land-use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact AR 3.3.5 – 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.

Implementation of the proposed RTP/SCS will result in more compact development than the existing conditions. By developing more compactly, the RTP/SCS directs more growth to already urbanized areas and prevents undeveloped land from being converted to urban uses. Focusing growth in already developed areas limits growth at the urban edge, adjacent to agricultural areas. As discussed in Impact sections 3.3.1 through 3.3.4, implementation of the Project will result in the conversion of important farmland and lands under Williamson Act contracts. Lands that remain agricultural but are located near areas slated for urban development may feel pressure to develop, as nearby land values increase or as urban development-related nuisances spread to agricultural lands. As a result, indirect impacts on agricultural lands from this development pressure are considered potentially significant.

The region will see numerous multi-modal transportation improvements implemented over the RTP/SCS planning period. While much of this transportation infrastructure will serve urban uses in the region's urbanized areas, implementing transportation improvements at the urban edge could increase traffic on roads that serve both urban development and agricultural lands. Increased road traffic at the urban edge can lead to greater conflict between uses, potentially resulting in the conversion of additional agricultural land. As noted above, the proposed RTP/SCS will result in more compact development than existing conditions. The RTP/SCS is designed to improve transportation options and increase capacity within urbanized areas. Enhanced transportation adjacent to agricultural uses may improve opportunities by creating better access and increasing the viability of activities such as farm-to-market retail. However, owners of agricultural land nearest to urbanized areas may feel pressure to develop as transportation

improvements in the vicinity of these lands are implemented. Pressure may also increase as the surrounding land uses continue to urbanize. As a result, the impacts on farmland from transportation improvements associated with the implementation of the proposed RTP/SCS are considered potentially significant.

Mitigation Measures

The specific impacts regarding other changes to the existing environment will be evaluated as part of the implementation agencies' project-level environmental review process regarding their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction.

✓ **AR 3.3.5-1** Reference the mitigation measure reflected in Impacts 3.3.1 and 3.3.4.

Significance After Mitigation

The responsibility to approve land-use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

3.4 AIR QUALITY

This section describes the environmental and regulatory setting for air quality in the Merced County region and analyzes the potential air quality impacts resulting from the implementation of MCAG's 2026 RTP/SCS. This section portrays the existing air quality conditions in the Merced County region, related air quality regulations, the air quality impacts of project construction and operation, and, where necessary and feasible, identification of any mitigation measures required to reduce impacts.

Regulatory Setting

Air quality in Merced County is addressed by various federal, State, regional, and local government agencies. These agencies work jointly and individually to improve air quality through legislation, regulations, planning, policymaking, education, and a variety of programs. The agencies primarily responsible for improving air quality in Merced County are discussed below, along with their respective responsibilities.

Federal Agencies

- ✓ **U.S. Environmental Protection Agency (EPA) and Federal Clean Air Act (CAA) -** The Federal Clean Air Act, first adopted in 1967 and periodically amended since then, established federal ambient air quality standards. A 1987 amendment to the Bill set a deadline for the attainment of these standards. That deadline has since passed. The other CAA Bill Amendments, passed in 1990, share responsibility with the State in reducing emissions from mobile sources. The U.S. Environmental Protection Agency (EPA) is responsible for enforcing the 1990 amendments.

  The CAA and the national ambient air quality standards identify levels of air quality for six "criteria" pollutants, which are considered the maximum safe levels of ambient air pollutants, with an adequate margin of safety, to protect public health and welfare. The six criteria pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead.

  CAA Section 176(c) (42 U.S.C. 7506(c)) and EPA transportation conformity regulations (40 CFR 93 Subpart A) require that each new RTP and Transportation Improvement Program (TIP) be demonstrated to conform to the State Implementation Plan (SIP) before the RTP and TIP are approved by the Metropolitan planning organization (MPO) or accepted by the U.S. Department of Transportation (DOT). The conformity analysis is a federal requirement designed to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS). However, because the State Implementation Plan (SIP) for particulate matter 10 microns or less in diameter (PM_{10}), particulate matter 2.5 microns or less in diameter ($PM_{2.5}$), and Ozone address attainment of both the State and

federal standards, for these pollutants, demonstrating conformity to the federal standards is also an indication of progress toward attainment of the State standards. Compliance with the State air quality standards is documented on the pages that follow this federal conformity discussion.

The EPA approved the San Joaquin Valley reclassification of the ozone (8-hour) designation to extreme nonattainment in the Federal Register on May 5, 2010, even though the San Joaquin Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard. In accordance with the CAA, EPA uses the design value at the time of standard promulgation to assign nonattainment areas to one of several classes that reflect the severity of the nonattainment problem; classifications range from marginal nonattainment to extreme nonattainment. In the Federal Register on October 26, 2015, the EPA revised the primary and secondary standard to 0.070 parts per million (ppm) to provide increased public health protection against health effects associated with long- and short-term exposures. The previous ozone standard was set in 2010 at 0.075 ppm.

EPA completed its review of the available scientific evidence and exposure information on December 23, 2020, and chose to maintain the existing ozone NAAQS. EPA concluded that the current standards protect public health, including at-risk populations, with an adequate margin of safety and protect public welfare from adverse effects. The primary and secondary standards, established in 2015, remain 0.070 parts per million (ppm), measured as the three-year average of the fourth-highest daily maximum 8-hour concentration.

Merced County is located in a nonattainment area for the 8-hour ozone standard (1997, 2006, and 2012 PM2.5 standards) and has a maintenance plan for the PM_{10} standard.

Federal Regulations

- ✓ **National Environmental Policy Act (NEPA) -** NEPA provides general information on the effects of federally funded projects. The Act was implemented through regulations in the Code of Federal Regulations (40 CFR 6). The code requires careful consideration concerning the environmental impacts of federal actions or plans, including projects that receive federal funds. The regulations address impacts on land uses and conflicts with state, regional, or local plans and policies, among others. They also require that projects requiring NEPA review seek to avoid or minimize adverse effects of proposed actions and to restore and enhance environmental quality as much as possible.

- ✓ **State Implementation Plan (SIP)/ Air Quality Management Plans (AQMPs)** - To ensure compliance with the NAAQS, EPA requires states to adopt SIP aimed at improving air quality in areas of nonattainment or a Maintenance Plan aimed at maintaining air quality in areas that have attained a given standard. New and previously submitted plans, programs, district rules, state regulations, and federal controls are included in the SIPs. Amendments made in 1990 to the federal CAA established deadlines for attainment based on an area's current air pollution levels. States must enact additional

regulatory programs for nonattainment areas to comply with the CAA Section 172. In California, SIPs must comply with both the NAAQS and the California Ambient Air Quality Standards (CAAQS).

To ensure that State and federal air quality regulations are being met, Air Quality Management Plans (AQMPs) are required. AQMPs present scientific information and use analytical tools to identify a pathway towards attainment of NAAQS and CAAQS. The San Joaquin Valley Air Pollution Control District (SJVAPCD) develops the AQMPs for the region where the Merced County Association of Governments (MCAG) operates. The regional air districts begin the SIP process by submitting their AQMPs to the California Air Resources Board (CARB). CARB is responsible for revising the SIP and submitting it to the EPA for approval. EPA then acts on the SIP in the Federal Register. The items included in the California SIP are listed in the Code of Federal Regulations Title 40, Chapter 1, Part 52, Subpart 7, Section 52.220.

- ✓ **Transportation Conformity Requirements** - The Federal transportation conformity regulations (40 Code of Federal Regulations Parts 51 and 93) specify criteria and procedures for conformity determinations for transportation plans, programs, and projects and their respective amendments. The Federal transportation conformity regulation was first promulgated in 1993 by the EPA, following the passage of amendments to the CAA in 1990. The Federal transportation conformity regulation has been revised several times since its initial release to reflect both EPA rule changes and court opinions.

  On March 14, 2012, the EPA published the Transportation Conformity Rule Restructuring Amendments, effective April 13, 2012 (EPA, 2012). The amendments restructure several sections of the rule so that they apply to any new or revised National Ambient Air Quality Standards. In addition, several clarifications to improve the rule's implementation were finalized.

  The conformity regulation applies nationwide to "all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan" (40 CFR 93.102). Currently, the San Joaquin Valley (or portions thereof) is designated as nonattainment with respect to federal air quality standards for ozone and PM2.5, and has a maintenance plan for PM_{10}. The urbanized/metropolitan areas of Kern, Fresno, Stanislaus, and San Joaquin Counties have attained the CO standard and maintained attainment for 20 years, thus conformity requirements for CO no longer apply. Transportation plans, programs, and projects for the Merced County non-attainment area must comply with the Federal transportation conformity regulations.

  Under the transportation conformity regulation, the principal criteria for a determination of conformity for transportation plans and programs are:

  - The TIP and RTP must pass an emissions budget test using a budget found adequate by the EPA for transportation conformity purposes, or an interim emissions test.

- The latest planning assumptions and emission models specified for use in conformity determinations must be employed.
- The TIP and RTP must provide for the timely implementation of transportation control measures (TCMs) specified in the applicable air quality implementation plans.
- Interagency and public consultation.

On-going interagency consultation is conducted through the San Joaquin Valley Interagency Consultation Group to ensure Valley-wide coordination, communication and compliance with CAA and CCAA requirements. Each of the eight Valley MPOs and the SJVAPCD are represented. The Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the U.S. EPA, CARB and Caltrans are also represented on the committee. The final determination of conformity for the TIP and RTP is the responsibility of FHWA, and FTA within the U.S. DOT.

✓ **Transportation Control Measures -** One particular aspect of the SIP development process is the assessment of available transportation control measures (TCMs) as a part of making progress towards clean air goals. TCMs are defined in Section 108(f)(1) of the CAA and are strategies designed to reduce vehicle miles traveled, vehicle idling, and associated air pollution. These goals are generally achieved by developing attractive and convenient alternatives to single-occupant vehicle use. Examples of TCMs include ridesharing programs, transportation infrastructure improvements such as adding bicycle and carpool lanes, and expansion of public transit.

✓ **Energy Policy Act of 1992 (EPAct) -** The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be available to businesses and individuals to cover the incremental cost of alternative-fuel vehicles (AFVs). States are also required by the act to consider a variety of incentive programs to help promote AFVs.

✓ **Mobile Source Air Toxics (MSAT) -** Several mobile source emissions control programs were adopted by the U.S. EPA. These include:

- Control of Hazardous Air Pollutants from Mobile Sources – This rule was finalized in February 2007. It aims to reduce hazardous air pollutants from mobile sources by limiting the benzene content of gasoline and reducing the toxic emissions allowable from gas cans and passenger vehicles. The EPA predicts that total emissions from mobile sources will be reduced by 330,000 tons, and the volatile organic compounds (VOC) emissions will be reduced by over 1 million tons by 2030 as a result of the implementation of this rule.

- Heavy-Duty Onboard Diagnostic Rule (74 FR 8310) – This rule, finalized in 2009, requires that advanced emissions control systems be monitored for malfunctions with an onboard diagnostic system (OBD). It requires manufacturers to install OBD systems to monitor the operation of emissions-control components and notify the user when an emission-related repair is necessary.
- Small SI and Marine SI Engine Rule (73 FR 25098) – These exhaust emissions standards went into effect in 2010, regulating new marine spark-ignition engines. This rule included the first EPA standards for sterndrive and inboard engines. In 2011 and 2012, exhaust emission standards were applied to new land-based spark-ignition engines at or below 19 kilowatts (kW). The majority of these small engines are used in lawn and garden applications. This rule is anticipated to reduce volatile organic hydrocarbon emissions by 604,000 tons, nitrogen oxide (NOx) emissions by 132,200 tons, and directly emitted particulate matter emissions by 5,500 tons annually.
- Locomotive and Commercial Marine Rule (66 FR 5002) – This rule applies to all locomotives, including line-haul, switch, passenger, and all types of marine diesel engines below 30 liters per cylinder displacement, including commercial and recreational, propulsion, and auxiliary. Enacted in 2009, the near-term program establishes new emissions limits for existing locomotives and marine diesel engines. These emission limits apply when the engine was manufactured and take effect as soon as remanufactured systems become available. The application of high-efficiency catalytic after-treatment technology is the basis for long-term emission standards for new locomotives and marine diesel engines.
- Clean Air Nonroad Diesel Rule (65 FR 6698) – This comprehensive national program was established in 2004. It regulates nonroad diesel engines and diesel fuel as a system. The new engine standards began phasing into the industry in the 2008 model year. The use of advanced exhaust emission control devices is the basis for these standards.
- Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements (66 FR 5002) – These requirements, established in 2001, regulate heavy-duty vehicles and their fuel as a single system. In model year 2007, new emission standards took effect for heavy-duty engines and vehicles. The use of advanced exhaust emission control devices is the basis for these standards.
- New Source Performance Standards (NSPS) for Stationary Engines – Diesel engines used for nonroad purposes, such as construction equipment, agricultural equipment, airport ground service equipment, or utility equipment, are subject to several Tiers of regulation. Tier 1 was published in 1996 and established the first set of emission regulations for these engines. Tier 4 required all manufacturers to produce new engines with advanced emission control systems and began phasing in for all engines in 2017.

State Agencies

- **California Air Resources Board (CARB) –** CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing its own

air quality legislation called the CCAA, adopted in 1988. CARB was created in 1967 by merging the California Motor Vehicle Pollution Control Board and the Bureau of Air Sanitation and its Laboratory.

CARB has primary responsibility in California for developing and implementing air pollution control plans designed to achieve and maintain the NAAQS established by the EPA. Whereas CARB has primary responsibility and produces a major part of the SIP for pollution sources statewide, it relies on the local air districts to provide additional strategies for sources under their jurisdiction. CARB combines its data with all local district data and submits the completed SIP to the EPA. The SIP consists of the emissions standards for vehicular sources and consumer products set by CARB, and attainment plans adopted by the Air Pollution Control Districts (APCDs) and Air Quality Management Districts (AQMDs), and then approved by CARB.

States may establish their own standards, provided the State standards are at least as stringent as the NAAQS. California has established California Ambient Air Quality Standards (CAAQS) pursuant to California Health and Safety Code (CH&SC) [§39606(b)] and its predecessor statutes.

The CH&SC [§39608] requires CARB to "identify" and "classify" each air basin in the State on a pollutant-by-pollutant basis. Subsequently, CARB designated areas in California as nonattainment based on violations of the CAAQSs. Designations and classifications specific to the San Joaquin Valley Air Basin (SJVAB) can be found in the next section of this document. Areas in the State were also classified by the severity of air pollution. For each nonattainment class, the CCAA specifies air quality management strategies that must be adopted. For all nonattainment categories, attainment plans are required to demonstrate a five-percent-per-year reduction in nonattainment air pollutants or their precursors, averaged every consecutive three-year period, unless an approved alternative measure of progress is developed. In addition, air districts that are in violation of CAAQS are required to prepare an Air Quality Attainment Plan (AQAP) that outlines a program to attain and maintain compliance with the CCAA mandates.

Other CARB duties include monitoring air quality. CARB has established and maintains, in conjunction with local APCDs and AQMDs, a network of sampling stations called the State and Local Air Monitoring (SLAMS) network, which monitors current pollutant levels in ambient air.

Merced County is in the CARB-designated SJVAB. A map of the SJVAB is provided in Figure 3-4. In addition to Merced County, the SJVAB includes Fresno, Kern, Kings, Madera, San Joaquin, Stanislaus, and Tulare Counties. Federal and State standards for criteria pollutants are provided in Table 3-3.

FIGURE 3-4

California Air Basins



TABLE 3-3

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3) [8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10) [9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		--		
Fine Particulate Matter (PM2.5) [9]	24 Hour	--	--	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	9.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	--	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	--	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		--	--	
Nitrogen Dioxide (NO_2) [10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	--	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		53 ppb (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2) [11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	--	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	--		--	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for cetain areas) [11]	--	
	Annual Arithmetic Mean	--		0.030 ppm (for cetain areas) [11]	--	
Lead [12,13]	30 Day Average	1.5 µg/m^3	Atomic Absorption	--	--	High Volume Sampler and Atomic Absorption
	Calendar Quarter	--		1.5 µg/m^3 (for certain areas) [12]	Same as Primary Standard	
	Rolling 3-Month Average	--		0.15 µg/m^3		
Visibility Reducing Particles [14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride [12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page ...

Footnotes:

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the U.S. EPA.
8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On February 7, 2024, the national annual PM2.5 primary standard was lowered from 12.0 µg/m3 to 9.0 µg/m3. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 µg/m3, as was the annual secondary standard of 15 µg/m3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

State Regulations

- ✓ **CARB Mobile-Source Regulation -** The State of California is responsible for controlling emissions from the operation of motor vehicles in the State. Rather than mandating the use of specific technology or the reliance on a specific fuel, CARB's motor vehicle standards specify the allowable grams of pollutant per mile driven. In other words, the regulations focus on the reductions needed rather than on the manner in which they are achieved.

- ✓ **California Clean Air Act -** The CCAA was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the state's air quality goals, planning and regulatory strategies, and performance. The CCAA establishes more stringent ambient air quality standards than those included in the Federal CAA. CARB is the agency responsible for administering the CCAA. CARB established ambient air quality standards pursuant to the CH&SC [§39606(b)], which are similar to the federal standards. The SJVAPCD is one of 35 AQMDs that have prepared air quality management plans to achieve a five percent (5%) annual reduction in emissions and document progress toward the State ambient air quality standards.

- ✓ **Tanner Air Toxics Act -** California regulates Toxic Air Contaminants (TACs) primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and has adopted EPA's list of Hazardous Air Pollutants (HAPs) as TACs. Once a TAC is identified, CARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology (BACT) to minimize emissions.

  AB 2588 requires that existing facilities that emit toxic substances above a specified level prepare a toxic-emission inventory, conduct a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk-reduction measures. CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources, including transit buses, and for off-road diesel equipment (e.g., tractors, generators).

  These rules and standards provide for:

  - More stringent emission standards for some new urban bus engines, beginning with 2002 model year engines.
  - Zero-emission bus demonstration and purchase requirements applicable to transit agencies

- Reporting requirements under which transit agencies must demonstrate compliance with the urban transit bus fleet rule.

✓ **California Environmental Quality Act (CEQA) -** CEQA defines a significant impact on the environment as a substantial, or potentially substantial, adverse change in the physical conditions within the area affected by the project. Land use is a required impact assessment category under CEQA. CEQA documents generally evaluate land use in terms of compatibility with existing land uses and consistency with local general plans and other local land use controls (zoning, specific plans, etc.).

✓ **Mulford-Carrell Act of 1967 -** CARB was established by the State Legislature through the Mulford-Carrell Act in 1967 (Health & Safe Code, § 39011, 39301), which combined the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board within the Department of Health. The State of California is responsible for developing programs and strategies to reduce emissions of smog-forming pollutants and toxics from mobile sources. CARB develops air quality regulations at the State level, which mirror federal regulations by establishing industry-specific pollution controls for criteria, toxic, and nuisance pollutants. CARB is responsible for setting standards and regulations to achieve the maximum possible emissions reductions from vehicular and other mobile sources. California also requires areas to develop plans and strategies to attain the CAAQS, as specified in the CCAA. In a more recent development, CARB has increased its efforts to implement and develop standards for greenhouse gas emissions associated with climate change.

✓ **Assembly Bill No.1807 (AB 1807), 1983 – TAC Regulations -** AB 1807 (Stats. 1983, Ch. 1047) (Health & Safe Code, § 39650 et seq.; Food & Ag. Code, § 14021 et seq.) establishes a procedure to identify and control TACs in California. The Air Toxics Hot Spots Information and Assessment Act, also known as AB 2588 (Stats. 1987, Ch. 1257), supplements the AB 1807 program by mandating a statewide TAC inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks. Senate Bill (SB) 1731 amends the "Hot Spots" Program and requires OEHHA to adopt risk assessment guidelines for the program.

The Air Toxics Hot Spots Program Guidance Manual was revised to include findings in the use of age-sensitivity factors for estimating cancer risk, breathing rates, and the fraction of time residents spend at home; changes to the duration of exposure for residents and workers; and the incorporation of uncertainty factors into reference exposure levels. Approved by the EPA, the update also included the release of the Hot Spots Analysis and Reporting Program, Version 2 (HARP 2) software package, which includes the AERMOD air pollutant dispersion model, and as a result, emission sources can detect a substantially higher health risk for residential uses and other sensitive receptors. Additionally, SB 352, Stats. 2003, Ch. 668) (Ed. Code, § 17213; Pub. Resources Code, § 21151.8) demands that any school site located within 500 feet of the edge of the closest travel lane of a freeway or other busy traffic corridor be reviewed for potential short-term and long-term health risks.

In the last ten years of analyzing relevant data, a considerable link between traffic-generated TACs and adverse health effects has been identified. In response, publications such as the CARB Handbook were developed to provide guidance on land use compatibility with sources of TACs (CARB, 2005). The CARB Handbook is not a law or adopted policy but offers advisory recommendations for the siting of sensitive receptors near uses associated with TACs, such as freeways and high-traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities, to protect children and other sensitive populations. Together, the Guidance Manual and CARB Handbook are important tools for planning healthy communities because they assist in assessing and identifying the risks from toxic air emissions and reducing future exposure risk through careful consideration of sensitive land uses.

- ✓ **Executive Order (EO) B-32-15, Sustainable Freight Transport Initiative –** Governor Brown signed Executive order B-32-15 on July 17, 2015 to require the Secretary of the California State Transportation Agency, the Secretary of Cal/EPA, and the Secretary of the Natural Resources Agency to lead other relevant State departments including the CARB, the Caltrans, the California Energy Commission (CEC), and the Governor's office of Business and Economic Development to improve freight efficiency, transition to zero-emission technologies, and increase competition of the State's freight system.

- ✓ **California Wellness Plan –** The California Department of Public Health published a statewide Wellness Plan in 2014. The Plan takes into consideration the factors that contribute to an individual's health. These factors include the physical environment (housing, neighborhood, access to healthy food), educational attainment and employment, economic status, social norms and attitudes, culture, literacy, and race/ethnicity. The physical environment is also an indicator of exposure to toxins and transportation, with individuals affected daily by the air quality of their surroundings.

- ✓ **Senate Bill No. 44 (SB 44) Mobile Source Strategy –** SB 44 requires CARB to update the 2016 mobile source strategy no later than January 1, 2021, and at least every 5 years thereafter. CARB is also required to include a comprehensive strategy addressing emissions from medium- and heavy-duty vehicles, as well as recommend reasonable and achievable goals for reducing emissions from these vehicles by 2030 and 2050, respectively. CARB will also be required to submit the updated Mobile Source Strategy to the relevant policy and fiscal committees of the Legislature.

- ✓ **Senate Bill No. 210 (SB 210) Heavy-Duty Vehicle Inspection and Maintenance Program –** SB 210 directs CARB to develop and implement a Heavy-Duty Vehicle Inspection and Maintenance Program for non-gasoline heavy-duty on-road motor vehicles with a gross vehicle weight rating of more than 14,000 pounds. CARB is required, within four years following the full implementation of the program, to provide two biennial reports on its website that include enforcement, operational downtime, and an estimate of emissions reduced and cost-effectiveness.

- ✓ **CARB Air Quality and Land Use Handbook** – CARB published the Air Quality and Land Use Handbook in April 2005. The Handbook is an informational and advisory guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. Studies indicate that diesel exhaust and other cancer-causing chemicals emitted from cars and trucks are responsible for a large fraction of the overall cancer risk from airborne toxics in the State. This document highlights the potential health impacts associated with proximity to air pollution sources and aligns with CARB's public health priorities to reduce diesel PM emissions each year.

Regional Agencies

- ✓ **San Joaquin Valley Air Pollution Control District -** The SJVAPCD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within Merced County and throughout the SJVAB. The SJVAPCD is also responsible for monitoring air quality and setting and enforcing limits on source emissions. CARB is the agency with legal responsibility for regulating mobile-source emissions. The SJVAPCD is precluded from such activities under State law.

  The SJVAPCD was formed in mid-1991 and prepared and adopted the San Joaquin Valley Air Quality Attainment Plan (AQAP), dated January 30, 1992, in response to the requirements of the State CCAA. The CCAA requires each non-attainment district to reduce pertinent air contaminants by at least five percent (5%) per year until new, more stringent 1988 State air quality standards are met. There are two (2) air quality-monitoring sites located in Merced County, which are located along Coffee Street and Vierra Drive (at Medieval Street), as illustrated in Figure 3-5:

  Activities of the SJVAPCD include the preparation of AQMPs, adoption and enforcement of rules and regulations concerning sources of air pollution, issuance of permits for stationary sources of air pollution, inspection of stationary sources of air pollution and response to citizen complaints, monitoring of ambient air quality and meteorological conditions, and implementation of programs and regulations required by the Federal CAA and CCAA.

  The SJVAPCD has prepared the following State Implementation Plans to address Ozone, $PM_{10,}$ and $PM_{2.5}$ that currently apply to the Merced non-attainment area:

  - The 2022 Plan for the 2015 8-Hour Ozone Standard (2022 Ozone Plan) was adopted by SJVAPCD on December 15, 2022. The 2022 Ozone Plan was developed to ensure attainment of the 70 parts per billion (ppb) 8-hour ozone standard.

  - The 2016 Ozone Plan (2008 standard) was adopted by SJVAPCD on June 16, 2016, and subsequently adopted by ARB on July 21, 2016.

  - The 2013 1-Hour Ozone Plan (revoked 1997 standard) was adopted by the SJVAPCD on September 19, 2013. EPA withdrew its approval of the plan due to litigation. The District plans to submit a

"redesignation substitute" to EPA to maintain its attainment status for this revoked ozone standard.

- The 2024 Plan for the 2012 Annual $PM_{2.5}$ Standard was adopted by SJVAPCD on June 20, 2024. The Plan was developed to ensure attainment of the federal health-based 2012 national ambient air quality standard (NAAQS) for fine particulate matter ($PM_{2.5}$).

- The 2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standard was adopted by the SJVAPCD on November 15, 2018.

- The 2012 $PM_{2.5}$ Plan (as revised in 2015) was approved by EPA on August 16, 2016 (effective September 30, 2016).

- The 2007 PM_{10} Maintenance Plan (as revised in 2015) was approved by EPA on July 8, 2016 (effective September 30, 2016).

- The 2006 PM_{10} Plan, adopted by SJVAPCD on February 16, 2006, is a continuation of the Air District's strategy for achieving the PM_{10} NAAQS.

The SJVAPCD also prepared the Guide for Assessing and Mitigation Air Quality Impacts (GAMAQI), dated March 19, 2015. The GAMAQI is an advisory document that provides Lead Agencies, consultants, and project applicants with analysis guidance and uniform procedures for addressing air quality impacts in environmental documents. Local jurisdictions are not required to utilize the methodology outlined therein. This document describes the criteria SJVAPCD uses to review and comment on the adequacy of environmental documents. It recommends thresholds for determining whether projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and outlines measures to avoid or reduce air quality impacts.

All SIPs for the SJV contain statewide technology controls mandated by CARB. A summary of the CARB-mandated control measures applicable to the 2026 RTP/SCS can be found in the applicable SIPs as described in the Draft Conformity Analysis for the 2027 Federal Transportation Improvement Program and 2026 Regional Transportation Plan (Conformity Analysis), which is available at the MCAG RTP site below.

Regional Transportation Plan | Merced County Association of Governments, CA

FIGURE 3-5

Air Quality Monitoring Sites



The SJV SIPs identified above provide a pathway to achieve both State and federal air quality standards. The regulations and incentives contained in these documents must be legally enforceable and permanent. For this EIR, only on-road mobile sources are considered, as the 2026 RTP/SCS does not impact the implementation of any SJVAPCD regulations or incentives for other emission source categories.

During the development of each SIP, CARB, in consultation with SJVAPCD and SJV MPOs, sets transportation conformity budgets for measuring progress toward achieving attainment of the national air quality standard. A "budget" is, in effect, an emissions "threshold" or "not to exceed value" for specific years in which progress toward attainment of the standard must be measured. These specific years, known as “budget years," are established to ensure that the 2026 RTP/SCS and 2027 FTIP conform to the air quality goals of the region, as well as demonstrate continued progress toward attainment of the NAAQS. The term "base year" also reflects a "threshold" or "not to exceed" value against which future emissions from the 2026 RTP/SCS are measured.

Given that each NAAQS has different attainment milestones, each SJVAPCD plan contains different “conformity budget years" in which progress must be made toward achievement of the federal standards. These years are listed below for each applicable standard. The emissions budgets in Tables 3-4 through 3-8 below reflect "thresholds" or "not to exceed" values for the applicable "budget years" for the identified pollutants. Note that the urbanized/metropolitan areas of Merced County have attained the CO standard and maintained attainment for 20 years. In accordance with Section 93.102(b)(4), conformity requirements for the CO standard stop applying 20 years after EPA approves an attainment redesignation request or as of June 1, 2018. Therefore, the conformity analysis for the 2027 FTIP and 2026 RTP no longer includes a CO conformity demonstration.

TABLE 3-4
On-Road Motor Vehicle 2008 Ozone Emissions Budgets
(Summer tons/day)

County	2026		2029		2031	
	ROG	NOx	ROG	NOx	ROG	NOx
Merced	1.5	4.6	1.3	4.3	1.2	4.3

Source: CARB 2026 Updates to Motor Vehicle Emissions Budgets for the San Joaquin Valley 75 parts per billion Ozone State Implementation Plan

TABLE 3-5

On-Road Motor Vehicle PM-10 Emissions Budgets

(Tons per average annual day)

County	2020	
	PM10	NOx
Merced	3.8	8.9

Source: Federal Register / Vol. 81, No. 156 / Friday, August 12, 2016 / Rules and Regulations

TABLE 3-6

On-Road Motor Vehicle 1997 and 2012 PM-2.5 Emissions Budgets

(Tons per average annual day)

County	2020		2023	
	PM2.5	NOx	PM2.5	NOx
Merced	0.3	8.9	0.3	5.3

Source: 2018 PM2.5 Plan

TABLE 3-7

On-Road Motor Vehicle 2006 24-Hour PM-2.5 Emissions Budgets

(Tons per average winter day)

County	2024	
	PM2.5	NOx
Merced	0.3	5.3

Source: 2018 PM2.5 Plan

TABLE 3-8

On-Road Motor Vehicle 2012 PM-2.5 Emissions Budgets

(Tons per average annual day)

County	2022	
	PM2.5	NOx
Merced	0.3	7.6

Source: 2018 PM2.5 Plan

Regional Regulations

The SJVAPCD has adopted numerous rules and regulations to implement its air quality plans. The following are significant rules that apply to the Merced County area.

- ✓ **Regulation VIII – Fugitive PM_{10} Prohibitions -** Regulation VIII is comprised of District Rules 8011 through 8081, which are designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track out, landfill operations, etc. Regulation VIII control measures are provided below:

  - All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized to reduce dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover, or vegetative ground cover.
  - All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized to reduce dust emissions using water or a chemical stabilizer/suppressant.
  - All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled to prevent fugitive dust emissions by applying 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.
  - All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.
  - Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized from fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
  - Within urban areas, track out shall be immediately removed when it extends beyond 50 feet from the site and at the end of each workday.

- ✓ **Rule 8021 – Construction, Demolition, Excavation, and Other Earthmoving Activities -** District Rule 8021 requires owners or operators of construction projects to submit a Dust Control Plan to the District if at any time the project involves non-residential developments of five or more acres of disturbed surface area or moving, depositing, or relocating of more than 2,500 cubic yards per day of bulk materials on at least three days of the project. The proposed project will meet these criteria and will be required to submit a Dust Control Plan to the District in order to comply with this rule.

- ✓ **Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations -** If asphalt paving will be used, then paving operations of the proposed project will be subject to Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow-cure asphalt, and emulsified asphalt for paving and maintenance operations.

- ✓ **Rule 9120 – Transportation Conformity –** The Transportation Conformity Rule provides policy, criteria, and procedures for demonstrating and assuring conformity of transportation plans, programs, and projects. This rule applies to projects that are developed, funded, or approved by the DOT and MPO's, or other recipients of funds under title 23 U.S.C or the Federal Transit Act (49 U.S.C. 1601 et seq.).

- ✓ **Rule 9410 – Employer-Based Trip Reduction – The Employer-Based** Trip Reduction Rule requires larger employers to establish an Employer Trip Reduction Implementation Plan (eTRIP) to encourage employees to reduce single-occupancy vehicle trips, thus reducing pollutant emissions associated with work commutes. This rule was adopted by the District Governing Board on December 17, 2009.

- ✓ **Rule 9510 – Indirect Source Review (ISR) -** The purpose of this rule is to fulfill the District's emission reduction commitments in the PM_{10} and Ozone Attainment Plans, achieve emission reductions from construction activities, and to provide a mechanism for reducing emissions from the construction of and use of development projects through off-site measures. The proposed Project must comply with this regulation.

Environmental Setting

This section describes existing air quality in the SJVAB and Merced County, including air pollutant standards, meteorological and topographic conditions that affect air quality, and current air quality conditions. Air quality is assessed against ambient air quality standards for criteria pollutants such as ozone, carbon monoxide, and particulate matter. Air quality can be directly affected by the type and density of land use change and population growth in urban and rural areas.

Geographic Location

The SJVAB comprises eight counties: Merced, Kern, Kings, Tulare, Fresno, Madera, Stanislaus, and San Joaquin. Encompassing 24,840 square miles, the San Joaquin Valley is the second-largest air basin in California. Cumulatively, counties within the Air Basin represent approximately 16 percent of the State's geographic area. The Air Basin is bordered by the Sierra Nevada Mountains on the east (8,000 to 14,492 feet in elevation), the Coastal Range on the west (4,500 feet in elevation), and the Tehachapi Mountains on the south (9,000 feet in elevation). The San Joaquin Valley opens to the north, extending into the Sacramento Valley Air Basin.

Topographic Conditions

Merced County is located within the SJVAB as determined by CARB. Air basins are geographic areas sharing a common "airshed." A description of the Air Basin in the County, as designated by CARB, is provided below. Air pollution is directly related to the region's topographic features, which impact air movement within the Basin.

Wind patterns within the SJVAB result from marine air that generally flows into the Basin from the San Joaquin River Delta. The Coastal Range hinders wind access to the Valley from the west, the Tehachapis prevent southerly airflow, and the high Sierra Nevada Mountain Range provides a significant barrier to the east. These topographic features result in weak airflow, vertically restricted by high barometric pressure over the Valley. As a result, the SJVAB is highly susceptible to the accumulation of pollutants over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500-3,000 feet).

Climatic Conditions

Merced County is located in one of the most polluted air basins in the country, the SJVAB. The surrounding topography includes foothills and mountains to the east and west. These mountain ranges direct air circulation and dispersion patterns. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. The climate in Merced County is classified as Mediterranean, with moist cool winters and dry warm summers.

Ozone, classified as a “regional” pollutant, often afflicts areas downwind of the original source of precursor emissions. Ozone can be easily transported by winds from a source area. Peak ozone levels tend to be higher in the southern portion of the Valley, as the prevailing summer winds sweep precursors downwind of northern source areas before concentrations peak. The separate designations reflect the fact that ozone precursor transport depends on daily meteorological conditions.

Other primary pollutants, such as CO, may reach high concentrations when wind speed is low. During the winter, Merced County experiences cold temperatures and calm conditions that increase the likelihood of a climate conducive to high CO concentrations. CO is not a criteria pollutant for the Merced Region.

Precipitation and fog tend to reduce pollutant concentrations. Ozone needs sunlight to form, and clouds and fog block the required radiation. CO is slightly water-soluble, so precipitation and fog tend to “reduce” CO concentrations in the atmosphere. PM_{10} is somewhat “washed” from the atmosphere with precipitation. Precipitation in the San Joaquin Valley is strongly influenced by the position of the semi-permanent subtropical high-pressure belt located off the Pacific coast. In the winter, this high-pressure system moves southward, allowing Pacific storms to move through the San Joaquin Valley. These storms

bring in moist, maritime air that produces considerable precipitation on the western, upslope side of the Coast Ranges. Significant precipitation also occurs on the western side of the Sierra Nevada. On the Valley floor, however, there is some downslope flow from the Coast Ranges, and the resultant evaporation of moisture from associated warming results in a minimum of precipitation. Nevertheless, the majority of the precipitation falling in the San Joaquin Valley is produced by those storms during the winter. Precipitation during the summer months is rare and consists of convective rain showers. It is usually associated with an influx of moisture into the San Joaquin Valley through the San Francisco area during an anomalous flow pattern in the lower layers of the atmosphere. Although the hourly precipitation rates from these storms may be high, their rarity keeps monthly totals low.

Precipitation on the San Joaquin Valley floor and in the Sierra Nevada decreases from north to south. Stockton in the north receives about 20 inches of precipitation per year, Fresno in the center receives about 10 inches per year, and Bakersfield at the southern end of the valley receives less than 6 inches per year. This is primarily because the Pacific storm track often passes through the northern part of the State, while the southern part remains protected by the Pacific High. Precipitation in the SJVAB is confined primarily to the winter months, with some also occurring in late summer and fall. Average annual rainfall for the entire San Joaquin Valley is approximately 5 to 16 inches. Snowstorms, hailstorms, and ice storms occur infrequently in the San Joaquin Valley, and severe occurrences of any of these are very rare.

The winds and unstable air conditions during storm passages result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high pressure and light winds allow cold, moist air to pool on the San Joaquin Valley floor. This creates strong low-level temperature inversions and very stable air conditions. This situation leads to the San Joaquin Valley's famous Tule Fog. The formation of natural fog is caused by local cooling of the atmosphere until it is saturated (dew point temperature). This type of fog, known as radiation fog, is more likely to occur inland. Cooling may also be accomplished by heat radiation losses or by horizontal movement of a mass of air over a colder surface. This second type of fog, known as advection fog, generally occurs along the coast.

Conditions favorable to fog formation are also conditions favorable to high concentrations of CO and PM_{10}. Ozone levels are low during these periods because sunlight is insufficient to drive the photochemical reaction. Maximum CO concentrations tend to occur on clear, cold nights when a strong surface inversion is present, and many fireplaces are in use. A secondary peak in CO concentrations occurs during morning commute hours, when many motorists are on the road, and the surface inversion has not yet broken.

The water droplets in fog, however, can act as sinks for CO and NOX, thereby lowering pollutant concentrations. At the same time, fog could help in the formation of secondary particulates such as ammonium sulfate. These secondary particulates are believed to be a significant contributor to winter season violations of the PM_{10} and $PM_{2.5}$ standards.

Other Air Quality Determinants

In addition to climatic conditions (wind, lack of rain, etc.), air pollution can be caused by human/socioeconomic conditions. Air pollution in the SJVAB can be directly attributed to human activities that generate air pollutant emissions. Human causes of air pollution in the Valley include population growth, urbanization (gas-fired appliances, residential wood heaters, etc.), mobile sources (e.g., cars, trucks, airplanes, trains), oil production, and agriculture. These are called anthropogenic, or human-caused, sources of emissions. The most significant factors accelerating the decline in air quality in the SJVAB are the Valley's rapid population growth and the associated increases in traffic, urbanization, and industrial activity.

On-road vehicles, such as cars and heavy-duty trucks, account for the majority of CO emissions in the San Joaquin Valley region. Stricter standards and the phase-out of older internal combustion engines will continue to reduce CO emissions from on-road vehicles. Stationary and Area-wide sources (i.e., industrial combustion, residential wood burning, off-road agricultural equipment) also contribute to CO emissions in the region. Motor vehicles account for significant portions of regional gaseous and particulate emissions. Local large employers, such as industrial plants, can also generate substantial regional gaseous and particulate emissions. In addition, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (e.g., dust, ash, smoke).

Ozone is the result of a photochemical reaction between NO_x and Reactive Organic Gases (ROG). Mobile sources contribute 81 percent of all NO_x emitted from anthropogenic sources based on data provided in Appendix B of the SJVAPCD's 2022 *Ozone Plan* and 2024 emission projections from CARB. In addition, mobile sources account for 21 percent (2024 emission projections) of all ROG emitted within the San Joaquin Valley.

The principal factors that affect air quality in and around Merced County are:

- ✓ The sink effect, climatic subsidence, temperature inversions, and low wind speeds.
- ✓ Automobile and truck travel.
- ✓ Increases in mobile and stationary pollutants generated by local urban growth.

Automobiles, trucks, buses, and other vehicles that use hydrocarbon fuels emit exhaust products into the air. Each vehicle by itself does not release large quantities; however, when considered as a group, the cumulative effect is significant.

Other sources may not fit into any of the major categories, or they may fit into several. These could include agricultural uses, dirt roads, animal shelters, animal feedlots, chemical plants, and industrial waste disposal, which may be sources of dust, odors, or other pollutants. Merced County, this category includes several agriculturally related activities, such as plowing, harvesting, dusting with herbicides and pesticides,

and other related activities. Finally, the effects of industrial contaminants depend on the size and type of industry, pollution controls, local topography, and meteorological conditions. Major sources of industrial emissions in Merced County consist of agricultural production and processing operations, wine production, and marketing operations.

In 2025, the primary contributors of PM2.5 emissions in the San Joaquin Valley are farming activities (23%) and road dust, both paved and unpaved (16%), according to CARB emission projections. Fugitive windblown dust from "open" fields contributed 13 percent of the $PM_{2.5}$.

Air Pollution Sources

The four major sources of air pollutant emissions in the SJVAB include industrial plants, motor vehicles, construction activities, and agricultural activities. Industrial plants account for significant portions of regional gaseous and particulate emissions. Motor vehicles, including those from large employers, generate substantial regional gaseous and particulate emissions. Finally, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (e.g., dust, ash, smoke). In addition to these primary sources of air pollution, urban areas upwind of Merced County, including those north and west of the San Joaquin Valley, can generate emissions that are transported into Merced County. All four of the major pollutant sources affect ambient air quality throughout the Air Basin.

- ✓ **Motor Vehicles**

  Automobiles, trucks, buses, and other vehicles that use hydrocarbon fuels emit exhaust products into the air. Each vehicle by itself does not release large quantities; however, when considered as a group, the cumulative effect is significant.

- ✓ **Construction Activities**

  Fugitive dust is emitted both during construction activity and as a result of wind erosion over exposed earth surfaces. Clearing and earth-moving activities do comprise major sources of construction dust emissions, but traffic and general disturbances of soil surfaces also generate significant dust emissions. Furthermore, dust generation depends on soil type and soil moisture. Exhaust pollutants are the non-useable gaseous waste products produced during the combustion process. Engine exhaust contains CO, HC, and NO_X pollutants, which are harmful to the environment.

- ✓ **Agricultural and Other Miscellaneous Activities**

  Other sources may not fit into any of the major categories, or they may fit into several. These could include agricultural uses, dirt roads, animal shelters, animal feedlots, chemical plants, and industrial waste disposal, which may be sources of dust, odors, or other pollutants. For Merced County, this

category includes several agriculture-related activities, such as plowing, harvesting, and dusting with herbicides and pesticides.

- ✓ **Industrial Plants**

  Industrial contaminants and their potential effects depend on the size and type of industry, pollution controls, local topography, and meteorological conditions. Major sources of industrial emissions in Merced County consist of agricultural production and processing operations, wine production, and marketing operations.

San Joaquin Valley Air Basin Monitoring

The SJVAB consists of eight counties, from San Joaquin County in the north to Kern County in the south. The SJVAPCD and CARB maintain numerous air quality monitoring sites throughout each County in the Air Basin to measure ozone, $PM_{2.5}$, and PM_{10}. It is important to note that the federal 1-hour ozone standard was revoked by the EPA and is no longer applicable to transportation conformity purposes. Data obtained from the monitoring sites throughout the SJVAB between 2019 and 2024 is summarized in Tables 3-9 through 3-11. Table 3-12 reflects the ambient air quality classifications for the monitoring sites in Merced County. Table 3-13 identifies Merced County's attainment status. As indicated, Merced County is nonattainment for Ozone (8-hour) and $PM_{2.5}$ and has a maintenance plan for PM_{10}. In accordance with the Federal CAA, EPA uses the design value at the time of standard promulgation to assign nonattainment areas to one of several classes that reflect the severity of the nonattainment problem; classifications range from marginal nonattainment to extreme nonattainment. The Federal CAA contains provisions for changing classifications based on factors such as clean air progress rates and requests from States to move areas to a higher classification.

TABLE 3-9

SJVAB Ambient Air Quality Monitoring Data Summary - Ozone 2019-2024

Year	Days > Standard			1 Hour Observations			8 Hour Observations					
	State		National		State	Nat'l	State		National		Coverage	
	1-Hr	8-Hr	8-Hr	Max.	D.V.[1]	D.V.[2]	Max.	D.V.[1]	Max.	D.V.[2]	Min	Max
2024	55	108	105.0	*0.121*	0.11	*0.114*	0.099	0.099	0.099	0.088	45	100
2023	26	77	73.0	*0.117*	0.14	*0.114*	0.096	0.114	0.095	0.090	47	100
2022	31	105	102.0	*0.141*	0.14	*0.122*	0.114	0.114	0.113	0.094	94	100
2021	41	104	101.0	*0.125*	0.12	*0.120*	0.100	0.104	0.100	0.093	0	100
2020	50	121	119.0	*0.142*	0.12	*0.121*	0.114	0.104	0.114	0.093	1	100
2019	24	100	96.0	*0.110*	0.11	*0.116*	0.094	0.096	0.093	0.088	81	100

Notes:

All concentrations expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005. Statistics related to the national 1-hour standard are shown in italics.

D.V.[1] = State Designation Value.

D.V.[2] = National Design Value.

Source: California Air Resources Board (ADAM) Air Pollution Summaries.

TABLE 3-10

SJVAB Ambient Air Quality Monitoring Data Summary – PM-2.5 2019-2024

Year	Est. Days > Nat'l Std.	Annual Average		Nat'l Ann. Std. D.V.[1]	State Annual D.V.[2]	Nat'l Std. 98th Percentile	Nat'l 24-Hr Std. D.V.[1]	High 24-Hour Average		Year Coverage	
		Nat'l	State					Nat'l	State	Min	Max
2024	15.3	15.6	15.6	14.7	16	53.9	48	71.9	71.9	87	100
2023	11.0	13.6	13.6	16.2	17	70.3	51	123.1	123.1	91	100
2022	40.6	16.6	16.1	18.8	20	51.8	62	62.9	62.9	72	100
2021	53.0	20.7	16.6	17.8	20	69.3	66	556.7	129.2	14	100
2020	52.0	20.3	20.3	17.6	20	99.5	72	199.7	219.4	6	100
2019	21.0	13.0	13.0	16.9	19	46.7	64	83.7	83.7	75	100

Notes:

All average concentrations expressed in micrograms per cubic meter.

State and national statistics may differ for the following reasons:

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

D.V.[1] = National Design Value.

D.V.[2] = State Designation Value.

Source: California Air Resources Board (ADAM) Air Pollution Summaries.

TABLE 3-11
SJVAB Ambient Air Quality Monitoring Data Summary – PM-10 2019-2024

Year	Est. Days > Std.		Annual Average		3 Year Average		High 24-Hr Average		Year
	Nat'l	State	Nat'l	State	Nat'l	State	Nat'l	State	Coverage
2024	9.6	161.2	*50.2*	49.6	*52*	55	188.6	194.5	0 - 0
2023	2.9	126.4	*48.4*	44.2	*50*	55	270.4	266.0	0 - 0
2022	3.8	171.2	*56.7*	54.9	*58*	55	250.8	251.6	0 - 10
2021	16.3	151.7	*54.9*	52.8	*56*	61	437.5	439.3	0 - 97
2020	38.7	157.0	*64.5*	60.5	*56*	61	517.2	359.0	0 - 100
2019	16.2	129.7	*55.6*	55.6	*52*	56	652.2	664.2	0 - 100

Notes:

All average concentrations expressed in micrograms per cubic meter.

The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in *italics*.

An exceedence of a standard is not necessarily related to a violation of the standard.

State and national statistics may differ for the following reasons:

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

State statistics for 1998 and later are based on *local* conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on *local* conditions). National statistics are based on *standard* conditions.

State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

Source: California Air Resources Board (ADAM) Air Pollution Summaries.

TABLE 3-12
Maximum Pollutant Levels at Merced's
S Coffee Avenue and Vierra Monitoring Stations

Pollutant	Time Averaging	2021 Maximums	2022 Maximums	2023 Maximums	2024 [1] Maximums	Standards National	Standards State
Ozone (O_3)	1 hour	0.099 ppm	0.096 ppm	0.096 ppm	0.098 ppm	-	0.09 ppm
Ozone (O_3)	8 hour	0.089 ppm	0.083 ppm	0.079 ppm	0.086 ppm	0.070 ppm	0.070 ppm
Nitrogen Dioxide (NO_2)	1 hour	38.2 ppb	39.1 ppb	37.1 ppb	*	100 ppb	0.18 ppm
Nitrogen Dioxide (NO_2)	Annual Average	*	7.0 ppb	6.0 ppb	*	0.053 ppm	0.030 ppm
Particulates (PM_{10})	24 hour	*	*	*	*	150 µg/m^3	50 µg/m^3
Particulates (PM_{10})	Federal Annual Arithmetic Mean	*	*	*	*	-	20 µg/m^3
Particulates ($PM_{2.5}$)	24 hour	77.3 µg/m^3	39.6 µg/m^3	35.7 µg/m^3	51.2 µg/m^3	35 µg/m^3	-
Particulates ($PM_{2.5}$)	Federal Annual Arithmetic Mean	11.2 µg/m^3	9.7 µg/m^3	8.3 µg/m^3	*	12 µg/m^3	12 µg/m^3

Source: California Air Resources Board (ADAM) Air Pollution Summaries

1: Merced-Vierra Monitoring Station

* Means there was insufficient data available to determine the value.

TABLE 3-13
Merced County Attainment Status

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone - 1 Hour	Revoked in 2005	Nonattainment/Severe
Ozone - 8 Hour	Nonattainment/Extreme [a]	No State Standard
PM10	Attainment	Nonattainment
PM2.5	Nonattainment	Nonattainment
Carbon Monoxide	Unclassified/Attainment	Unclassified
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Unclassified/Attainment	Attainment
Lead (Particulate)	Unclassified/Attainment	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified

Source: ARB Website, 2026

a. Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).

Notes:

National Designation Categories

Non-Attainment Area: Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

Unclassified/Attainment Area: Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant or meets the national primary or secondary ambient air quality standard for the pollutant.

State Designation Categories

Unclassified: A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or non-attainment.

Attainment: A pollutant is designated attainment if the State standard for that pollutant was not violated at any site in the area during a three-year period.

Non-attainment: A pollutant is designated non-attainment if there was at least one violation of a State standard for that pollutant in the area.

Non-Attainment/Transitional: A subcategory of the non-attainment designation. An area is designated non-attainment/transitional to signify that the area is close to attaining the standard for the pollutant.

Air Quality Standards

The Federal CAA, first adopted in 1963 and periodically amended since then, established the NAAQS. A set of 1977 amendments set the deadline for achieving these standards. That deadline has since passed. Other Federal CAA amendments, passed in 1990, share responsibility with the State in reducing emissions from mobile sources.

In 1988, the State of California passed the CCAA (State 1988 Statutes, Chapter 568), which established a program to achieve more stringent CAAQS. CARB implements State ambient air quality standards, as required in the CCAA, and cooperates with the federal government in implementing pertinent sections of the Federal CAA Amendments (FCAAA). Further, CARB regulates vehicular emissions throughout the State. The SJVAPCD regulates stationary sources, as well as some mobile sources. Attainment of the more stringent State PM_{10} Air Quality Standards is not currently required.

The EPA uses six "criteria pollutants" as indicators of air quality and has established a maximum concentration for each, above which adverse effects on human health may occur. These threshold concentrations are called the NAAQS. The SJVAPCD operates regional air quality monitoring networks that provide information on average pollutant concentrations for which State or federal agencies have established ambient air quality standards. Descriptions of the six criteria pollutants, as well as other pollutants of importance in Merced County, are as follows.

- ✓ **Ozone (O_3)**

  The most severe air quality problem in the Air Basin is the high level of ozone. Ozone occurs in two layers of the atmosphere. The layer surrounding the Earth's surface is the troposphere. Here, ground-level, or "bad" ozone, is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog. The troposphere extends to a level about 10 miles up, where it meets the second layer, the stratosphere. The stratospheric, or "good" ozone layer, extends upward from about 10 to 30 miles and protects life on Earth from the sun's harmful ultraviolet rays.

  "Bad" ozone is a photochemical pollutant. It needs reactive organic gases (ROG), NO_X, and sunlight. ROG and NO_X are emitted from various sources throughout Merced County. To reduce ozone concentrations, it is necessary to control emissions of ozone precursors.

  Significant ozone formation generally requires sufficient atmospheric precursors and several hours of stable conditions with strong sunlight. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

  Ozone is a regional air pollutant. It is generated over a large area and is transported and spread by wind. Ozone, the primary constituent of smog, is the most complex, difficult to control, and pervasive

of the criteria pollutants. Unlike other pollutants, ozone is not emitted directly into the air by specific sources. Ozone is formed when sunlight drives reactions between other air pollutants (called precursors), specifically NO_X and ROG. Sources of precursor gases to the photochemical reaction that form ozone number in the thousands. Common sources include consumer products, gasoline vapors, chemical solvents, and combustion products of various fuels. Originating at gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, ozone-forming chemical reactions often take place elsewhere, catalyzed by sunlight and heat. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins. Approximately 50 million people lived in counties with air quality levels above the EPA's health-based national air quality standard in 1994. The highest levels of ozone were recorded in Los Angeles, closely followed by the San Joaquin Valley. High levels also persist in other heavily populated areas, including the Texas Gulf Coast and much of the Northeast.

While the ozone in the upper atmosphere absorbs harmful ultraviolet light, ground-level ozone damages the tissues of plants, animals, and humans, as well as a wide variety of inanimate materials, such as plastics, metals, fabrics, rubber, and paints. Societal costs from ozone damage include increased medical costs, the loss of human and animal life, accelerated replacement of industrial equipment, and reduced crop yields.

Health Effects

While ozone in the upper atmosphere protects the Earth from harmful ultraviolet radiation, high concentrations of ground-level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. Ozone also damages natural ecosystems, such as forests and foothill communities; agricultural crops; and some man-made materials, such as rubber, paint, and plastic. High levels of ozone may impair the immune system, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia. Ozone accelerates aging and exacerbates pre-existing asthma and bronchitis, and, in cases with high concentrations, can lead to the development of asthma in active children. Active people, both children and adults, appear to be more at risk from ozone exposure than those with a low level of activity. Additionally, the elderly and those with respiratory disease are also considered sensitive populations for ozone.

People who work or play outdoors are at a greater risk for harmful health effects from ozone. Children and adolescents are also at greater risk because they are more likely than adults to engage in vigorous activities. Research indicates that children under 12 years of age spend nearly twice as much time outdoors each day as adults do. Teenagers spend at least twice as much time as adults in active sports and outdoor activities. In addition, children inhale more air per pound of body weight than adults and

breathe more rapidly. Children are less likely than adults to notice their own symptoms and avoid harmful exposures.

Ozone is a powerful oxidant—it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthmatic symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to ozone levels above the current ambient air quality standard leads to lung inflammation, lung tissue damage, and reduced air intake.

CARB found Merced County to be nonattainment of Federal and State ozone standards.

✓ **Suspended PM (PM_{10} and $PM_{2.5}$)**

Particulate matter pollution consists of very small liquid and solid particles that remain suspended in the air for long periods. Some particles are large or concentrated enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter is emitted from stationary and mobile sources, including diesel trucks and other motor vehicles; power plants; industrial processes; wood-burning stoves and fireplaces; wildfires; dust from roads, construction, landfills, and agriculture; and fugitive windblown dust. PM_{10} refers to particles less than or equal to 10 microns in aerodynamic diameter. $PM_{2.5}$ refers to particles less than or equal to 2.5 microns in aerodynamic diameter and is a subset of PM_{10}. Particulates of concern are those that are 10 microns or less in diameter. These are small enough to be inhaled, pass through the respiratory system, and lodge in the lungs, potentially causing adverse health effects.

In the western United States, PM10 sources are found in both urban and rural areas. Because particles originate from a variety of sources, their chemical and physical compositions vary widely. The composition of PM_{10} and $PM_{2.5}$ can also vary greatly with time, location, source, and meteorological conditions. Dust, sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main components of PM_{10} and $PM_{2.5}$. In addition to those listed previously, secondary particles can also form as precipitates from chemical and photochemical reactions of gaseous sulfur dioxide (SO2) and NOX in the atmosphere, producing sulfates (SO_4) and nitrates (NO_3). Secondary particles are of greatest concern during the winter months, when low inversion layers tend to trap the precursors of secondary particulates.

Health Effects

PM_{10} and $PM_{2.5}$ particles are small enough—about one-seventh the thickness of a human hair, or smaller—to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory system's natural defenses. Health problems begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily particulate matter concentrations. Non-health-related effects include reduced visibility and building soiling. PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. PM_{10} and $PM_{2.5}$ can aggravate respiratory disease and cause lung damage, cancer, and premature death.

Although particulate matter can cause health problems for everyone, certain people are especially vulnerable to the adverse health effects of PM_{10}. These "sensitive populations" include children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis. Of greatest concern are recent studies that link PM_{10} exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM_{10} can also damage manmade materials and is a major cause of reduced visibility in many parts of the United States.

CARB found PM_{10} standards in Merced County to be in attainment of Federal standards and nonattainment of State standards. CARB found $PM_{2.5}$ standards in Merced County to be nonattainment of Federal and State standards.

✓ **Carbon Monoxide (CO)**

Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of the incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive. CO is a byproduct of motor vehicle exhaust and accounts for more than two-thirds of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in CO concentrations and emissions, some metropolitan areas still experience high CO levels.

Health Effects

CO enters the bloodstream and binds more readily to hemoglobin than oxygen does, reducing the blood's oxygen-carrying capacity and, in turn, oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also

affected, but only at higher levels of exposure. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and, in prolonged, enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor CO concentrations are related to the carboxyhemoglobin (COHb) concentration in the blood. Health effects observed may include an early onset of cardiovascular disease; behavioral impairment; decreased exercise performance of young, healthy men; reduced birth weight; sudden infant death syndrome (SIDS); and increased daily mortality rate.

Most of the studies evaluating the adverse health effects of CO on the central nervous system examine high-level poisoning. Such poisoning results in symptoms ranging from common flu and cold symptoms (shortness of breath on mild exertion, mild headaches, and nausea) to unconsciousness and death.

As mentioned above, Merced County is unclassified/attainment for Federal standards and unclassified for State standards for CO.

✓ **Nitrogen Dioxide (NO_2)**

NO_X is a family of highly reactive gases that are primary precursors to the formation of ground-level ozone and react in the atmosphere to form acid rain. NO_X is emitted from combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A brownish gas, NO_X is a strong oxidizing agent that reacts with air to form corrosive nitric acid and toxic organic nitrates.

Health Effects

NO_X is an ozone precursor that combines Reactive Organic Gases (ROG) to form ozone. See the ozone section above for a discussion of the health effects of ozone.

Direct inhalation of NO_X can also cause a wide range of health effects. NO_X can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of nitrogen dioxide (NO_2) may lead to changes in airway responsiveness and lung function in individuals with preexisting respiratory illnesses. These exposures may also increase the risk of respiratory illnesses in children. Long-term exposure to NO_2 may increase susceptibility to respiratory infection and cause irreversible alterations in lung structure. Other health effects associated with NO_X are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may lead to eye and mucus membrane aggravation, along

with pulmonary dysfunction. NO_X can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to the production of particulate nitrates. Airborne NO_X can also impair visibility. NO_X is a major component of acid deposition in California. NO_X may affect both terrestrial and aquatic ecosystems. NO_X in the air is a potentially significant contributor to a number of environmental effects, such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water experiences an increase in nutrient levels that reduces dissolved oxygen, creating an environment that is harmful to fish and other aquatic life.

NO_2 is toxic to various animals and humans. Its toxicity stems from its ability to react with water to form nitric acid in the eye, lungs, mucous membranes, and skin. Studies of the health impacts of NO_2 include animal experiments, controlled laboratory studies in humans, and observational studies.

In animals, long-term exposure to NO_X increases susceptibility to respiratory infections, reducing resistance to diseases such as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of NO_2, can suffer lung irritation and, potentially, lung damage. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes, as well as hospital admissions for respiratory conditions.

NO_X contributes to a wide range of environmental effects, both directly and when combined with other precursors, including acid rain and ozone. Increased nitrogen inputs to terrestrial and wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems, such as those found in estuarine and coastal waters, can lead to eutrophication as discussed above. Nitrogen, alone or in acid rain, can also acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increases in soluble aluminum, which is toxic to plants. Acidification of surface waters creates low pH and toxic levels of aluminum to fish and other aquatic organisms.

CARB found NO_2 standards in Merced County to be unclassified/attainment of Federal standards and attainment of State standards.

✓ **Sulfur Dioxide (SO2)**

The major source of sulfur dioxide (SO2) is the combustion of high-sulfur fuels for electricity generation, petroleum refining, and shipping. High concentrations of SO2 can cause temporary breathing impairment in asthmatic children and adults who are active outdoors. Short-term exposures of asthmatic individuals to elevated SO2 levels during moderate activity may cause breathing difficulties accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects associated with long-term exposures to high concentrations of SO2, in conjunction with high levels of PM, include aggravation of existing cardiovascular disease and respiratory illness, and

alterations in the lungs' defenses. SO2 is also a major precursor to $PM_{2.5}$, a significant health concern and a major contributor to poor visibility. In humid atmospheres, sulfur oxides can react with vapor to produce sulfuric acid, a component of acid rain.

CARB found the SO2 standards in Merced County to be unclassified/attainment for Federal standards and attainment for State standards.

✓ **Lead (Pb)**

Lead, a naturally occurring metal, can be present in air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used until recently to increase the octane rating in automobile fuel. Since the 1980s, lead has been phased out of gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuel; however, leaded fuel has been largely phased out. Since this occurred, the ambient lead concentrations have dropped dramatically.

Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, intellectual disability, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children. Effects on children's nervous systems are one of the primary health risks associated with lead. In high concentrations, children can even suffer irreversible brain damage and death. Children 6 years old and under are most at risk because their bodies are growing quickly.

CARB found Lead standards in Merced County to be unclassified for Federal standards and in attainment for State standards.

✓ **Toxic Air Contaminants (TAC)**

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TAC) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation, and monitoring of TAC are relatively recent compared with those for criteria pollutants. Unlike criteria pollutants, TACs are regulated on the basis of risk rather than specification of safe levels of contamination. The ten TACs are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (DPM). Caltrans's guidance for transportation studies references the FHWA memorandum titled "Interim Guidance on Air Toxic Analysis in NEPA Documents," which discusses emissions quantification of six

"priority" compounds of 21 Mobile Source Air Toxics (MSAT) identified by the EPA. The six-diesel exhaust (particulate matter and organic gases), benzene, 1,3-butadiene, acetaldehyde, formaldehyde, and acrolein.

Some studies indicate that DPM poses the greatest health risk among the TAC listed above. A 10-year research program (California Air Resources Board 1998) demonstrated that diesel PM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. In addition to increasing the risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs and cause coughs, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those with respiratory problems.

DPM differs from other TACs in that it is not a single substance but a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and the presence of an emission control system. Unlike the other TACs, however, no ambient monitoring data are available for DPM because no routine measurement method currently exists. CARB has made preliminary concentration estimates based on a DPM exposure method. This method uses the CARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and results from several studies to estimate DPM concentrations. Table 3-14 depicts the CARB Handbook's recommended buffer distances associated with various types of common sources. It should be noted that the recommendation to avoid siting new sensitive land uses within 500 feet of a freeway was identified in CARB's Air Quality and Land Use Handbook published in 2005. CARB recently published a technical advisory to the Air Quality and Land Use Handbook, indicating that new research has identified promising strategies to reduce exposure to pollution along transportation corridors.

Existing air quality concerns within Merced County and the entire SJVAB are related to increases in regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, odors, and increases in greenhouse gas emissions that contribute to climate change. The primary source of ozone (smog) pollution is motor vehicles. Particulate matter is caused by dust, primarily dust generated from construction and grading activities, and smoke, which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

TABLE 3-14

Recommendations on Siting New Sensitive Land Uses Such as Residences, Schools, Daycare Centers, Playgrounds, or Medical Facilities*

SOURCE CATEGORY	ADVISORY RECOMMENDATIONS
Freeways and High-Traffic Roads [1]	- Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	- Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). - Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	- Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. - Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	- Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks.
Refineries	- Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	- Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	- Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. - Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	- Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

1: The recommendation to avoid siting new sensitive land uses within 500 feet of a freeway was identified in CARB's Air Quality and Land Use Handbook published in 2005. CARB recently published a technical advisory to the Air Quality and Land Use Handbook indicating that new research has demonstrated promising strategies to reduce pollution exposure along transportation corridors.

*Notes:
• These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.
• Recommendations are based primarily on data showing that the air pollution exposures addressed here (i.e., localized) can be reduced as much as 80% with the recommended separation.
• The relative risk for these categories varies greatly (see Table 1-2). To determine the actual risk near a particular facility, a site-specific analysis would be required. Risk from diesel PM will decrease over time as cleaner technology phases in.
• These recommendations are designed to fill a gap where information about existing facilities may not be readily available and are not designed to substitute for more specific information if it exists. The recommended distances take into account other factors in addition to available health risk data (see individual category descriptions).
• Site-specific project design improvements may help reduce air pollution exposures and should also be considered when siting new sensitive land uses.
• This table does not imply that mixed residential and commercial development in general is incompatible. Rather it focuses on known problems like dry cleaners using perchloroethylene that can be addressed with reasonable preventative actions.
• A summary of the basis for the distance recommendations can be found in the ARB Handbook: Air Quality and Land Use Handbook: A Community Health Perspective.

Source: SJVAPCD 2026

✓ **Odors**

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably across the population and is overall quite subjective. Some individuals can detect minute quantities of specific substances; others may not have the same sensitivity but may be sensitive to the odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor, and recognition occurs only with an alteration in intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, they are describing the odor's quality.

Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that detecting or recognizing the odor becomes quite difficult. At some point during dilution, the odorant concentration reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

The intensity of an odor source's operations and its proximity to sensitive receptors influence the potential significance of odor emissions. The SJVAPCD has identified common types of facilities known to produce odors in the SJVAB. The types of facilities that are known to produce odors are shown in Table 3-15, along with a reasonable distance from the source within which the degree of odors could possibly be significant. Information presented in Table 3-15 will be used as a screening-level analysis of potential odor sources for the proposed project.

TABLE 3-15

Screening Levels for Potential Odor Sources

Type of Facility	Distance
Wastewater Treatment Facilities	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile
Compositing Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g. auto body shops)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile

Source: SJVAPCD 2026

✓ **Naturally Occurring Asbestos (NOA)**

Asbestos is a term used to refer to several types of naturally occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. Asbestos is commonly found in ultramafic rock and near fault zones. The amount of asbestos typically present in these rocks ranges from less than 1% to approximately 25%, sometimes more. It is released from ultramafic rock when it is broken or crushed. This can happen when cars drive over unpaved roads or driveways surfaced with these rocks, when land is graded for building purposes, or during quarrying operations. Asbestos is also released naturally through weathering and erosion. Once released from the rock, asbestos can become airborne and remain suspended for long periods. Asbestos is hazardous and can cause lung disease and cancer, dependent upon the level of exposure. The longer a person is exposed to asbestos and the greater the intensity of the exposure, the greater the chances for a health problem.

The construction phase of the projects listed in the 2026 RTP/SCS may cause asbestos to become airborne during on-site activities. The listed projects would be required to submit a Dust Control Plan under the SJVAPCD's Rule 8021.

Existing TCMs and Air Quality Mitigation

The Federal CAA defines a TCM as including, but not limited to: programs for improved public transit; high occupancy vehicle lanes; employer-based transportation management plans; trip reduction ordinances;

traffic flow improvements; park-a-ride lots; programs to restrict vehicle use during peak periods; rideshare services; bicycle and pedestrian programs; programs to control vehicle idling; flexible work schedules; programs and ordinances to facilitate non-automobile travel; and programs to encourage the voluntary removal of pre-1980 light duty vehicles and trucks.

A description of the applicable TCMs that have been incorporated into the applicable SIPs is included in the MCAG Draft Conformity Analysis for 2026 RTP/SCS and 2027 FTIP.

Merced County and its six incorporated cities, private businesses, and government offices implement some of these programs, including traffic flow improvements, public transit, park-and-ride lots, bicycling programs, and alternative work schedules.

Dibs and CalVans are rideshare programs that operate throughout Merced County and are administered by MCAG and the San Joaquin Council of Governments (SJCOG). A complete description of the current air quality requirements is provided in the 2026 RTP and the latest Air Quality Conformity Findings, which is available at the Merced COG RTP site:

Regional Transportation Plan | Merced County Association of Governments, CA

Air Quality Management

Until the passage of the CCAA, the primary role of air districts in California was the control of stationary sources of pollution, such as industrial processes and equipment. With the passage of the Federal CAA and CCAA, air districts were encouraged to coordinate with RTPAs on TCM implementation and adopt indirect source-control programs to reduce mobile-source emissions. These mandates created the necessity for the SJVAPCD to work closely with cities and counties and with Regional Transportation Planning Agencies (RTPAs) to develop new programs.

Responsibility for managing air quality in California is becoming increasingly regionalized. Air districts have primary responsibility for controlling air pollution from all sources other than emissions directly from motor vehicles, which are the responsibility of CARB. Air districts regulate air quality through their permit authority for most types of stationary emission sources and through their planning and review activities for other sources. Further, air districts adopt and enforce rules and regulations to achieve State and federal ambient air quality standards and enforce applicable State and federal law. The CCAA requires each nonattainment district to reduce pertinent air contaminants by at least five percent per year until State Air Quality Standards are met.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Methodology

This section analyzes the air quality impacts associated with the implementation of MCAG's 2026 RTP/SCS. This analysis evaluates each significance criterion individually, assessing how the implementation of MCAG's 2026 RTP/SCS, including changes to the land use pattern and transportation network, may impact air quality in the Merced County region. The analysis for each significance criterion includes a discussion of program-level impacts for the RTP/SCS planning horizon year of 2049. Appropriate mitigation measures are applied where a significant impact has been determined.

Criteria for Significance

According to CEQA, an impact is considered significant if one or more of the following conditions occur from implementation of MCAG's 2026 RTP/SCS:

- ✓ Conflict with or obstruct implementation of the applicable air quality plan.
- ✓ 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.
- ✓ Expose sensitive receptors to substantial pollutant concentrations.
- ✓ Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Impact 3.4.1 - Conflict with or obstruct implementation of the applicable air quality plan.

The following analysis summarizes the Conformity Analysis for the 2026 RTP/SCS and 2027 FTIP. The complete Air Quality Conformity Analysis is available on MCAG's website.

- ✓ **Merced County Conformity Tests**

  The conformity tests specified in the Federal transportation conformity regulations are: (1) the emissions budget test, and (2) the interim emission test. For the emissions budget test, predicted emissions for the FTIP/RTP must be less than or equal to the motor vehicle emissions budget specified in the approved air quality implementation plan or the emissions budget found to be adequate for transportation conformity purposes. If there is no approved air quality plan for a pollutant for which the region is in nonattainment, or no emission budget is found to be adequate for transportation conformity purposes, the interim emission test applies. The Air Quality Conformity summarizes the applicable air quality implementation plans and conformity tests for ozone, PM_{10}, and $PM_{2.5}$.

During the development of each SIP, CARB, in consultation with SJVAPCD and SJV MPOs, sets transportation conformity budgets for measuring progress toward achieving attainment of the national air quality standard. A "budget" is, in effect, an emissions "threshold" or "not to exceed value" for specific years in which progress toward attainment of the standard must be measured. These specific years, known as “budget years," are established to ensure that the 2026 RTP/SCS and 2027 FTIP conform to the air quality goals of the region, as well as demonstrate continued progress toward attainment of the NAAQS. The term "base year" also reflects a "threshold" or "not to exceed" value against which future emissions from the 2026 RTP/SCS are measured.

The conformity regulation (Section 93.118[b] and [d]) requires documentation of the "budget years" for which consistency with motor vehicle emission "budgets" must be determined. In addition, any interpolation performed to meet tests for "budget years" in which specific analysis is not required needs to be documented. For the selection of the analysis years, the conformity regulation requires: (1) that if the attainment year is in the time span of the transportation plan, it must be modeled; (2) the last year forecast in the transportation plan must be an analysis year; and (3) analysis years may not be more than ten years apart. In addition, the conformity regulation requires that conformity be demonstrated for each "budget year." It is important to note that although the conformity regulation requires modeling of several analysis years in addition to the “budget years," those additional analysis years must demonstrate that emissions in those years are less than the applicable motor vehicle emissions "budget." For example, the 2026 RTP/2027 FTIP conformity analysis models Ozone motor vehicle emissions for the years 2026, 2029, 2031, 2037, 2046, and 2049. Table 3-16 below shows that 2026, 2029, 2032, and 2035 are “budget years" and 2031 and 2037 are the years of attainment. As described above, Ozone emissions for the 2031, 2037, 2046, and 2049 analysis years must be less than or equal to the 2031 "budget" to demonstrate compliance with the SJVAPCD 2008 Ozone Plan.

Section 93.118(b)(2) clarifies that when a maintenance plan has been submitted, conformity must be demonstrated for the last year of the maintenance plan and any other years for which the maintenance plan establishes budgets in the time frame of the transportation plan. Section 93.118(d)(2) indicates that a regional emissions analysis may be performed for any year, the attainment year, and the last year of the plan’s forecast. Other years may be determined by interpolating between the years for which the regional emissions analysis is performed.

Section 93.118(d)(2) indicates that the regional emissions analysis may be performed for any years in the time frame of the transportation plan, provided they are not more than ten years apart and provided the analysis is performed for the attainment year (if it is in the time frame of the transportation plan) and the last year of the plan’s forecast period. Emissions in years for which consistency with motor vehicle emissions budgets must be demonstrated, as required in paragraph (b) of this section (i.e., each budget year), may be determined by interpolating between the years for which the regional emissions analysis is performed.

TABLE 3-16

San Joaquin Valley Conformity Analysis Years

Pollutant	Budget Years[1]	Attainment/ Maintenance	Intermediate Years	RTP Horizon Year
2008 Ozone	2026/2029	2031[2]	2046	2049
2015 Ozone	2026/2029/2032/2035	2037[2]	2046	2049
PM10	N/A	2020	2027/2037/2046	2049
1997 24-hour PM2.5	N/A	2020	2027/2037/2046	2049
1997 Annual PM2.5	N/A	2023	2027/2037	2049
2012 Annual PM2.5 (Moderate and Serious)	N/A	2022/2025[3]	2027/2037	2049
2006 24-hour PM2.5	2020/2023	2024	2027/2037	2049

1 Budget years that are not in the time frame of the transportation plan/conformity analysis are not included as analysis years (e.g., 2020, 2023, 2024, 2025), although they may be used to demonstrate conformity. Some of the early RFP year budgets were not acted on by EPA since they were not applicable.

2 2031 is the attainment year for the 2008 ozone standard. 2037 is the attainment year for the 2015 ozone standard.

3 2022 is the attainment year for the moderate 2012 PM2.5 standard (not in the timeframe of this analysis). 2025 is the attaiment year for the serious 2012 PM2.5 standard.

The FCAA requires all states to attain the 1997 $PM_{2.5}$ standards as expeditiously as practicable beginning in 2010, but by no later than April 5, 2010, unless EPA approves an attainment date extension. States must identify their attainment dates based on the rate of reductions from their control strategies and the severity of the $PM_{2.5}$ problem. On February 9, 2016, the EPA released its proposed Approval and Disapproval of the *California Air Plan; San Joaquin Valley Serious Area Plan and Attainment Date Extension for the 1997* $PM_{2.5}$ *NAAQS.* No final EPA action has been taken on the plan. As a result, the proposed SIP budgets are assumed unavailable, and the 2008 $PM_{2.5}$ Plan conformity budgets are the only budgets applicable at this time for the 1997 $PM_{2.5}$ standard.

On January 20, 2016, EPA finalized reclassification of the San Joaquin Valley to Serious nonattainment for the 2006 24-hour PM2.5 Standard. On August 16, 2016, the 2012 PM2.5 Plan was approved by the EPA, effective September 30, 2016, inclusive of new conformity budgets and a trading mechanism for the 2006 24-hour PM2.5 standard, with a requirement to attain the standard as expeditiously as practicable and no later than December 31, 2019. In 2019, CARB submitted a request for an attainment deadline extension as part of the 2018 PM2.5 Plan. On March 27, EPA published a proposed rule approving portions of the 2018 PM2.5 Plan, including the 2006 PM2.5 standard attainment deadline extension, conformity budgets, and trading mechanisms.

On April 15, 2015, the EPA classified the San Joaquin Valley as Moderate nonattainment for the 2012 PM2.5 Standards. On November 26, 2021, the EPA issued a final rule approving the Moderate Area 2016 PM2.5 Plan, portions of the 2018 PM2.5 SIP pertaining to moderate nonattainment of the 2012 PM2.5 standards, and the reclassification request to serious nonattainment. The San Joaquin Valley 2018 PM2.5 Plan includes serious area budgets for the 2012 PM2.5 standards, with a 2025 attainment deadline; therefore, the 2025 attainment year must be modeled.

- **Ozone Precursors**

  The regional (Merced County) emissions analysis and forecasts for ozone precursors (ROG and NO_X) are summarized in Table 3-17a. The summary of emissions forecasts is derived from the outputs of the EMFAC 2021 model, produced by MCAG staff during the preparation of the Air Quality Conformity Analysis. As indicated above, the word "budget" refers to the emissions "threshold" or "not to exceed value" for “budget years" in order to demonstrate continued progress toward attainment of the state air quality standard. The area-wide (San Joaquin Valley) emissions analysis and forecasts for ozone precursors are summarized in Table 3-17b.

- **Particulate Matter**

  The regional (Merced County) emissions analysis and forecasts for particulate matter (PM_{10} and $PM_{2.5}$) are summarized in Table 3-17a. The summary of emissions forecasts is derived from the outputs of the EMFAC 2021 model, produced by MCAG staff during the preparation of the Air Quality Conformity Analysis.

✓ **Results of the Conformity Analysis**

A regional emissions analysis was conducted for the years 2027, 2029, 2031, 2037, 2046 and 2049 for each applicable pollutant. All analyses were conducted using the latest planning assumptions and emissions model. The major conclusions of the MCAG Conformity Analysis for the 2027 FTIP and 2026 RTP are:

- For 2008 8-hour ozone, the total regional on-road vehicle-related emissions (ROG and NOx) associated with implementation of the 2027 FTIP and the 2026 RTP for all years tested are projected to be less than the approved emissions budgets specified in *2026 Updates to Motor Vehicle Emissions Budgets for the 75 parts per billion Ozone State Implementation Plan 2026 SIP Update*. The conformity tests for ozone are therefore satisfied.

TABLE 3-17a

Conformity Results for RTP Projects

2026 Conformity Results Summary - Merced

Standard	Analysis Year	Emissions Total		DID YOU PASS?	
		ROG (tons/day)	NOx (tons/day)	ROG	NOx
2008 Ozone and Option 1 2015 Ozone	2026 Budget	1.5	4.6		
	2027	1.4	3.2	YES	YES
	2029 Budget	1.3	4.3		
	2029	1.2	3.0	YES	YES
	2031 Budget	1.2	4.3		
	2031	1.1	2.8	YES	YES
	2037	0.9	2.6	YES	YES
	2046	0.7	2.7	YES	YES
	2049	0.7	2.8	YES	YES

Standard	Analysis Year	Emissions Total		DID YOU PASS?	
		PM-10 (tons/day)	NOx (tons/day)	PM-10	NOx
PM-10	2020 Budget	3.8	8.9		
	2027	3.3	3.4	YES	YES
	2020 Budget	3.8	8.9		
	2037	3.3	2.7	YES	YES
	2020 Budget	3.8	8.9		
	2046	3.3	2.7	YES	YES
	2020 Budget	3.8	8.9		
	2049	3.3	2.9	YES	YES

Standard	Analysis Year	Emissions Total		DID YOU PASS?	
		PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
1997 24-hour PM2.5 Standard	2020 Budget	0.3	8.9		
	2027	0.2	3.4	YES	YES
	2020 Budget	0.3	8.9		
	2037	0.2	2.7	YES	YES
	2020 Budget	0.3	8.9		
	2046	0.2	2.8	YES	YES
	2020 Budget	0.3	8.9		
	2049	0.2	2.9	YES	YES

TABLE 3-17a (Cont'd)

Conformity Results for RTP Projects

2026 Conformity Results Summary – Merced

Standard	Analysis Year	Emissions Total		DID YOU PASS?	
		PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
1997 Annual PM2.5 Standard	2023 Budget	0.3	5.3		
	2027	0.2	3.1	YES	YES
	2023 Budget	0.3	5.3		
	2037	0.2	2.7	YES	YES
	2023 Budget	0.3	5.3		
	2046	0.2	2.8	YES	YES
	2023 Budget	0.3	5.3		
	2049	0.2	2.9	YES	YES

Standard	Analysis Year	Emissions Total		DID YOU PASS?	
		PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
2006 PM2.5 Winter 24-Hour Standard	2024 Budget	0.3	5.3		
	2027	0.2	3.6	YES	YES
	2024 Budget	0.3	5.3		
	2037	0.2	2.8	YES	YES
	2024 Budget	0.3	5.3		
	2046	0.2	2.9	YES	YES
	2024 Budget	0.3	5.3		
	2049	0.2	3.0	YES	YES

Standard	Analysis Year	Emissions Total		DID YOU PASS?	
		PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
2012 Annual PM2.5 Standard (Moderate)	2022 Budget	0.3	7.6		
	2027	0.2	3.4	YES	YES
	2022 Budget	0.3	7.6		
	2037	0.2	2.7	YES	YES
	2022 Budget	0.3	7.6		
	2046	0.2	2.8	YES	YES
	2022 Budget	0.3	7.6		
	2049	0.2	2.9	YES	YES

TABLE 3-17b

Conformity Results for RTP Projects

2026 Conformity Results Summary – San Joaquin Valley

Standard	Analysis Year	Emissions Total		DID YOU PASS?	
		ROG (tons/day)	NOx (tons/day)	ROG	NOx
Option 2 2015 Ozone	2026 Budget	19.1	34		
	2027	16.8	31	YES	YES
	2029 Budget	16.8	30		
	2029	15.3	28	YES	YES
	2032 Budget	14.9	27		
	2032	13.5	26	YES	YES
	2035 Budget	14.0	27		
	2035	12.2	25	YES	YES
	2037 Budget	13.4	27		
	2037	11.6	25	YES	YES
	2046	9.4	26	YES	YES
	2049	9.2	26	YES	YES

- For 2015 8-hour ozone, the total regional on-road vehicle-related emissions (ROG and NOx) associated with implementation of the 2027 FTIP and the 2026 RTP for all years tested are projected to be less than the approved emissions budgets specified either in *2026 Updates to Motor Vehicle Emissions Budgets for the 75 parts per billion Ozone State Implementation Plan* (Option 1) or in the *2026 Extreme Ozone SIP Revision* released for public comment on April 17, 2026 (Option 2). The conformity tests for ozone are therefore satisfied.
- For PM-10, the total regional vehicle-related emissions (PM-10 and NOx) associated with implementation of the 2027 FTIP and the 2026 RTP for all years tested are either (1) projected to be less than the approved emissions budgets, or (2) less than the emission budgets using the approved PM-10 and NOx trading mechanism for transportation conformity purposes from the *2007 PM-10 Maintenance Plan (as revised in 2015)*. The conformity tests for PM-10 are therefore satisfied.
- For the 1997 24-hour PM2.5 standard, the total regional on-road vehicle-related emissions associated with implementation of the 2027 FTIP and the 2026 RTP for the analysis years are either (1) projected to be less than the approved emission budgets, or (2) less than the emission budgets using the approved PM2.5 and NOx trading mechanism for transportation conformity purposes from the *2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards (2018 PM2.5 Plan)* for the 1997 PM2.5 24-hour serious area requirements (2020 attainment year). The conformity tests for the 1997 24-hour PM2.5 standard are therefore satisfied.
- For the 1997 annual PM2.5 standard, the total regional on-road vehicle-related emissions associated with implementation of the 2027 FTIP and the 2026 RTP for the analysis years are

projected to be less than the approved emission budgets from the 2021 revision to the *2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards (2018 PM2.5 Plan)* for the 1997 annual PM2.5 serious area requirements (2023 attainment year). The conformity tests for the 1997 annual PM2.5 standard are therefore satisfied.

- For the 2006 24-hour PM2.5 standard, the total regional on-road vehicle-related emissions associated with implementation of the 2027 FTIP and the 2026 RTP for the analysis years are either (1) projected to be less than the approved emission budgets, or (2) less than the emission budgets using the approved PM2.5 and NOx trading mechanism for transportation conformity purposes from the *2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards (2018 PM2.5 Plan)*. The conformity tests for the 2006 PM2.5 standard are therefore satisfied.
- For the 2012 annual PM2.5 standard (moderate and serious), the total regional on-road vehicle-related emissions associated with implementation of the 2027 FTIP and the 2026 RTP for the analysis years are either (1) projected to be less than the approved emission budgets, or (2) less than the emission budgets using the approved PM2.5 and NOx trading mechanism for transportation conformity purposes from the *2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards (2018 PM2.5 Plan)* for 2012 PM2.5 moderate area requirements.
- The 2027 FTIP and the 2026 RTP will not impede but will support the timely implementation of the TCMs adopted as part of applicable air quality implementation plans.

Based on the conformity analysis, the 2027 FTIP and the 2026 RTP conform to the applicable SIP and all applicable sections of the EPA's Transportation Conformity Rule.

The EPA is required by the CAA to set NAAQS for air pollutants to protect public health. The law also requires the EPA to establish air quality control regions and designate them as "attainment" for areas that comply with the NAAQS, and "nonattainment" for areas that do not. EPA's 2008 Ozone Air Quality Standard SIP Requirements Rule established implementation requirements for the 2008 ozone NAAQS, revoked the 1997 ozone standard, and established regulatory requirements flowing from that revocation. There are 27 areas that were designated nonattainment for the 2008 ozone NAAQS that were also nonattainment for the 1997 ozone NAAQS.

On June 12, 2025, President Trump signed joint resolutions of disapproval under the Congressional Review Act (CRA) for preemption waivers that the EPA had previously issued pursuant to CAA Section 209, including for the Advanced Clean Trucks (ACT), Zero-Emission Airport Shuttle, Heavy-Duty Vehicle Engine Emission Warranty and Maintenance Provisions (Warranty Phase 1), and Heavy-Duty Omnibus (Omnibus) regulations. Each resolution provided that the corresponding waiver "shall have no force or effect." Accordingly, these regulations were preempted by the CAA, meaning that California was no longer able to enforce or attempt to enforce the regulations, and that estimated emissions reductions attributed to the regulations could not be used for the CAA purposes of transportation conformity. The estimated emission reductions attributed to these regulations were included in baseline calculations for California's EMFAC2021 model, which was the only emissions model

approved for transportation conformity and SIP emission inventory purposes. Certain San Joaquin Valley State Implementation Plans (SIPs) pending EPA review, including the 2022 Ozone SIP (2015 standard), could no longer meet federal requirements because they included estimated emission reductions attributable to the disapproved regulations. In response, CARB developed and submitted off-model adjustment factors to the EPA that removed estimated emission benefits attributed to ACT, Zero-Emission Airport Shuttle, Warranty Phase 1, and Omnibus regulations from EMFAC2021. On November 21, 2025, the EPA approved the off-model adjustment factors. As such, EMFAC2021, with the adjustment factors, was approved as the latest approved method for modeling emissions available in California, per 40 CFR 93.111.

On March 26, 2026, CARB adopted revised conformity budgets for the 2008 ozone standard (75 ppb) to ensure the SJV MPOs can meet conformity requirements and comply with new requirements resulting from CRA actions. EPA is anticipated to act on the revised budgets this summer.

The San Joaquin Valley 2022 Ozone Plan, addressing the 2015 ozone standard (70 ppb), was adopted by the Air District Board in December 2022 and submitted to the EPA for review in February 2023. EPA did not act on the plan prior to CRA actions; therefore, CARB must resubmit the revised 2022 Ozone SIP, including new conformity budgets that incorporate EMFAC2021 off-model adjustments. In April 2026, CARB released the draft *2026 Extreme Ozone SIP Revision*, including draft 2015 ozone budgets for public review. The draft conformity analysis for the 2027 FTIP and 2026 RTP assumes two potential options: Option 1 - new 2015 ozone standard budgets will not become effective in time of FTIP/RTP approval; and Option 2 – EPA will act on the revised 2015 ozone budgets by December 16, 2026, which is when the current FTIP/RTP expires.

Option 1 – 2015 Ozone Standard SIP is NOT approved by EPA prior to SJV transportation plans expiring:

If the new 2015 ozone standard SIP budgets do not become effective before this conformity analysis is approved by FHWA, the SJV MPOs will conduct demonstrations for both 2008 and 2015 ozone standards using subarea emissions budgets as established in the *2026 Updates to Motor Vehicle Emissions Budgets for the 75 parts per billion Ozone State Implementation Plan*.

In accordance with Section 93.109(c)(2) of the conformity rule and the 2015 Ozone Transportation Conformity Guidance, if a 2015 ozone nonattainment area has adequate or approved SIP budgets that address the 2008 ozone standard, it must use the budget test until new 2015 ozone standard budgets are found adequate or approved.

Option 2 – 2015 Ozone Standard SIP is approved, and conformity budgets are effective prior to SJV transportation plans expiring:
If EPA acts on the new 2015 Ozone SIP budgets before 2027 FTIP/2026 RTP approval, the SJV MPOs will demonstrate conformity to each ozone standard individually. For the 2008 ozone standard, the

ozone budgets shown in Table 3-17a will be used. For the 2015 ozone standard, the SJV MPOs will use the area-wide budgets from the *2026 Extreme Ozone SIP Revision* adopted by CARB on May 28, 2026, and as shown in Table 3-17b.

MCAG and the SJVAPCD continue to make reasonable further progress, using reasonably available control technology (RACT), best available control measures (BACM), and best available retrofit technology (BARCT). Since the SJVAPCD was designated nonattainment for the 1997 ozone standard at the time of revocation, they are subject to an array of anti-backsliding requirements. As a result, the SJVAPCD remains obligated to continue implementing the emissions controls adopted in the 2007 Ozone Plan. The SJVAPCD has adopted numerous control measures that contribute to the Valley's progress towards clean air, including:

- Rule 4103 Open Burning
- Rule 4601 Architectural Coatings
- Rule 4661 Organic Solvents
- Rule 9610 State Implementation Plan Credit for Emission Reductions Generated Through Incentive Programs

✓ **State Air Quality Standards**

The SJVAPCD is one of 35 air quality management districts that have prepared air quality management plans to accomplish a five percent (5%) annual reduction in emissions and document progress toward achieving the State ambient air quality standards.

The SJVAPCD air quality management plans document required emissions reductions from all emissions sources, mobile and stationary. For this analysis, only on-road mobile-source emissions are considered, as the 2026 RTP does not affect the implementation of any SJVAPCD regulations or incentives for other emission-source categories. As such, this analysis will not show the full five percent (5%) reductions required by each of the SJVAPCD Plans (for each applicable pollutant), but will show the on-road mobile-source share of the 5% per-year reductions resulting from each of the SJVAPCD Plans. Required reductions from all other emission sources are set forth in the applicable SJVAPCD Plan.

The 2026 RTP demonstrates compliance with the list of comprehensive regulatory and incentive-based measures contained in each plan by demonstrating that motor vehicle emissions resulting from the 2026 RTP are less than specified motor vehicle emissions "budgets" contained in the applicable SJV SIPs. To document compliance with the State air quality standards, each of these SJVAPCD plans identifies specific years in which progress toward attainment of the standard must be measured, as shown in Table 3-16. These years are described as "budget years," because each SIP identifies motor vehicle emission "budgets" that motor vehicle emissions resulting from 2026 RTP/SCS

implementation cannot exceed in order to ensure continued progress toward attainment of the state standard. For on-road mobile sources, the SJVAPCD identifies the same emissions reduction strategies for both state and federal standards. Conformity demonstration with the federal standards satisfies state air quality requirements.

Documentation of this can be found in the Draft Conformity Analysis for the 2027 FTIP and 2026 RTP, which was released for public comment concurrent with the 2026 RTP and 2026 RTP EIR.

Similar to the analysis documenting compliance with federal standards, the term "budget" after scenario year represents a not-to-exceed value. The term base year, after a scenario year in the tables below, also reflects a not-to-exceed value against which future emissions from the 2026 RTP are measured.

For this analysis, only on-road mobile sources are considered, as the 2026 RTP does not impact the implementation of any SJVAPCD regulations or incentives on other emission source categories.

- **Results of the Analysis**

  As shown in Tables 3-18 through 3-23, the total emissions in each scenario year for each pollutant are less than the emissions "budget" as established in the applicable SJVAPCD Plan. As previously noted, the emissions "budget" for each criteria pollutant is a "threshold" or "not to exceed" value for emissions. These tables demonstrate that the 2026 RTP contributes to positive progress toward the attainment of state ambient air quality standards. These tables also demonstrate that the 2026 RTP is consistent with the SJVAPCD plans, including their regulations and incentives relative to motor vehicle emissions budgets.

  Table 3-19 (PM_{10}) documents that PM_{10} emissions grow in 2049. It should be noted that PM_{10} emissions in 2049 still remain below the motor vehicle emissions thresholds (i.e., "budget year" and "base year"); therefore, the emissions comply with the SJVAPCD plan to reduce PM_{10} emissions. This demonstrates compliance with the state ambient air quality standards for PM_{10}.

TABLE 3-18

Ozone, ROG, and NO_X Emissions Test (Summer Tons per Day)

	Emissions (Tons/Day)		% Below Budget		% Reduction/Year	
	ROG	NOX	ROG	NOX	ROG	NOX
2026 Budget	**1.50**	**4.60**	**N/A**	**N/A**	**N/A**	**N/A**
2026	1.40	3.20	6.7%	30.4%	N/A	N/A
2029 Budget	**1.30**	**4.30**	**N/A**	**N/A**	**N/A**	**N/A**
2029	1.20	3.00	7.7%	30.2%	5.6%	2.2%
2031 Budget	**1.20**	**4.30**	**N/A**	**N/A**	**N/A**	**N/A**
2031	1.10	2.80	8.3%	34.9%	4.5%	3.6%
2037	0.90	2.60	25.0%	39.5%	3.7%	1.3%
2046	0.70	2.70	36.4%	3.6%	3.2%	-0.4%
2049	0.70	2.80	41.7%	34.9%	0.0%	-1.2%

Source: MCAG, 2026

TABLE 3-19

PM_{10} Emissions (Annual Tons per Day)

	Emissions (Tons/Day)		% Below Budget		% Reduction/Year	
	PM10	NOX	PM10	NOX	PM10	NOX
2020 Budget	**3.80**	**8.90**	**N/A**	**N/A**	**N/A**	**N/A**
2027	3.30	3.40	13.2%	61.8%	N/A	N/A
2020 Budget	**3.80**	**8.90**	**N/A**	**N/A**	**N/A**	**N/A**
2037	3.30	2.70	13.2%	69.7%	0.0%	2.6%
2020 Budget	**3.80**	**8.90**	**N/A**	**N/A**	**N/A**	**N/A**
2046	3.30	2.70	13.2%	69.7%	0.0%	0.0%
2020 Budget	**3.80**	**8.90**	**N/A**	**N/A**	**N/A**	**N/A**
2049	3.30	2.90	13.2%	67.4%	0.0%	-2.3%

Source: MCAG, 2026

TABLE 3-20

$PM_{2.5}$ Emissions
1997 24-Hour (Tons per Day)

	Emissions (Tons/Day)		% Below Budget		% Reduction/Year	
	PM2.5	NOX	PM2.5	NOX	PM2.5	NOX
2020 Budget	**0.30**	**8.90**	**N/A**	**N/A**	**N/A**	**N/A**
2027	0.20	3.40	33.3%	61.8%	N/A	N/A
2037	0.20	2.70	33.3%	69.7%	0.0%	2.6%
2046	0.20	2.80	33.3%	68.5%	0.0%	-0.4%
2049	0.20	2.90	33.3%	67.4%	0.0%	-1.1%

Source: MCAG, 2026

TABLE 3-21

$PM_{2.5}$ Emissions

1997 Annual Standards (Tons per Day)

	Emissions (Tons/Day)		% Below Budget		% Reduction/Year	
	PM2.5	NOX	PM2.5	NOX	PM2.5	NOX
2023 Budget	**0.30**	**5.30**	**N/A**	**N/A**	**N/A**	**N/A**
2027	0.20	3.10	33.3%	41.5%	N/A	N/A
2037	0.20	2.70	33.3%	49.1%	0.0%	1.5%
2046	0.20	2.80	33.3%	47.2%	0.0%	-0.4%
2049	0.20	2.90	33.3%	45.3%	0.0%	-1.1%

Source: MCAG, 2026

TABLE 3-22

$PM_{2.5}$ Emissions

2006 Winter 24-Hour Standards (Tons per Day)

	Emissions (Tons/Day)		% Below Budget		% Reduction/Year	
	PM2.5	NOX	PM2.5	NOX	PM2.5	NOX
2024 Budget	**0.30**	**5.30**	**N/A**	**N/A**	**N/A**	**N/A**
2027	0.20	3.60	33.3%	32.1%	N/A	N/A
2024 Budget	**0.30**	**5.30**	**N/A**	**N/A**	**N/A**	**N/A**
2037	0.20	2.80	33.3%	47.2%	0.0%	2.9%
2024 Budget	**0.30**	**5.30**	**N/A**	**N/A**	**N/A**	**N/A**
2046	0.20	2.90	33.3%	45.3%	0.0%	-0.4%
2049	0.20	3.00	33.3%	43.4%	0.0%	-1.1%

Source: MCAG, 2026

TABLE 3-23

$PM_{2.5}$ Emissions

2012 Annual Standards (Tons per Day)

	Emissions (Tons/Day)		% Below Budget		% Reduction/Year	
	PM2.5	NOX	PM2.5	NOX	PM2.5	NOX
2022 Budget	**0.30**	**7.60**	**N/A**	**N/A**	**N/A**	**N/A**
2027	0.20	3.40	33.3%	55.3%	N/A	N/A
2037	0.20	2.70	33.3%	64.5%	0.0%	2.6%
2046	0.20	2.80	33.3%	63.2%	0.0%	-0.4%
2049	0.20	2.90	33.3%	61.8%	0.0%	-1.1%

Source: MCAG, 2026

Emissions of criteria pollutants from mobile sources resulting from implementation of the 2026 RTP/SCS were quantified for the Year 2023 and the Year 2049 with the Project. The emissions shown in Table 3-24 account for all mobile sources within Merced County. Results of the analysis show that emissions of criteria pollutants in the Year 2049 under the Project scenario will be lower than under the Year 2023 scenario, despite higher VMT. Emissions for ROG and CO exhibit a substantial reduction of more than 40%. PM_{10} and $PM_{2.5}$ emissions increase compared to the Year 2023 Scenario.

The project will result in system-wide improvements in traffic flows and reduced congestion, which would reduce the potential for increased air emissions. The SJVAPCD ozone, $PM_{2.5,}$ and PM_{10} plans document the SJVAPCD's efforts to achieve the State ambient air quality standards; as such, compliance with the regulations and incentives in the SJVAPCD plans results in compliance with the State ambient air quality standards. Based on the air quality analysis, the 2026 RTP conforms to the applicable SIPs and demonstrates progress toward attainment of the state ambient air quality standards for PM_{10}, $PM_{2.5,}$ and Ozone. As a result, implementation of the 2026 RTP would result in a less than significant impact on PM_{10}, $PM_{2.5}$, and Ozone, and would not impede the above-referenced plans and regulations.

TABLE 3-24

2026 RTP Criteria Pollutant Emissions

	2023	2049 Build (Scenario C)
VMT	7,525,218	8,775,056
ROG (tons/day)	1.50	0.62
CO (tons/day)	12.62	6.42
NOX (tons/day)	4.89	4.33
PM10 (tons/day)	0.33	0.40
PM2.5 (tons/day)	0.14	0.16

Source: MCAG, EMFAC 2021.

Mitigation Measures

✓ **None required**

Significance After Mitigation

Not applicable.

Impact 3.4.2 - 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.

Merced County is nonattainment for Ozone (1 hour-State and 8 hour-Federal) and PM_{10} (State) and $PM_{2.5}$ (Federal and State). The project will result in system-wide improvements in traffic flow and reduced congestion, thereby reducing the potential for increased air emissions.

The SJVAPCD 2016 and 2013 Ozone Plan, the 2007 PM10 Maintenance Plan, and the 2012 PM2.5 Plan document the SJVAPCD's plans to achieve the State ambient air quality standards. As such, compliance with the regulations and incentives in the SJVAPCD plans results in compliance with the State ambient air quality standards. Based on the air quality analysis, the 2026 RTP conforms to the applicable SJVAPCD plans (the 2016 and 2013 Ozone Plans, the 2007 PM10 Maintenance Plan, and the 2012 PM2.5 Plan) and demonstrates progress toward attainment of the State ambient air quality standards for PM_{10}, $PM_{2.5,}$ and Ozone. As a result, implementation of the 2026 RTP would result in a less-than-significant impact on PM_{10}, $PM_{2.5}$, and Ozone.

Mitigation Measures

✓ **None required**

Significance After Mitigation

Not applicable.

Impact 3.4.3 - Expose sensitive receptors to substantial pollutant concentrations.

✓ **Mobile Source Air Toxics (MSAT) Background**

Controlling air toxic emissions became a national priority with the passage of the FCAAA of 1990, whereby Congress mandated that the EPA regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in its latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and

identified 93 compounds emitted from mobile sources. In addition, the EPA identified seven compounds with significant contributions from mobile sources as national- and regional-scale cancer risk drivers in its 1999 National Air Toxics Assessment. These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (DPM), formaldehyde, naphthalene, and polycyclic organic matter.

- **National MSAT Trends**

  The 2007 EPA rule requires controls that will dramatically decrease Mobile Source Air Toxics (MSAT) emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (VMT) increases by 145 percent, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050, as shown in Figure 3-6 on the following page.

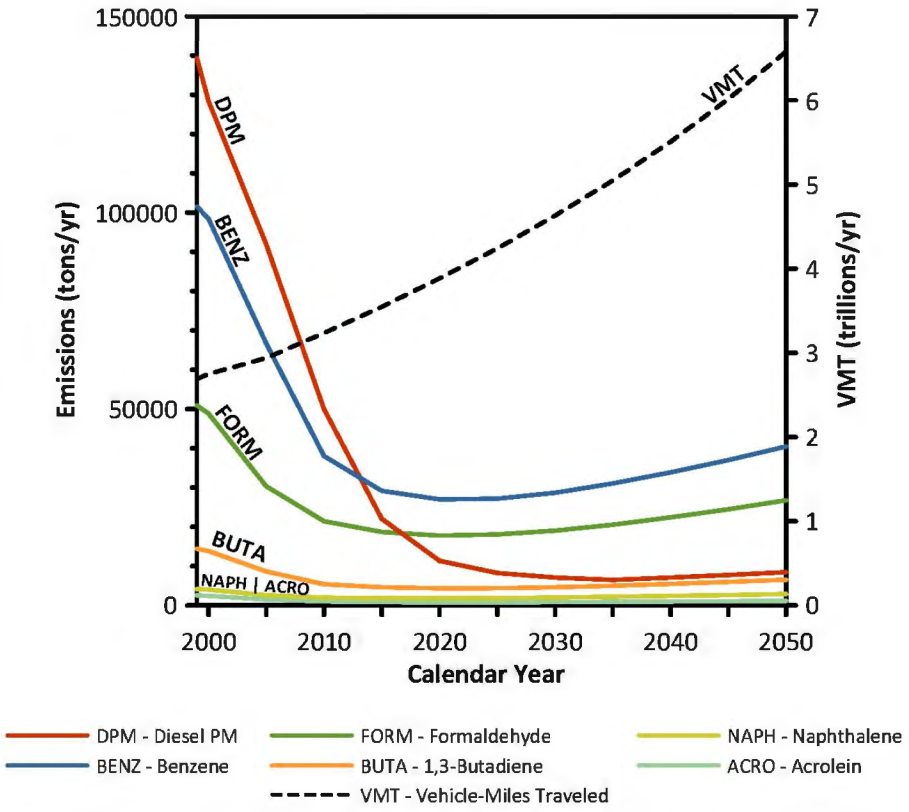
- **Local MSAT Trends (Monitoring in Merced County)**

  Estimation of Risk: Merced does not have any toxic emissions data from its monitoring sites, so the City of Fresno site was applied. CARB monitors toxics throughout California, including sites near Merced County, such as the City of Fresno. Data obtained from two monitoring sites in the City of Fresno between 1989 and 2005, or from 2025 onward, are shown in Tables 3-25 through 3-34. The estimated risks shown in CARB's annual toxics summaries in the tables below are chronic cancer risks (acute and non-cancer risks are not shown) from the inhalation pathway. These risks are expressed as expected cancer cases per million population, based on exposure to the annual mean concentration over 70 years. They are calculated using unit risk factors provided to the CARB by the California Office of Environmental Health Hazard Assessment. The data provided in the tables below show typical cancer risk levels for sensitive receptors not located near major freeways or expressways.

  Based on monitoring results in Tables 3-25 through 3-34, toxic emissions are declining except for formaldehyde. To address this issue, a mitigation measure has been added to address project-level impacts.

FIGURE 3-6

**NATIONAL MSAT EMISSION TRENDS 1999 – 2050
FOR VEHICLES OPERATING ON ROADWAYS
USING EPA's MOBILE6.2 MODEL**



Note: (1) Annual emissions of polycyclic organic matter are projected to be 561 tons/yr for 1999, decreasing to 373 tons/yr for 2050.
(2) Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors

TABLE 3-25

City of Fresno – First Street Monitoring Site

(1, 3, Butadiene Measurements)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit	Estimated Risk
2025[a]	0.02	0.02	*	0.08	0.23	0.053	20	0.04	*
2024[a]	0.02	0.02	0.043	0.09	0.16	0.037	30	0.04	47
2023[a]	0.02	0.02	0.053	0.15	0.20	0.052	30	0.04	57
2022[a]	0.02	0.02	*	0.08	0.23	0.054	19	0.04	*
2021[a]	0.02	0.02	*	0.04	0.10	0.024	17	0.04	*
2020[a]	0.02	*	*	*	0.08	0.024	7	0.04	*
2019[a]	0.02	0.02	0.040	0.11	0.13	0.037	29	0.04	43
2018[a]	0.02	0.02	0.050	0.10	0.20	0.047	30	0.04	55
2017[a]	0.02	0.02	0.055	0.10	0.22	0.052	30	0.04	59
2016[a]	0.02	0.02	0.060	0.18	0.27	0.070	31	0.04	65
2015[a]	0.02	0.02	0.057	0.13	0.26	0.061	30	0.04	62
2014[a]	0.02	0.02	0.064	0.20	0.28	0.076	30	0.04	69
2013[a]	0.02	0.02	0.092	0.20	0.37	0.093	31	0.04	100
2012[a]	0.02	0.02	0.047	0.14	0.18	0.049	29	0.04	51
2011	0.02	0.02	0.072	0.20	0.25	0.075	30	0.04	78
2010	0.02	0.02	0.059	0.16	0.21	0.060	30	0.04	64
2009	0.02	0.02	0.084	0.26	0.34	0.097	32	0.04	91
2008	0.02	0.04	0.071	0.16	0.27	0.069	31	0.04	77
2007	0.02	0.02	0.086	0.26	0.35	0.105	29	0.04	93
2006	0.02	0.05	0.082	0.21	0.30	0.085	31	0.04	88
2005	0.02	0.07	0.101	0.29	0.47	0.117	34	0.04	109
2004	0.02	0.02	0.098	0.26	0.39	0.106	30	0.04	106
2003	0.02	0.06	0.127	0.30	0.58	0.151	31	0.04	137
2002	0.02	0.07	0.194	0.47	1.00	0.225	31	0.04	209
2001	0.02	0.10	0.182	0.42	0.90	0.226	30	0.04	197
2000	0.02	0.09	0.195	0.62	1.00	0.285	30	0.04	211
1999	0.02	0.15	0.214	0.46	0.84	0.225	31	0.04	232
1998	0.02	0.15	0.265	0.78	1.00	0.295	31	0.04	287
1997	0.02	0.14	0.233	0.71	1.00	0.268	31	0.04	252
1996	0.02	0.13	0.234	0.49	1.00	0.230	31	0.04	253
1995	0.02	0.17	0.300	0.78	1.40	0.340	30	0.04	325
1994	0.02	0.22	0.356	0.79	1.80	0.380	31	0.04	384
1993	0.02	0.20	0.342	0.84	1.40	0.347	30	0.04	370
1992	0.02	0.16	0.262	0.61	0.93	0.268	30	0.04	283
1991	0.02	0.19	0.459	1.21	1.70	0.509	30	0.04	496
1990	0.02	0.14	*	1.04	1.60	0.466	24	0.04	*
1989	*	*	*	*	*	*	0	*	*

Source: California Air Resources Board, 2026

[a] Fresno's Garland Monitoring Station

* Means there was insufficient or no data available to determine the value

TABLE 3-26

City of Fresno – First Street Monitoring Site

(Benzene Measurements)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit	Estimated Risk
2025[a]	0.025	0.08	*	0.32	0.56	0.150	20	0.05	*
2024[a]	0.025	0.11	0.172	0.33	0.51	0.132	30	0.05	45
2023[a]	0.025	0.12	0.218	0.48	0.71	0.187	30	0.05	57
2022[a]	0.025	0.09	*	0.38	0.84	0.213	19	0.05	*
2021[a]	0.025	0.09	*	0.19	0.54	0.122	17	0.05	*
2020[a]	0.10	*	*	*	0.4	0.099	7	0.05	*
2019[a]	0.05	0.12	0.193	0.50	0.6	0.169	29	0.05	50
2018[a]	0.06	0.18	0.266	0.53	1.5	0.285	31	0.05	69
2017[a]	0.05	0.21	0.313	0.68	1.2	0.273	30	0.05	81
2016[a]	0.03	0.17	0.279	0.64	0.9	0.238	31	0.05	73
2015[a]	0.05	0.18	0.257	0.50	0.9	0.231	30	0.05	67
2014[a]	0.03	0.16	0.270	0.59	0.9	0.237	30	0.05	70
2013[a]	0.05	0.21	0.329	0.63	1.0	0.263	31	0.05	86
2012[a]	0.08	0.20	0.260	0.53	0.8	0.184	29	0.05	68
2011	0.06	0.21	0.314	0.76	1.2	0.299	30	0.05	82
2010	0.05	0.23	0.260	0.58	0.7	0.195	30	0.05	68
2009	0.05	0.21	0.344	0.81	1.2	0.325	32	0.05	89
2008	0.09	0.24	0.356	0.72	1.0	0.265	31	0.05	93
2007	0.06	0.24	0.374	1.02	1.2	0.367	29	0.05	97
2006	0.05	0.27	0.387	1.00	1.4	0.342	31	0.05	101
2005	0.07	0.32	0.408	1.03	1.5	0.375	34	0.05	106
2004	0.07	0.22	0.403	0.78	1.4	0.350	30	0.05	105
2003	0.10	0.31	0.546	1.20	1.8	0.498	31	0.05	142
2002	0.08	0.27	0.631	1.50	2.2	0.574	31	0.05	164
2001	0.08	0.40	0.610	1.26	3.1	0.672	30	0.05	159
2000	0.10	0.50	0.730	1.90	3.1	0.860	30	0.20	191
1999	0.10	0.50	0.800	1.70	2.9	0.730	31	0.20	207
1998	0.10	0.50	0.830	2.30	2.8	0.830	31	0.20	215
1997	0.10	0.50	1.000	2.40	5.8	1.190	31	0.20	259
1996	0.25	0.25	0.790	1.50	3.1	0.700	33	0.50	206
1995	0.25	1.00	1.240	2.40	4.5	1.110	30	0.50	322
1994	0.25	1.00	1.440	3.10	7.6	1.550	31	0.50	375
1993	0.25	1.20	1.350	3.60	4.4	1.260	30	0.50	352
1992	0.25	1.00	1.340	2.80	3.8	1.050	30	0.50	347
1991	0.25	1.60	2.420	5.40	7.3	2.040	30	0.50	629
1990	0.25	1.30	*	5.20	5.4	1.780	24	0.50	*
1989	*	*	*	*	*	*	0	*	*

Source: California Air Resources Board, 2026

[a] Fresno's Garland Monitoring Station

* Means there was insufficient or no data available to determine the value

TABLE 3-27

City of Fresno – First Street Monitoring Site
(Formaldehyde Measurements)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit	Estimated Risk
2025[a]	2.8	*	*	*	2.8	2.21	1	0.1	*
2024[a]	0.9	2.6	3.34	6.4	8.2	2.21	28	0.1	70
2023[a]	0.6	3.0	3.27	5.4	9.3	2.03	26	0.1	69
2022[a]	0.6	4.2	*	7.0	7.6	2.54	13	0.1	*
2021[a]	1.2	*	*	*	7.4	2.17	8	0.1	*
2020[a]	0.50	*	*	*	3.8	1.13	7	0.1	*
2019[a]	0.80	2.5	2.95	5.7	6.5	1.88	30	0.1	62
2018[a]	0.80	3.0	3.72	6.2	9.6	2.26	32	0.1	78
2017[a]	0.70	3.4	4.06	6.9	8.0	2.12	29	0.1	85
2016[a]	1.20	2.9	3.58	5.9	7.4	1.69	33	0.1	75
2015[a]	1.40	3.6	3.68	6.3	7.9	1.86	29	0.1	77
2014[a]	0.70	3.9	3.65	5.8	7.7	1.79	30	0.1	77
2013[a]	0.80	3.6	3.80	6.0	7.9	1.80	34	0.1	80
2012[a]	0.70	2.9	3.34	6.4	9.2	2.30	30	0.1	70
2011	0.60	2.7	3.34	5.8	11.0	2.26	31	0.1	70
2010	0.30	2.5	3.01	5.7	9.7	2.23	29	0.1	63
2009	0.05	1.8	2.56	5.2	7.5	1.89	31	0.1	54
2008	0.70	2.9	3.13	5.1	6.8	1.65	30	0.1	66
2007	0.60	2.8	2.88	4.8	7.9	1.53	30	0.1	61
2006	0.60	3.2	3.41	5.5	8.8	1.90	31	0.1	72
2005	0.70	2.5	3.00	6.0	6.9	1.88	33	0.1	63
2004	1.00	2.2	2.57	3.9	5.0	1.15	31	0.1	54
2003	0.70	3.9	3.72	6.0	8.0	1.94	33	0.1	78
2002	1.10	3.5	4.16	5.6	18.0	3.20	32	0.1	87
2001	1.20	3.3	4.32	5.4	26.0	4.43	30	0.1	91
2000	0.90	2.6	3.56	6.4	7.9	1.92	28	0.1	75
1999	0.05	3.6	*	7.2	8.8	2.26	24	0.1	*
1998	0.05	3.4	3.42	5.9	7.2	1.91	27	0.1	72
1997	0.90	3.6	*	5.6	6.4	1.47	18	0.1	*
1996	0.50	3.4	*	7.8	8.4	2.26	22	0.1	*
1995	0.40	2.3	2.41	4.1	8.3	1.79	31	0.1	51
1994	0.20	1.8	2.01	4.0	7.4	1.61	31	0.1	42
1993	0.60	1.3	1.64	3.4	4.5	1.16	26	0.1	35
1992	0.50	1.5	*	4.3	5.3	1.57	21	0.1	*
1991	0.40	1.9	2.32	4.9	7.7	1.88	27	0.1	49
1990	0.05	1.3	*	5.4	9.0	2.32	23	0.1	*
1989	*	*	*	*	*	*	0	*	*

Source: California Air Resources Board, 2026

[a] Fresno's Garland Monitoring Station

* Means there was insufficient or no data available to determine the value

TABLE 3-28

City of Fresno – First Street Monitoring Site
(Acrolein Measurements)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit
2025[a]	0.15	0.15	*	0.5	0.7	0.18	20	0.3
2024[a]	0.15	0.15	0.24	0.5	0.8	0.17	30	0.3
2023[a]	0.15	0.15	*	0.4	0.5	0.10	23	0.3
2022[a]	*	*	*	*	*	*	0	*
2021[a]	0.3	*	*	*	0.6	0.16	2	0.3
2020[a]	0.15	*	*	*	0.4	0.14	5	0.3
2019[a]	0.15	0.4	0.44	0.9	1.8	0.38	29	0.3
2018[a]	0.15	0.4	0.31	0.4	0.6	0.13	31	0.3
2017[a]	0.15	0.2	0.30	0.4	1.0	0.19	30	0.3
2016[a]	0.15	0.4	*	0.5	0.6	0.15	27	0.3
2015[a]	0.15	0.3	0.40	0.9	1.3	0.33	29	0.3
2014[a]	0.15	0.6	0.81	2.0	3.1	0.71	29	0.3
2013[a]	0.15	0.7	0.84	1.2	3.3	0.63	28	0.3
2012[a]	0.30	0.6	0.77	1.1	2.7	0.54	28	0.3
2011	0.30	0.7	1.13	3.2	4.6	1.19	30	0.3
2010	0.15	0.6	0.64	0.8	3.5	0.57	30	0.3
2009	0.15	0.7	0.74	0.9	1.9	0.35	32	0.3
2008	0.40	0.5	0.57	0.8	1.1	0.18	31	0.3
2007	0.15	0.4	0.51	0.8	2.2	0.38	29	0.3
2006	0.15	0.5	0.49	0.8	1.1	0.23	31	0.3
2005	0.15	0.4	0.41	0.6	0.9	0.21	34	0.3
2004	0.15	0.5	0.54	0.8	1.6	0.29	29	0.3
2003	0.15	0.7	*	1.1	1.4	0.33	15	0.3

Source: California Air Resources Board, 2026

[a] Fresno's Garland Monitoring Station

* Means there was insufficient or no data available to determine the value

TABLE 3-29

City of Fresno – First Street Monitoring Site

(Benzo(a)pyrene-10)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit	Estimated Risk
2005	0.130	*	*	*	0.63	0.198	5	0.05	*
2004	0.025	0.025	0.210	0.63	2.00	0.415	30	0.05	0.70
2003	0.025	0.025	0.414	1.20	2.90	0.795	31	0.05	1.00
2002	0.025	0.025	0.466	1.52	2.70	0.729	30	0.05	1.00
2001	0.025	0.110	0.501	1.00	4.30	1.100	31	0.05	2.00
2000	0.025	0.025	0.491	1.15	4.60	1.080	30	0.05	2.00
1999	0.025	0.025	0.533	2.02	4.10	1.100	30	0.05	2.00
1998	0.025	0.060	0.618	2.40	4.30	1.180	31	0.05	2.00
1997	0.025	0.060	0.562	1.59	4.60	1.040	30	0.05	2.00
1996	0.025	0.025	0.515	2.60	3.00	1.020	24	0.05	2.00
1995	0.025	0.100	0.533	1.21	3.60	0.964	24	0.05	2.00
1994	0.025	0.510	*	2.61	5.50	1.500	14	0.05	*
1993	0.025	0.100	1.240	4.17	6.20	1.930	24	0.05	4.00
1992	0.025	0.080	0.624	2.19	4.70	1.180	24	0.05	2.00
1991	0.025	0.180	0.885	3.81	4.80	1.530	24	0.05	3.00
1990	0.025	0.070	*	1.52	23.00	5.380	18	0.05	*
1989	*	*	*	*	*	*	0	*	*

Source: California Air Resources Board, 2026

* Means there was insufficient or no data available to determine the value

TABLE 3-30

City of Fresno – First Street Monitoring Site
(Benzo(b)fluoranthene-10)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit	Estimated Risk
2005	0.220	*	*	*	0.63	0.159	5	0.05	*
2004	0.025	0.025	0.258	0.81	2.30	0.469	30	0.05	0.03
2003	0.025	0.070	0.436	1.10	3.00	0.732	31	0.05	0.05
2002	0.025	0.025	0.508	1.31	3.00	0.774	30	0.05	0.06
2001	0.025	0.140	0.579	1.30	5.20	1.180	31	0.05	0.06
2000	0.025	0.080	0.551	1.27	4.50	1.150	30	0.05	0.06
1999	0.025	0.090	0.584	2.23	4.20	1.120	30	0.05	0.06
1998	0.025	0.120	0.621	2.40	3.80	1.010	31	0.05	0.07
1997	0.025	0.100	0.722	1.69	7.10	1.430	30	0.05	0.08
1996	0.025	0.090	0.489	2.06	2.80	0.877	24	0.05	0.05
1995	0.025	0.150	0.538	1.07	3.00	0.825	24	0.05	0.06
1994	0.100	0.770	*	3.10	5.50	1.510	14	0.05	*
1993	0.025	0.160	1.290	4.12	5.10	1.730	24	0.05	0.10
1992	0.025	0.140	0.718	2.41	5.20	1.260	24	0.05	0.08
1991	0.060	0.260	0.999	3.54	5.10	1.510	24	0.05	0.10
1990	0.050	0.150	*	1.77	22.00	5.120	18	0.05	*
1989	*	*	*	*	*	*	0	*	*

Source: California Air Resources Board, 2026
* Means there was insufficient or no data available to determine the value

TABLE 3-31

City of Fresno – First Street Monitoring Site

(Benzo(g, h, i)perylene-10)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit
2005	0.330	*	*	*	0.91	0.239	5	0.05
2004	0.025	0.11	0.442	1.11	3.90	0.812	30	0.05
2003	0.025	0.10	0.618	1.60	3.90	1.030	31	0.05
2002	0.025	0.11	0.629	1.92	2.80	0.815	30	0.05
2001	0.025	0.23	0.720	1.70	5.80	1.250	31	0.05
2000	0.025	0.16	0.738	1.77	5.30	1.340	30	0.05
1999	0.025	0.15	0.783	2.68	4.80	1.320	30	0.05
1998	0.025	0.26	0.718	2.20	4.10	1.110	31	0.05
1997	0.025	0.24	1.100	2.34	9.20	1.920	30	0.05
1996	0.025	0.21	0.657	2.28	3.70	1.020	24	0.05
1995	0.025	0.33	0.911	2.42	3.80	1.100	24	0.05
1994	0.270	1.40	*	4.52	6.00	1.780	14	0.05
1993	0.100	0.33	1.820	5.35	6.60	2.240	24	0.05
1992	0.025	0.23	0.904	2.75	5.20	1.360	24	0.05
1991	0.070	0.48	1.490	5.42	6.90	2.130	24	0.05
1990	0.110	*	*	*	15.00	4.960	8	0.05
1989	*	*	*	*	*	*	0	*

Source: California Air Resources Board, 2026

* Means there was insufficient or no data available to determine the value

TABLE 3-32
City of Fresno – First Street Monitoring Site
(Benzo(k)fluoranthene-10)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit	Estimated Risk
2005	0.100	*	*	*	0.26	0.065	5	0.05	*
2004	0.025	0.025	0.117	0.34	1.00	0.202	30	0.05	0.04
2003	0.025	0.025	0.209	0.50	1.50	0.354	31	0.05	0.07
2002	0.025	0.025	0.227	0.64	1.30	0.333	30	0.05	0.07
2001	0.025	0.060	0.249	0.49	2.10	0.495	31	0.05	0.08
2000	0.025	0.025	0.234	0.54	1.90	0.485	30	0.05	0.07
1999	0.025	0.025	0.250	0.95	1.80	0.481	30	0.05	0.08
1998	0.025	0.025	0.266	1.10	1.60	0.452	31	0.05	0.08
1997	0.025	0.025	0.270	0.69	2.20	0.482	30	0.05	0.09
1996	0.025	0.025	0.210	0.88	1.20	0.380	24	0.05	0.07
1995	0.025	0.060	0.251	0.52	1.50	0.402	24	0.05	0.08
1994	0.025	0.310	*	1.28	2.20	0.614	14	0.05	*
1993	0.025	0.070	0.563	1.74	2.40	0.789	24	0.05	0.20
1992	0.025	0.050	0.313	1.10	2.30	0.570	24	0.05	0.10
1991	0.025	0.100	0.395	1.42	2.30	0.658	24	0.05	0.10
1990	0.025	0.025	*	0.83	9.60	2.240	18	0.05	*
1989	*	*	*	*	*	*	0	*	*

Source: California Air Resources Board, 2026
* Means there was insufficient or no data available to determine the value

TABLE 3-33

City of Fresno – First Street Monitoring Site
(Dibenz(a, h)anthracene-10)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit	Estimated Risk
2005	0.025	*	*	*	0.11	0.035	5	0.05	*
2004	0.025	0.025	0.049	0.10	0.34	0.062	30	0.05	0.02
2003	0.025	0.025	0.075	0.23	0.41	0.104	31	0.05	0.03
2002	0.025	0.025	0.086	0.25	0.34	0.097	30	0.05	0.03
2001	0.025	0.025	0.080	0.23	0.58	0.136	31	0.05	0.03
2000	0.025	0.025	0.073	0.15	0.62	0.129	30	0.05	0.03
1999	0.025	0.025	0.078	0.25	0.73	0.145	30	0.05	0.03
1998	0.025	0.025	0.059	0.15	0.39	0.076	31	0.05	0.02
1997	0.025	0.025	0.066	0.13	0.52	0.101	30	0.05	0.03
1996	0.025	0.025	0.046	0.12	0.21	0.049	24	0.05	0.02
1995	0.025	0.025	0.045	0.07	0.21	0.051	24	0.05	0.02
1994	0.025	0.050	*	0.19	0.35	0.094	14	0.05	*
1993	0.025	0.025	0.119	0.34	0.43	0.135	24	0.05	0.05
1992	0.025	0.025	0.067	0.17	0.33	0.082	24	0.05	0.03
1991	0.025	0.025	0.133	0.36	0.72	0.179	24	0.05	0.05
1990	0.060	*	*	*	6.60	2.270	8	0.05	*
1989	*	*	*	*	*	*	0	*	*

Source: California Air Resources Board, 2026
* Means there was insufficient or no data available to determine the value

TABLE 3-34
City of Fresno – First Street Monitoring Site
(Indeno(1,2,3-cd)pyrene-10)

Year	Minimum	Median	Mean	90th Percentile	Max.	Stan Dev.	Number of Observations	Detection Limit	Estimated Risk
2005	0.250	*	*	*	0.75	0.196	5	0.05	*
2004	0.025	0.025	0.270	0.87	2.00	0.442	30	0.05	0.09
2003	0.025	0.060	0.430	1.20	2.60	0.665	31	0.05	0.10
2002	0.025	0.025	0.515	1.31	2.80	0.766	30	0.05	0.20
2001	0.025	0.210	0.625	1.50	4.90	1.180	31	0.05	0.20
2000	0.025	0.090	0.585	1.56	4.30	1.120	30	0.05	0.20
1999	0.025	0.110	0.619	2.50	4.10	1.120	30	0.05	0.20
1998	0.025	0.160	0.698	2.70	4.00	1.090	31	0.05	0.20
1997	0.025	0.110	0.697	1.78	6.20	1.270	30	0.05	0.20
1996	0.025	0.100	0.509	2.14	2.90	0.871	24	0.05	0.20
1995	0.025	0.180	0.618	1.47	3.10	0.857	24	0.05	0.20
1994	0.130	0.790	*	2.58	4.70	1.260	14	0.05	*
1993	0.060	0.170	1.240	3.77	4.90	1.640	24	0.05	0.40
1992	0.025	0.160	0.809	2.78	5.60	1.370	24	0.05	0.30
1991	0.050	0.400	1.100	3.53	4.80	1.500	24	0.05	0.40
1990	0.025	*	*	*	26.00	8.830	8	0.05	*
1989	*	*	*	*	*	*	0	*	*

Source: California Air Resources Board, 2026
* Means there was insufficient or no data available to determine the value

✓ **Diesel Particulate Matter (DPM) Emissions**

Vehicle DPM emissions were estimated using emission factors for particulate matter less than 10µm in diameter (PM_{10}) generated with the 2021 version of the Emission Factor model (EMFAC) developed by CARB. EMFAC 2021 is a mathematical model developed to calculate emission rates from motor vehicles operating on highways, freeways, and local roads in California, and is commonly used by CARB to project future changes in emissions from on-road mobile sources. The most recent EPA-approved version of this model, EMFAC 2021, incorporates regional motor vehicle data and estimates of the distribution of vehicle miles traveled (VMT) by speed and number of starts per day.

Several distinct emission processes are included in EMFAC 2021. Emission factors calculated using EMFAC 2021 are expressed in grams per vehicle-mile traveled (g/VMT) or grams per idle hour (g/idle-hr.), depending on the emission process. The emission processes and corresponding emission factor units for diesel particulate exhaust in this Project are presented below.

For this Project, annual average PM_{10} emission factors were generated by running EMFAC 2021 in EMFAC Mode for vehicles in Merced County. The EMFAC Model generates emission factors in grams of pollutant per vehicle activity and can calculate a matrix of emission factors at specific values of temperature, relative humidity, and vehicle speed. The model was run for speeds traveled along SR 99 and SR 152 within the City of Merced and City of Los Banos, respectively. The vehicle travel speeds for each segment were estimated to be 55 miles per hour.

PM_{10} emissions were calculated at ADT levels of 50,000, 100,000, and 150,000 for all three segments discussed above. The highest truck percentage for each route was applied to the Average Daily Traffic (ADT) volumes, providing a conservative estimate of PM10 emissions at any point along the route. The truck percentages were determined from Caltrans's count book. The highest truck percentages for SR 99 and SR 152 are 27% and 17%, respectively.

Tables 3-35 through 3-40 show the estimated emissions from diesel-operated vehicles that travel along SR 99 and SR 152, which are the highest-volume roadways within the County. For purposes of this analysis, a half-mile segment of each freeway was evaluated for health risk impacts to sensitive receptors located 500 feet from the freeway segment. CARB recommends that new sensitive receptors should not be sited within 500 feet of a freeway.

TABLE 3-35
2046 Build (2026 RTP/SCS) Mobile Source Emissions
SR 99 – 50,000 ADT

Pollutant	Vehicle Type	EMFAC Vehicle Class	Average Daily Trips (trips/day)	Total Annual Trips (trips/yr)	Trip Distance (miles)	Emission Factors [1] (gms/mile)	Emission Factors (lbs/VMT)	Annual Emissions (lbs/mile/yr)	Maximum Daily Emission Estimate (lbs/day)	Annual Average Emission Estimate (tons/yr)
PM_{10} Exhaust	State Highway Trucks	T7	13,500	4,927,500	0.5	0.012	2.673E-05	263.4	0.180	0.0281
							Total PM_{10} Emissions	**263.4**	**0.1804**	**0.0281**

References:
(1) Emission Factors source: EMFAC2021 for Merced County Year 2049, for speed distribution of 55 mph

TABLE 3-36
2046 Build (2026 RTP/SCS) Mobile Source Emissions
SR 99 – 100,000 ADT

Pollutant	Vehicle Type	EMFAC Vehicle Class	Average Daily Trips (trips/day)	Total Annual Trips (trips/yr)	Trip Distance (miles)	Emission Factors [1] (gms/mile)	Emission Factors (lbs/VMT)	Annual Emissions (lbs/mile/yr)	Maximum Daily Emission Estimate (lbs/day)	Annual Average Emission Estimate (tons/yr)
PM_{10} Exhaust	State Highway Trucks	T7	27,000	9,855,000	0.5	0.012	2.673E-05	526.8	0.361	0.0563
							Total PM_{10} Emissions	**526.8**	**0.3608**	**0.0563**

References:
(1) Emission Factors source: EMFAC2021 for Merced County Year 2049, for speed distribution of 55 mph

TABLE 3-37

2046 Build (2026 RTP/SCS) Mobile Source Emissions

SR 99 – 150,000 ADT

Pollutant	Vehicle Type	EMFAC Vehicle Class	Average Daily Trips (trips/day)	Total Annual Trips (trips/yr)	Trip Distance (miles)	Emission Factors [1] (gms/mile)	Emission Factors (lbs/VMT)	Annual Emissions (lbs/mile/yr)	Maximum Daily Emission Estimate (lbs/day)	Annual Average Emission Estimate (tons/yr)
PM_{10} Exhaust	State Highway Trucks	T7	40,500	14,782,500	0.5	0.012	2.673E-05	790.2	0.541	0.0844
							Total PM_{10} Emissions	**790.2**	**0.5412**	**0.0844**

References:
(1) Emission Factors source: EMFAC2021 for Merced County Year 2049, for speed distribution of 55 mph

TABLE 3-38

2046 Build (2026 RTP/SCS) Mobile Source Emissions

SR 152 – 50,000 ADT

Pollutant	Vehicle Type	EMFAC Vehicle Class	Average Daily Trips (trips/day)	Total Annual Trips (trips/yr)	Trip Distance (miles)	Emission Factors [1] (gms/mile)	Emission Factors (lbs/VMT)	Annual Emissions (lbs/mile/yr)	Maximum Daily Emission Estimate (lbs/day)	Annual Average Emission Estimate (tons/yr)
PM_{10} Exhaust	State Highway Trucks	T7	7,500	2,737,500	0.5	0.012	2.673E-05	146.3	0.100	0.0156
							Total PM_{10} Emissions	**146.3**	**0.1002**	**0.0156**

References:
(1) Emission Factors source: EMFAC2021 for Merced County Year 2049, for speed distribution of 55 mph

TABLE 3-39

2046 Build (2026 RTP/SCS) Mobile Source Emissions

SR 152 – 100,000 ADT

Pollutant	Vehicle Type	EMFAC Vehicle Class	Average Daily Trips (trips/day)	Total Annual Trips (trips/yr)	Trip Distance (miles)	Emission Factors [1] (gms/mile)	Emission Factors (lbs/VMT)	Annual Emissions (lbs/mile/yr)	Maximum Daily Emission Estimate (lbs/day)	Annual Average Emission Estimate (tons/yr)
PM_{10} Exhaust	State Highway Trucks	T7	15,000	5,475,000	0.5	0.012	2.673E-05	292.7	0.200	0.0313
							Total PM_{10} Emissions	**292.7**	**0.2005**	**0.0313**

References:
(1) Emission Factors source: EMFAC2021 for Merced County Year 2049, for speed distribution of 55 mph

TABLE 3-40

2046 Build (2026 RTP/SCS) Mobile Source Emissions

SR 152 – 150,000 ADT

Pollutant	Vehicle Type	EMFAC Vehicle Class	Average Daily Trips (trips/day)	Total Annual Trips (trips/yr)	Trip Distance (miles)	Emission Factors [1] (gms/mile)	Emission Factors (lbs/VMT)	Annual Emissions (lbs/mile/yr)	Maximum Daily Emission Estimate (lbs/day)	Annual Average Emission Estimate (tons/yr)
PM_{10} Exhaust	State Highway Trucks	T7	22,500	8,212,500	0.5	0.012	2.673E-05	439.0	0.301	0.0469
							Total PM_{10} Emissions	**439.0**	**0.3007**	**0.0469**

References:
(1) Emission Factors source: EMFAC2021 for Merced County Year 2049, for speed distribution of 55 mph

The modeling of emissions follows District draft guidance from the SJVAPCD. The AERMOD air dispersion model was used to estimate the dispersion of the TAC emissions from the project. The receptors of primary interest for this analysis are those at highest risk from diesel truck traffic along SR 99 and SR 152, since these corridors are adjacent to densely populated areas in Merced County. A 10-year research program (California Air Resources Board 1998) demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. In addition to increasing the risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs and cause coughs, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those with respiratory problems.

The meteorological data that was used in the analysis comes from the Merced station and is published by the District. The data from the Merced station, located near the Merced Regional Airport, includes 4 years of data from 2012 through 2016. The data from the Merced station provides the best available data for the area.

The assessment of mobile-source DPM health risks followed an alternative procedure that used AERMOD directly and bypassed HARP. The following procedure was used to assess risk for DPM:

- DPM emissions were modeled using AERMOD to determine annual average ground-level concentrations.
- Annual average DPM ground-level concentrations were then multiplied by the following factor:

$$\boldsymbol{SlopeFactor}\ \mathbf{X}\ \frac{\mathbf{C_{air}\ x\ DBR\ x\ A\ x\ EF\ x\ ED\ x\ 10^{-6}}}{\mathbf{AT}}$$

Where:
Slope Factor = 1.1
DBR = 393
A = 1
EF = 350 d/y
ED = 70 yr
10^{-6} = micrograms to milligrams conversion
AT = 25,550 days

- The result will be the cancer risk for each modeled source-receptor combination.

The maximum predicted lifetime excess cancer risk for the modeled sensitive receptor that produced the highest risk is shown in Table 3-41. As shown, the cancer risk values exceed the significance

threshold of 10 in one million for each segment with 50,000 ADT or more, assuming the highest truck percentage applies across the entire corridor. So, for corridors with segments exceeding 25,000 ADT and 10% truck traffic, cancer risk may be present. For SR 99, which has the highest truck volumes and ADT in the County, the cancer risk may be present for corridor segments with even less than 50,000 ADT, depending on the truck percentage along a particular corridor segment. Sensitive receptors located within 500 feet of freeway segments that have a greater than 25,000 ADT are potentially at risk, as well as those segments with high truck volumes that may have less than 25,000 ADT.

TABLE 3-41
Maximum Human Health Risk Assessment Results

Scenario	Maximum Cancer Risk (in one million)	
	SR 99	SR 152
50,000 ADT	**24.1**	**17.5**
100,000 ADT	**50.5**	**37.3**
150,000 ADT	**76.2**	**52.7**

Bold denotes exceedance of significance threshold
Source: VRPA Technologies, 2026

Diesel Particulate emissions were quantified for the Merced County portions of SR 99 to assess the impacts of diesel particulate matter (PM10 and PM2.5) on Merced County residents. Future projected emissions were compared with existing baseline emissions to determine whether diesel particulate emissions would increase over time due to the 2026 RTP.

The highest average daily trip (ADT) volumes from Caltrans' 2024 counts and the ADT projections for the year 2049 for the SR 99 corridor were used to determine the daily VMT for the SR 99 corridor within Merced County for the years 2023 and 2049. To develop a "worst case" emissions estimate, the highest percentage of truck traffic along SR 99, which was determined from Caltrans' 2024 counts, was then multiplied by the ADT volumes for the years 2023 and 2049. This yielded the average daily truck trips for the SR 99 corridor. The average daily truck trips for the years 2023 and 2049 were then multiplied by the total length of the corridor within Merced County (37 miles for SR 99). The resultant was the estimated daily VMT for trucks along the SR 99 corridor. This approach is considered conservative, as all other SR 99 segments have truck volumes less than or equal to that of the highest segment. This approach assumes the highest truck volumes occur across all segments of SR 99 in Merced County.

Because not all trucks are diesel and do not emit diesel particulate matter, EMFAC2021 was used to determine the percentage of trucks that are diesel. EMFAC2021 emission rates were then used to quantify diesel particulate emissions from running exhaust on the SR 99 corridor for the 2023 base year and the 2049 project. Table 3-42 shows the results of the analysis.

Results of the analysis show that PM_{10} emissions for the Project (2026 RTP/SCS - Scenario C) are anticipated to be less than the PM_{10} emissions for the 2023 Base Year, despite the increase in average daily truck trips. Although average daily truck trips are increasing, diesel exhaust emissions are expected to decrease as new technologies become available.

TABLE 3-42

Running Emissions Summary

SR 99 Diesel Emissions (tons/day)		
	2023	2049
Diesel PM10	0.0383	0.0199
Diesel PM2.5	0.0366	0.0190
VMT per day	887,788	1,485,619

Source: VRPA, 2026

Mitigation Measure

The specific impacts on air quality will be evaluated as part of the implementing agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies, for which MCAG is not one, will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage inclusion of the mitigation measures referenced below.

- ✓ **AQ 3.4.3-1** As air toxics research continues, implementing agencies should utilize the tools and techniques that are developed for assessing health outcomes as a result of lifetime MSAT exposure. The potential health risks posed by MSAT exposure should continue to be factored into project-level decision-making during environmental review. Specifically, at the project level, implementing agencies shall require or conduct air toxic risk assessments to determine mobile-source air toxic impacts.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and

direction to avoid or reduce the identified health risk impacts, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategy intended to avoid or reduce the significant impacts identified.

Impact 3.4.4 - Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people

Implementation of the RTP would not directly create or generate objectionable odors. People residing in the immediate vicinity of proposed transportation improvements and future land use developments may be subject to odors typically associated with roadway construction activities (diesel exhaust, hot asphalt, etc.), and odor-generating land uses. Any odors generated by construction activities would be minor and short-term. However, objectionable odors from future land uses, such as landfills, wastewater treatment plants, or industrial processing facilities, may occur. This potential impact is considered ***significant*** and unavoidable.

Mitigation Measure

- ✓ **AQ 3.4.4-1** Implementing agencies should require assessment of new and existing odor sources for transportation improvement projects and future land use development projects to determine whether sensitive receptors would be exposed to objectionable odors and apply recommended applicable mitigation measures as defined by the applicable local air district and best practices.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified objectionable odor impacts, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategy intended to avoid or reduce the significant impacts identified.

3.5 BIOTIC RESOURCES

Merced County contains a wealth of biotic resources due to its varied topography and climate. Numerous government agencies are tasked with identifying and protecting those resources, which are described later. Because transportation facilities may affect special-status animals, plants, and habitats, this section addresses the current status of these biological resources and assesses the potential impacts of regionwide construction of transportation facilities.

Regulatory Setting

Federal Regulations

- ✓ **Clean Water Act (CWA) -** The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States. It gives the U.S. Environmental Protection Agency the authority to implement pollution control programs, such as setting wastewater standards for industry. The CWA also requires the establishment of water quality standards for all contaminants in surface waters. The Act makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit is obtained under its provisions.

- ✓ **Federal Endangered Species Act (ESA) -**The Endangered Species Act provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The U.S. Fish and Wildlife Service (USFWS) maintains the list of endangered and threatened species.

- ✓ **National Environmental Policy Act (NEPA) -** The National Environmental Policy Act (NEPA) provides general information on the effects of federally funded projects. The Act was implemented through regulations in the Code of Federal Regulations (40 CFR 6). The code requires careful consideration of the environmental impacts of federal actions or plans, including projects that receive federal funds. The regulations address impacts on land uses and conflicts with State, regional, or local plans and policies, among others. They also require that projects subject to NEPA review seek to avoid or minimize the adverse effects of proposed actions and to restore and enhance environmental quality as much as possible.

- ✓ **Migratory Bird Treaty Act (16 USC Section 703-711) -** The Migratory Bird Treaty Act (MBTA) of 1918, implemented by the USFWS, is an international treaty that makes it unlawful to take, possess, buy, sell, purchase, or barter, any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs or products, except as allowed by implementing regulations (50 CFR 21). The MBTA requires that project-related disturbance at active nesting territories be reduced (but does not regulate impacts to the species' habitats) or eliminated during critical phases of the nesting cycle (February 1st to August 31st, annually).

- ✓ **Bald and Golden Eagle Protection Act (16 USC Section 668) -** The Bald and Golden Eagle Protection Act provides for the protection of the bald eagle (the national emblem) and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds. If compatible with the preservation of bald and golden eagles, the Secretary may permit the taking, possession, and transportation of bald and golden eagles and nests for scientific or religious purposes, or for the protection of wildlife, agricultural, or other interests. The Secretary of the Interior may authorize the taking of golden eagle nests that interfere with resource development or recovery operations. Bald eagles may not be taken for any purpose unless the Secretary issues a permit prior to the taking.

- ✓ **Executive Order 11990, Protection of Wetlands (May 24, 1977) -** This Executive Order establishes a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. On projects with federal actions or approvals, impacts on wetlands must be identified in the environmental document. Alternatives that avoid wetlands must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm to those wetlands must be included. This must be documented in a specific Wetlands Only Practicable Alternative Finding in the final environmental document for a proposed individual improvement project.

- ✓ **Emergency Wetland Resources Act of 1986 (EWRA) -** This act promotes the conservation of wetlands. It mandates that the U.S. Fish and Wildlife Service intensify cooperative efforts to manage, conserve, and protect wetlands.

- ✓ **Invasive Species – Executive Order No. 13112** – Executive Order 12112 was implemented in 1999. It prevents activities that promote the introduction and spread of invasive species. This executive order prohibits federal agencies from authorizing, funding, or carrying out actions that are likely to contribute to the introduction and spread of invasive species unless all feasible mitigation measures have been analyzed and considered.

- ✓ **Section 10 of the Rivers and Harbors Act (33 USC 401 et seq.) -** Section 10 of the Rivers and Harbors Act is administered by the ACOE. This Section requires permits for all structures, such as riprap, and activities, such as dredging, in navigable waters of the United States. Navigable waters are defined as those subject to the ebb and flow of the tide and susceptible to use in their natural condition or by reasonable improvements as means of interstate transport or foreign commerce. The ACOE grants or denies permits based on the effects on navigation. Most activities covered under this act are also covered under Section 404 of the CWA.

- ✓ **Fish and Wildlife Coordination Act (16 USC 661-666) -** The Fish and Wildlife Coordination Act (FWCA) applies to federal projects where the waters of any stream or other body of water are impounded, diverted, deepened, or otherwise modified. Project proponents are required to consult with the USFWS and the California Department of Fish and Wildlife (CDFW). These agencies prepare reports

and recommendations that document the effects of projects on wildlife and identify measures to prevent loss or damage to plant and animal resources. Provisions of the FWCA are implemented through the NEPA and Section 404 permit processes.

- ✓ **Section 401 of the Federal Clean Water Act (CWA) (1972) -** Section 401 requires that all activity that may result in discharges into the waters of the United States must be certified by the applicable Regional Water Quality Control Board (RWQCB) prior to receiving a federal permit or license. Fresno County falls within the Central Valley's regional control board (Region 5).

- ✓ **Section 404 of the Federal CWA -** Section 404 regulates the discharge of dredged and fill materials into water of the United States. The U.S. Army Corps of Engineers (USACOE) issues permits that authorize activities in the waters of the United States in compliance with standard conditions. The USACOE is responsible for administering Section 404.

- ✓ **Executive Order 11990, Protection of Wetlands (1977)** - This Executive Order establishes a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. On projects with federal actions or approvals, impacts on wetlands must be identified in the environmental document. Alternatives that avoid wetlands must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm to those wetlands must be included. This must be documented in a specific Wetlands Only Practicable Alternative Finding in the final environmental document for a proposed individual improvement project.

Federal Agencies

- ✓ **U.S. Bureau of Land Management (BLM) -** The U.S. Bureau of Land Management (BLM) manages large rural land areas, including land that is environmentally sensitive. The BLM governs the uses allowed on the land it manages, striving to balance environmental protection and conservation goals with other uses, such as recreation and grazing.

- ✓ **U.S. Forest Service (USFS) -** The U.S. Forest Service (USFS) is responsible for the management and conservation of large areas of National Forest land. National forests are primarily managed by the USFS for outdoor recreation (such as camping, hiking, fishing, hunting, skiing, and nature interpretation) and for resource preservation.

- ✓ **U.S. Fish and Wildlife Service (USFWS) -** The U.S. Fish and Wildlife Service (USFWS) administers the Federal Endangered Species Act (FESA), which designates critical habitat for endangered species. This enables USFWS to carry out its mission to conserve, protect, and enhance the nation's fish and wildlife and their habitats for the continuing benefit of people. Critical habitat areas cannot be disturbed without permission from the USFWS and other federal agencies, depending on land ownership. The USFWS also manages a system of land and waters for the conservation of wildlife and associated

ecosystems. These National Wildlife Refuges are primarily managed to preserve and protect unique or important resources and ecosystems.

- ✓ **U.S. Army Corps of Engineers (ACOE) -** The U.S. Army Corps of Engineers (ACOE) is responsible for the administration of Section 404 of the Clean Water Act (CWA), which governs specified activities in waters of the United States, including wetlands. In this role, the ACOE requires that permits be obtained for projects whose plans would place structures, including dredged or filled materials, within navigable waters or wetlands, or alter such areas.

- ✓ **Council on Environmental Quality (CEQ) and U.S. Environmental Protection Agency (US EPA) -** NEPA mandates that the federal government shall consider potential adverse environmental impacts of its major actions, including impacts to biological resources. The Council on Environmental Quality oversees NEPA, and the EPA administers the NEPA process.

State Regulations

- ✓ **California Environmental Quality Act (CEQA) -** CEQA defines a significant impact on the environment as a substantial, or potentially substantial, adverse change in the physical conditions within the area affected by the project.

- ✓ **Title 14 (460 of the California Code of Regulations) –** Title 14 establishes the regulations regarding the take of furbearing mammals. Under Title 14, take is prohibited for several fur-bearing mammals, including the desert kit fox and the red fox.

- ✓ **California Porter-Cologne Water Quality Control Act (1969) –** This act grants the State Water Resources Control Board ultimate control authority over water quality policies for California. The RWQCBs oversee water quality at the local and regional levels and regulate discharges into bodies of water within the state.

- ✓ **California Wild and Scenic Rivers Act (1972) –** This act strives to preserve rivers possessing extraordinary scenic, recreational, fishery, or wildlife values. It provides protection against development that could harm the state's most outstanding free-flowing rivers.

- ✓ **California Desert Native Plant Act (1981) –** This act aims to preserve and enhance desert native plants by prohibiting unlawful harvesting of certain species on both private and public properties. The act specifies that no person shall harvest, transport, or possess certain native desert plants without authorization.

- ✓ **Natural Community Conservation Planning Act of 1991 (amended) –** This act was amended in 2003 and establishes the Natural Community Conservation Planning program with the purpose of

protecting and perpetuating the state's biological diversity. The act provides for the protection of plants, animals, and their habitats while allowing appropriate economic development.

- ✓ **State Senate Concurrent Resolution No. 17 –** Relative to Oak Woodlands – the State Senate Concurrent Resolution No. 17 requires all state agencies that have land use planning responsibilities to assess the effects of their land use decisions within any oak woodlands containing blue oak, Engelmann oak, valley oak, or coast live oak. Oak woodlands are defined as a five-acre circular area containing five or more oak trees per acre. This act requires state agencies to protect oak woodlands under their jurisdiction and to provide replacement plantings when specified oak species are removed from oak woodlands.

- ✓ **State Wildlife Action Plan (SWAP) –** California's SWAP provides comprehensive wildlife conservation strategies aimed at the preservation of the state's high level of biodiversity. The most recent California SWAP (2015) focuses on conservation, using an approach that is harmonious with the growing human population and shifting climate conditions. SWAP 2015 outlines the necessary actions to preserve California's aquatic, marine, and terrestrial resources.

- ✓ **California Fish and Wildlife Code**

  - ➢ **Section 1600 (Lake and Streambed Alteration Agreement)**
    Defines one of CDFW's responsibilities as protecting streams, water bodies, and riparian corridors through the Lake and Streambed Alteration Agreement (LSA) process under Section 1601 to 1606. These sections stipulate that it is "unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake" without notifying the Department, incorporating necessary mitigation, and obtaining an LSA. CDFW's jurisdiction extends to the tops of banks and often includes the outer edge of the riparian vegetation canopy.

  - ➢ **Section 1900-1913 (Native Plants)**
    The Native Plant Protection Act (NPPA) directs the CDFW to preserve, protect, and enhance rare and endangered plants in California. The NPPA authorizes the CDFW Commission to designate native plants as "endangered" or "rare" and to protect them from being taken.

  - ➢ **Section 2050-2116 (California Endangered Species Act—CESA)**
    CESA prohibits "take" of any species that the CDFW Commission determines to be an endangered species or a threatened species. Take is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project-caused losses of listed species populations and their essential habitats.

- **Section 3503 (Birds of Prey)**
  Prohibits the destruction of bird eggs and nests except as otherwise provided for in the Code. Section 3503.5 prohibits "take," possession, or destruction of any raptor (bird of prey species in the orders Falconiformes and Strigiformes), including their nests or eggs. Violations of this law include the destruction of active raptor nests through tree removal and the disturbance of nesting pairs by nearby human activity, which can lead to nest abandonment and reproductive failure.

✓ **Native Plant Protection Act –** California's Native Plant Protection Act (NPPA) requires all state agencies to establish criteria for determining if a species, subspecies, or variety of native plant is Endangered or Rare. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use that would adversely impact listed plants. This requirement allows CDFW to salvage listed plant species that would otherwise be destroyed.

✓ **State Park System -** The State Park System (SPS) is the most ecologically diverse system of protected lands in the state. The long-term preservation of the state's biological and physical values is a core function of the California Department of Parks and Recreation. Sustaining these values is a high priority of its acquisition (and restoration) program.

✓ **California's Important Bird Area -** California's Audubon Important Bird Area (IBA) Program was launched in 1996. With the initiation of the California IBA Report, dozens of California field ornithologists, representing a broad range of agencies and affiliations, were interviewed and questioned about sites significant to birds in the state. These interviews and resulting suggestions were incorporated into a comprehensive assessment of those sites. This document was reviewed by an IBA Advisory Board in November 2001 and released as a final draft in December 2001. The report describes over 200 areas, found in all 58 counties, which meet eight criteria for identification as an IBA.

- **Section 3551, 4700, 5050, 5515, Fully Protected Species**
  These sections served as California's initial effort to identify and provide additional support for animals deemed endangered and possibly facing extinction. Lists were created for fish, amphibians/ reptiles, birds, and mammals. This section states that species identified as fully protected may not be taken or possessed at any time without the necessary permits for scientific research or relocation.

- **Section 2800 (Natural Community Conservation Planning Program—NCCP)**
  The NCCP Program aims to protect many species through an ecosystem approach to habitat conservation.

- **Section 3513 (Migratory Birds)**
  Prohibits the taking of migratory birds as designated in the USFWS MBTA (see above under Federal Regulations)

State Agencies

- ✓ **California Department of Forestry and Fire Protection (CDF) -** The California Department of Forestry and Fire Protection (CDF) reviews and approves plans for timber harvesting on private lands. In addition, the CDF plays a role in planning development in forested areas as part of its responsibility to fight wildfires.

- ✓ **California Department of Parks and Recreation (CDPR) -** The principal mission of the California Department of Parks and Recreation (CDPR) is to provide sites for a variety of recreational and outdoor activities to California residents and tourists. Natural resource management and protection are also part of CDPR's mission. Different park designations dictate the extent to which natural resources are a management priority; natural preserves, State parks, State reserves, and State wilderness designations indicate that an area has outstanding natural features. The CDPR is a trustee agency that owns and operates all State parks and participates in land use planning affecting State park land.

- ✓ **California Department of Fish and Wildlife (CDFW) -** The California Department of Fish and Wildlife Service (CDFW) is mandated to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. In particular, CDFW is required under the California Endangered Species Act, the California Native Plant Protection Act, the California Environmental Quality Act, and the Natural Community Conservation Planning Act to conserve species through listing, habitat acquisition and protection, review of local land use planning, multi-species conservation planning, stewardship, recovery, research, and education. CDFW protects rare, threatened, and endangered species by managing habitats within legally designated ecological preserves or wildlife areas within its jurisdiction.

- ✓ **Regional Water Quality Control Board (RWQCB)** - The RWQCB is the primary agency responsible for protecting water quality in California under Section 401 of the Federal CWA and the California Porter-Cologne Water Quality Control Act. The RWQCB defines “waters of the state” as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCB’s jurisdiction includes the waters of the U.S., which are considered a subset of the state's waters.

Environmental Setting

The CDFW maintains several databases on biotics, including the California Natural Diversity Database (CNDDB) and the Wildlife Habitat Relationships (WHR) information systems. These databases will be discussed further in the section and are hereby incorporated by reference.

For transportation/environmental work in Merced County (RTPs, corridor studies, CEQA/NEPA documents, PEIRs, and biological constraints analyses), the most frequently recurring species issues are usually: vernal pool species, California tiger salamander, San Joaquin kit fox, Swainson's hawk, giant garter snake, and listed grassland plants. These repeatedly drive avoidance, mitigation, and permitting requirements.

Plants – Merced County

- ✓ Federally or State Endangered
  - Greene's Tuctoria — Federal Endangered / State Rare
  - San Joaquin Valley Orcutt Grass — Federal Threatened / State Rare
  - Succulent Owl's-Clover — Federal Threatened
  - Colusa Grass — Federal Threatened
  - Hoover's Spurge — Federal Threatened
  - Heartscale — State Endangered

- ✓ Threatened
  - Boggs Lake Hedge-Hyssop
  - San Joaquin Woolly-Threads
  - Merced Monardella

- ✓ Rare / CNPS Sensitive Plants Frequently Evaluated In Merced County
  - Round-Leaved Filaree
  - Merced Clarkia
  - Little Mousetail
  - California Jewelflower
  - San Joaquin Spearscale

Habitat

- ✓ **Habitat Areas**
  A habitat is the physical environment in which a particular species lives and grows. The CDFW defines all habitats in California in its Wildlife Habitat Relationships (WHR) information system. Based on that system, Merced County comprises three biotic regions that support approximately 10 major habitats.

Figure 3-7 identifies the biotic regions and their approximate locations in Merced County based upon the CNDDB. Species share similar habitats, including the Central Coast Range, the San Joaquin Valley Floor, and small portions of the Sierra Nevada Foothills, as identified in Table 3-43. Species occurrences are identified below in Figure 3-8.

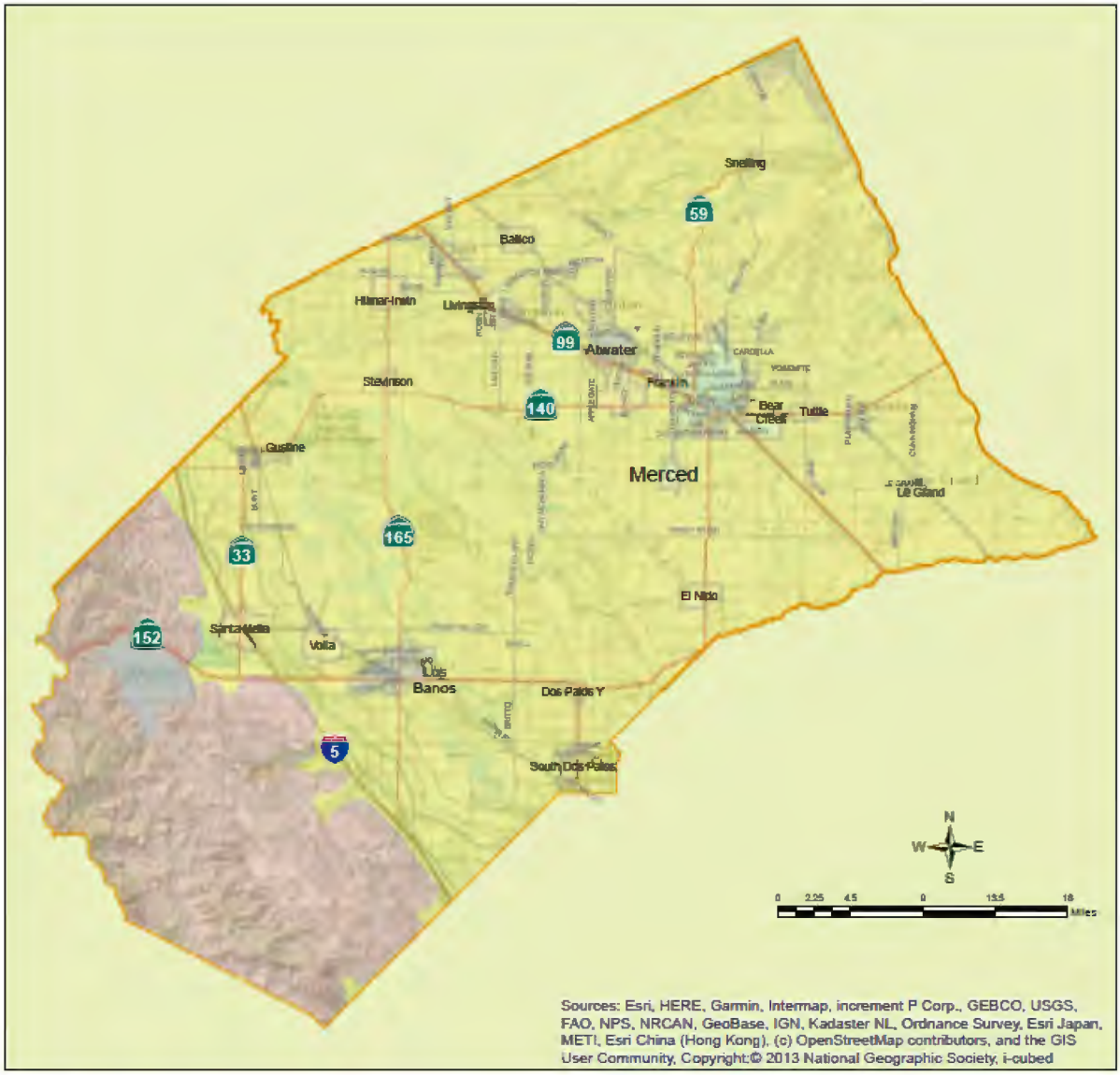
✓ **Special Habitat Areas**

The number and area of freshwater marshes, riparian habitats, grasslands, and scrub habitats have diminished in recent years due to the combined effects of water diversion and development. Several sensitive habitats, as identified by the CNDDB, are located within Merced County, including:

- Northern Claypan Vernal Pool
- Alkali Seep
- Cismontane Alkali Marsh
- Coastal and Valley Freshwater Marsh
- Great Valley Cottonwood Riparian Forest
- Northern Claypan Vernal Pool
- Northern Hardpan Vernal Pool
- Sycamore Alluvial Woodland
- Valley Sacaton Grassland
- Valley Sink Scrub

Significant Natural Areas. Significant natural areas have been identified by the CDFW under the Significant Natural Areas program. These areas include vernal pool and wetland habitats, as well as habitats for sensitive species such as the vernal pool plant and invertebrates, the California Tiger Salamander and Red-legged Frogs, and the San Joaquin kit fox.

FIGURE 3-7
Merced County Biotic Regions



Legend

DISPLAY	Merced Places	Water (Area)
Interstate	2020 CENSUS POPULATON	ECOREGION_SECTION
Freeway	<15,000	Central Valley Coast Ranges
Major Road	15,000-50,000	Great Valley
Minor Road	50,000-100,000	Sierra Nevada Foothills
Local		

FIGURE 3-8
Merced County Species Occurrences

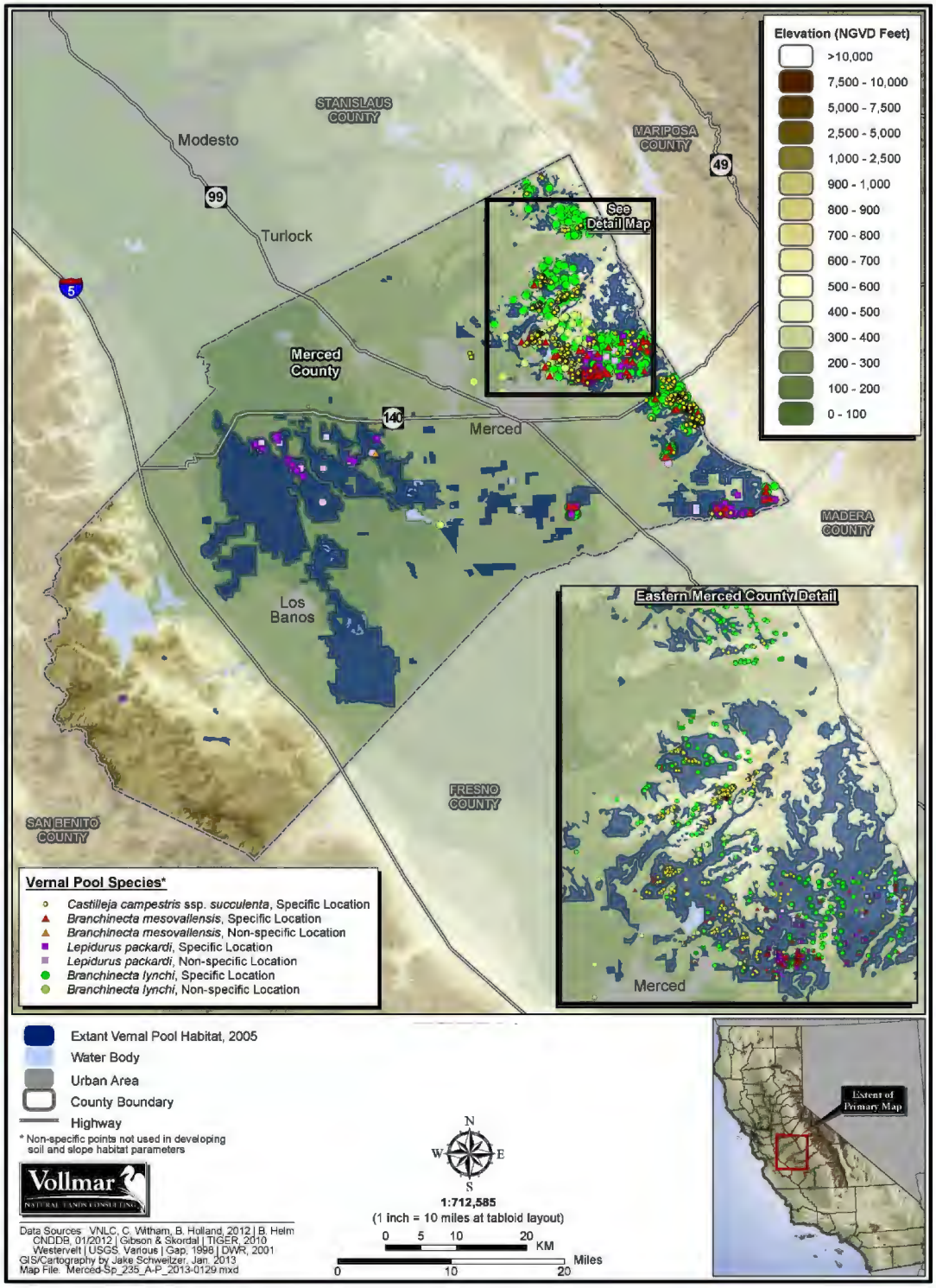


TABLE 3-43
Habitats in the Valley and Foothill Regions of Merced County

Habitat	Central Coast Range	San Joaquin Valley Floor	Central/Southern Sierra Nevada Foothills
Alkali Desert Scrub		X	
Annual/Ruderal Grassland	X	X	X
Barren	X	X	X
Blue Oak Woodland	X		X
Blue Oak-Foothill Pine Woodland	X		X
Chamise-Redshank Chaparral	X		X
Cropland	X	X	X
Eucalyptus	X	X	X
Fresh Emergent Wetland	X	X	X
Lacustrine	X	X	X
Mixed Chaparral	X		X
Orchard-Vineyard	X	X	X
Pasture	X	X	X
Riverine	X	X	X
Urban	X	X	X
Valley Oak Woodland	X		
Valley-Foothill Riparian	X	X	X
Vernal Pool		X	

Waterways of Importance. The county's waterways represent the major remaining natural habitat of value for wildlife and plant species. Merced County has inland water bodies, including lakes, rivers, canals, and reservoirs. Dams and reservoirs regulate all major streams and rivers contributing flow to Merced County. Merced County also has streams that are in the form of creeks, distributaries, rivers, and sloughs. Diversions upstream of and within the county to waterways allow for agricultural, municipal, and industrial uses. Large federally and state-contracted water canals cross and serve Merced County, including the California Aqueduct and the Delta-Mendota Canal.

Merced County's major waterways include:

Bear Creek	San Luis Dam	Los Banos Reservoir
Merced River	O'Neill Dam	Los Banos Creek
Lake Yosemite	San Luis Reservoir	Fresno River
Chowchilla River	O'Neill Forebay	
Owens Creek	Mariposa Creek	

Plants

✓ **Plant Communities**

Merced County is an area of varied topography and diverse ecosystems. The highly varied climatic conditions and topography result in a great diversity of flora throughout Merced County. Agricultural use, timber harvesting, grazing, and conversion to urban uses have significantly altered the county's natural vegetation. Non-native annual grasslands dominate Merced County; however, these plant communities are threatened by invasive species such as yellow star thistle, Himalayan blackberry, and tree of paradise.

Within the county's floristic regions, vegetation can be grouped into several plant communities. These plant associations are often difficult to define physically due to subtle transitions. Conversely, plant communities may change abruptly in response to differences in exposure, soil, or relative humidity.

✓ **Special-Status and Special Concern Plants**

Special-status plants are listed as candidates for threatened, rare, or endangered by the USFWS, the CDFW, and the California Native Plant Society (CNPS). The CNPS maintains an Inventory of Rare and Endangered Plants. Based on a search of the CNDDB and CNPS's Inventory of Rare and Endangered Plants, there are over 40 plants with special-status or special concern listing, which are believed to exist within Merced County. These special plant species are summarized in Table 3-44.

Wildlife

Merced County's wildlife is equally varied and unique due to the region's diversified habitats and topography. Although many native species and habitats have diminished in numbers and range in recent years, the county still contains varying amounts of deer range, fox habitat, waterfowl habitat, and habitat for special-status species.

✓ **Important Wildlife Areas**

Merced County has six designated wildlife areas within its boundaries: Volta Wildlife Area, North Grasslands Wildlife Area, Los Banos Wildlife Area, the San Luis National Wildlife Refuge, Cottonwood Creek Wildlife Area, and the Merced National Wildlife Refuge. More than 200 bird species and

subspecies are known to occur in the area. Mammals commonly found in the area include coyotes, muskrats, beavers, minks, raccoons, weasels, wild pigs, black-tailed hares, cottontail rabbits, spotted and striped skunks, and ground squirrels. Other species found include pond turtles, various fish, and the giant garter snake.

TABLE 3-44
Special-Status Plants Known or Suspected to Occur in Merced County
Current Listing Status

Plant Elements		CNPS Status	State Status	Federal Status
Common Name	Scientific Name			
Alkali Milk-Vetch	Astragalus Tener Var. Tener	1B.2	None	None
Arburua Ranch Jewelflower	Streptanthus Insignis Ssp. Lyonii	1B.2	None	None
Beaked Clarkia	Clarkia Rostrata	1B.3	None	None
Boggs Lake Hedge-Hyssop	Gratiola Heterosepala	1B.2	None	Endangered
Brewer's Clarkia	Clarkia Breweri	4.2	None	None
Brittlescale	Atriplex Depressa	1B.2	None	None
California Alkali Grass	Puccinellia Simplex	1B.2	None	None
California Androsace	Androsace Elongata Ssp. Acuta	4.2	None	None
Chaparral Harebell	Campanula Exigua	1B.2	None	None
Chaparral Ragwort	Senecio Aphanactis	2B.2	None	None
Coast Iris	Iris Longipetala	4.2	None	None
Colusa Grass	Neostapfia Colusana	1B.1	Threatened	Endangered
Coulter's Goldfields	Lasthenia Glabrata Ssp. Coulteri	1B.1	None	None

Plant Elements		CNPS Status	State Status	Federal Status
Common Name	Scientific Name			
Crownscale	Atriplex Coronata Var. Coronata	4.2	None	None
Delta Button-Celery	Eryngium Racemosum	1B.1	None	Endangered
Dwarf Downingia	Downingia Pusilla	2B.2	None	None
Eel-Grass Pondweed	Potamogeton Zosteriformis	2B.2	None	None
Ewan's Larkspur	Delphinium Hansenii Ssp. Ewanianum	4.2	None	None
Ferris' Goldfields	Lasthenia Ferrisiae	4.2	None	None
Forked Fiddleneck	Amsinckia Furcata	4.2	None	None
Forked Hare-Leaf	Lagophylla Dichotoma	1B.1	None	None
Greene's Tuctoria	Tuctoria Greenei	1B.1	Endangered	Rare
Hairy Orcutt Grass	Orcuttia Pilosa	1B.1	Endangered	Endangered
Hall's Bush-Mallow	Malacothamnus Hallii	1B.2	None	None
Hartweg's Golden Sunburst	Pseudobahia Bahiifolia	1B.1	Endangered	Endangered
Heartscale	Atriplex Cordulata Var. Cordulata	1B.2	None	None
Heckard's Pepper-Grass	Lepidium Latipes Var. Heckardii	1B.2	None	None
Henderson's Bent Grass	Agrostis Hendersonii	3.2	None	None
Hispid Salty Bird's-Beak	Chloropyron Molle Ssp. Hispidum	1B.1	None	None
Hogwallow Starfish	Hesperevax Caulescens	4.2	None	None

Plant Elements		CNPS Status	State Status	Federal Status
Common Name	Scientific Name			
Hoover's Calycadenia	Calycadenia Hooveri	1B.3	None	None
Hoover's Spurge	Euphorbia Hooveri	1B.2	Threatened	None
Hospital Canyon Larkspur	Delphinium Californicum Ssp. Interius	1B.2	None	None
Howell's Onion	Allium Howellii Var. Howellii	4.3	None	None
Idria Buckwheat	Eriogonum Vestitum	4.3	None	None
Keck's Checkerbloom	Sidalcea Keckii	1B.1	Endangered	None
Large-Flowered Leptosiphon	Leptosiphon Grandiflorus	4.2	None	None
Lemmon's Jewelflower	Caulanthus Lemmonii	1B.2	None	None
Lesser Saltscale	Atriplex Minuscula	1B.1	None	None
Little Mousetail	Myosurus Minimus Ssp. Apus	3.1	None	None
Lost Hills Crownscale	Atriplex Coronata Var. Vallicola	1B.2	None	None
Merced Monardella	Monardella Leucocephala	1A	None	None
Merced Phacelia	Phacelia Ciliata Var. Opaca	3.2	None	None
Michael's Rein Orchid	Piperia Michaelii	4.2	None	None
Munz's Tidy-Tips	Layia Munzii	1B.2	None	None
Northern California Black Walnut	Juglans Hindsii	1B.1	None	None
Panoche Pepper-Grass	Lepidium Jaredii Ssp. Album	1B.2	None	None

Plant Elements		CNPS Status	State Status	Federal Status
Common Name	Scientific Name			
Parry's Rough Tarplant	Centromadia Parryi Ssp. Rudis	4.2	None	None
Peruvian Dodder	Cuscuta Obtusiflora Var. Glandulosa	2B.2	None	None
Pincushion Navarretia	Navarretia Myersii Ssp. Myersii	1B.1	None	None
Prostrate Vernal Pool Navarretia	Navarretia Prostrata	1B.1	None	None
Protruding Buckwheat	Eriogonum Nudum Var. Indictum	4.2	None	None
Rattan's Cryptantha	Cryptantha Rattanii	4.3	None	None
Recurved Larkspur	Delphinium Recurvatum	1B.2	None	None
San Joaquin Spearscale	Extriplex Joaquinana	1B.2	None	None
San Joaquin Valley Orcutt Grass	Orcuttia Inaequalis	1B.1	Threatened	Endangered
Sanford's Arrowhead	Sagittaria Sanfordii	1B.2	None	None
Santa Clara Thorn-Mint	Acanthomintha Lanceolata	4.2	None	None
Serpentine Leptosiphon	Leptosiphon Ambiguus	4.2	None	None
Shining Navarretia	Navarretia Nigelliformis Ssp. Radians	1B.2	None	None
Slender Cottongrass	Eriophorum Gracile	4.3	None	None
Slender-Leaved Pondweed	Stuckenia Filiformis Ssp. Alpina	2B.2	None	None
Small-Flowered Morning-Glory	Convolvulus Simulans	4.2	None	None

Plant Elements		CNPS Status	State Status	Federal Status
Common Name	Scientific Name			
Spiny-Sepaled Button-Celery	Eryngium Spinosepalum	1B.2	None	None
Stinkbells	Fritillaria Agrestis	4.2	None	None
Subtle Orache	Atriplex Subtilis	1B.2	None	None
Succulent Owl's-Clover	Castilleja Campestris Var. Succulenta	1B.2	Threatened	Endangered
Vernal Barley	Hordeum Intercedens	3.2	None	None
Vernal Pool Smallscale	Atriplex Persistens	1B.2	None	None
Wright's Trichocoronis	Trichocoronis Wrightii Var. Wrightii	2B.1	None	None

Key:

Federal Status

Candidate — Species is a candidate to be listed under the Federal Endangered Species Act.

Endangered — Listed as "endangered" under Federal Endangered Species Act. Species faces possible extinction throughout all, or a significant portion of, its range.

Threatened — Although species is not presently at risk of extinction, it is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.

State Ranking

Rare — State listed as “rare”

Endangered — State listed as “endangered”

Threatened — State listed as “threatened”

California Native Plant Society

1A = Plants presumed extinct in California

1B = Rare everywhere

2 = Rare in California

#.1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

#.2 = Fairly endangered in California (20-80% occurrences threatened)

#.3 = Not very endangered in California (<20% of occurrences threatened, or no current threats known)

Sources:

California Department of Fish and Wildlife. 2026. California Natural Diversity Database (CNDDB). Sacramento, CA.

California Native Plant Society (CNPS). 2026. Inventory of Rare and Endangered Plants of California, online edition. Rare Plant Program, Sacramento, CA.

The Grassland Wildlife Management Area, also known as the Grassland Ecological Area, is of national and international importance to Merced County as it is home to over a third of the remaining Central Valley wetlands. Wetlands support diverse habitats, including seasonally flooded marshlands, semi-permanent marsh, riparian habitat, wet meadows, vernal pools, native uplands, pastures, and native grasslands. Over 550 plant and animal species are supported by the habitat, including rare, endangered, threatened, and candidate species, as well as special-status species. Wetlands and associated riparian habitats provide critical habitat for waterfowl in the Pacific Flyway and important habitat for many other plants and animals, including numerous threatened and endangered species. The Pacific Flyway is one of the four routes used by migratory routes. It is estimated that over 2 million migratory waterfowl and shorebirds use the habitats as wintering grounds and resting spots during their migration. In addition, it serves as a breeding ground and foraging habitat for waterfowl.

Merced County also supports non-designated wildlife areas as well. The following provides a brief description.

- *Waterfowl Habitat* - The riparian and marsh areas along Merced County rivers and numerous lakes and reservoirs provide excellent habitat for many waterfowl species.
- *Birds of Prey Habitat* - Merced County contains nest sites for the golden eagle, burrowing owl, prairie falcon, and Swainson's hawk. The nest sites have not been mapped in detail countywide; however, they are expected to occur in the foothills of the Sierra Nevada along the northeast county boundary.
- *Seasonal Wetlands* **-** Vernal pools of varying size are located within Merced County. Vernal pools have been found to provide habitat for several species of freshwater shrimp, including the Vernal Pool Tadpole Shrimp and Vernal Pool Fairy Shrimp, as well as a number of vernal pool plant species.

Merced County also has the following ecological reserves and five wildlife areas, and one wildlife preserve, as shown in Figure 3-9.

✓ **Special-status and Special Concern Animals**

For transportation/environmental work in Merced County (RTPs, corridor studies, CEQA/NEPA documents, PEIRs, and biological constraints analyses), the most frequently recurring species issues are usually: vernal pool species, California tiger salamander, San Joaquin kit fox, Swainson's hawk, giant garter snake, and listed grassland plants. These repeatedly drive avoidance, mitigation, and permitting requirements.

Animals – Merced County

Federally or State Endangered

- San Joaquin kit fox — Federal Endangered / California Threatened
- Giant garter snake — Federal Threatened / California Threatened
- Riparian brush rabbit — Federal Endangered
- Blunt-nosed leopard lizard — Federal Endangered / State Endangered
- Tipton kangaroo rat — Federal Endangered / State Endangered
- San Joaquin antelope squirrel — State Threatened
- Valley elderberry longhorn beetle — Federal Threatened
- Vernal pool tadpole shrimp — Federal Endangered
- Vernal pool fairy shrimp — Federal Threatened
- Conservancy fairy shrimp — Federal Endangered

Threatened

- California tiger salamander — Federal Threatened / State Threatened
- Western yellow-billed cuckoo — Federal Threatened / State Endangered
- Greater sandhill crane — State Threatened
- Swainson's hawk — State Threatened
- Western pond turtle — State Species of Special Concern

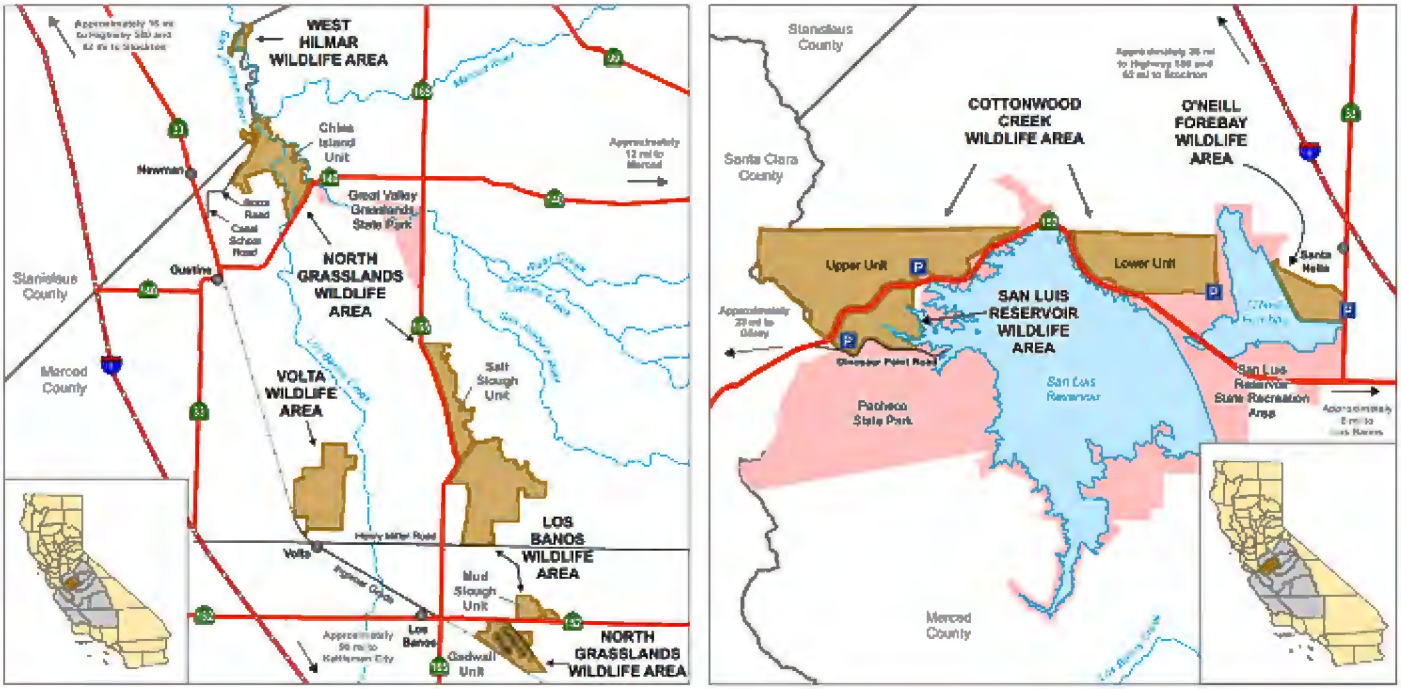
Rare / Species of Special Concern

- Burrowing owl
- Tricolored blackbird
- White-tailed kite
- Silvery legless lizard
- Northwestern pond turtle

In addition to the above, Merced County contains a number of animals with special status or special concern. Historical occurrences of several animals with special-status listing have been recorded or are known to occur within Merced County, according to the CNDDB. Special-status animals include:

- Those species that are officially candidates for, or are officially designated as, rare, threatened, or endangered classification by the CDFW and USFWS.

FIGURE 3-9
Wildlife Areas and Ecological Reserves



- Those species that are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for State or federal status, such as those identified as animal species of special concern by CDFW.

"Species of Special Concern" (SSC) status applies to animals not listed under the federal Endangered Species Act or the California Endangered Species Act, but which nonetheless 1) are declining at a rate that could result in listing, or 2) historically occurred in low numbers and known threats to their persistence currently exist.

Table 3-45 summarizes the numerous animals of special status believed to exist within Merced County, along with their special-status listings. Among those listed are twelve amphibians/reptiles, eleven fish, thirty-seven birds, twelve mammals, four insects, six crustaceans, and two mollusks.

Methodology

The impact assessment for biotics focuses on potential effects that the project might have on special-status plants, animals, and habitats. The assessment is not site or project-specific but is a regional analysis.

TABLE 3-45
Special-Status Animals Known or Suspected to Occur in Merced County and Current Listing Status

Common Name	Scientific Name	Federal Status	State Ranking	CDFW
Amphibians/Reptiles				
Blunt-Nosed Leopard Lizard	*Gambelia Sila*	Endangered	Endangered	FP
California Red-Legged Frog	*Rana Draytonii*	Threatened	None	SSC
California Tiger Salamander	*Ambystoma Californiense*	Threatened	Threatened	WL
Coast Horned Lizard	*Phrynosoma Blainvillii*	None	None	SSC
Coast Range Newt	*Taricha Torosa*	None	None	SSC
Foothill Yellow-Legged Frog	*Rana Boylii*	None	Candidate Threatened	SSC
Giant Gartersnake	*Thamnophis Gigas*	Threatened	Threatened	-
Northern California Legless Lizard	*Anniella Pulchra*	None	None	SSC
Northern Leopard Frog	*Lithobates Pipiens*	None	None	SSC
San Joaquin Coachwhip	*Masticophis Flagellum Ruddocki*	None	None	SSC
Western Pond Turtle	*Emys Marmorata*	None	None	SSC
Western Spadefoot	*Spea Hammondii*	None	None	SSC
Fish				
Chinook Salmon - Central Valley Fall / Late Fall-Run ESU	*Oncorhynchus Tshawytscha Pop. 13*	None	None	SSC
Delta Smelt	*Hypomesus Transpacificus*	Threatened	Endangered	-

Common Name	Scientific Name	Federal Status	State Ranking	CDFW
Hardhead	*Mylopharodon Conocephalus*	None	None	SSC
Kern Brook Lamprey	*Entosphenus Hubbsi*	None	None	SSC
Pacific Lamprey	*Entosphenus Tridentatus*	None	None	SSC
Riffle Sculpin	*Cottus Gulosus*	None	None	SSC
River Lamprey	*Lampetra Ayresii*	None	None	SSC
Sacramento Hitch	*Lavinia Exilicauda Exilicauda*	None	None	SSC
Sacramento Splittail	*Pogonichthys Macrolepidotus*	None	None	SSC
Sacramento-San Joaquin Tule Perch	*Hysterocarpus Traski Traski*	None	None	-
Steelhead - Central Valley DPS	*Oncorhynchus Mykiss Irideus Pop. 11*	Threatened	None	-
Birds				
American Bittern	*Botaurus Lentiginosus*	None	None	-
Bald Eagle	*Haliaeetus Leucocephalus*	Delisted	Endangered	FP
Black Tern	*Chlidonias Niger*	None	None	SSC
Black-Crowned Night Heron	*Nycticorax Nycticorax*	None	None	-
Burrowing Owl	*Athene Cunicularia*	None	None	SSC
Cackling (Aleutian Canada) Goose	*Branta Hutchinsii Leucopareia*	Delisted	None	-
California Horned Lark	*Eremophila Alpestris Actia*	None	None	WL
Cooper's Hawk	*Accipiter Cooperii*	None	None	WL
Double-Crested Cormorant	*Phalacrocorax Auritus*	None	None	WL
Ferruginous Hawk	*Buteo Regalis*	None	None	WL
Fulvous Whistling-Duck	*Dendrocygna Bicolor*	None	None	SSC

Common Name	Scientific Name	Federal Status	State Ranking	CDFW
Golden Eagle	*Aquila Chrysaetos*	None	None	FP ; WL
Grasshopper Sparrow	*Ammodramus Savannarum*	None	None	SSC
Great Blue Heron	*Ardea Herodias*	None	None	-
Great Egret	*Ardea Alba*	None	None	-
Greater Sandhill Crane	*Grus Canadensis Tabida*	None	Threatened	FP
Least Bell's Vireo	*Vireo Bellii Pusillus*	Endangered	Endangered	-
Least Bittern	*Ixobrychus Exilis*	None	None	SSC
Loggerhead Shrike	*Lanius Ludovicianus*	None	None	SSC
Long-Billed Curlew	*Numenius Americanus*	None	None	WL
Merlin	*Falco Columbarius*	None	None	WL
Mountain Plover	*Charadrius Montanus*	None	None	SSC
Northern Harrier	*Circus Cyaneus*	None	None	SSC
Osprey	*Pandion Haliaetus*	None	None	WL
Prairie Falcon	*Falco Mexicanus*	None	None	WL
Saltmarsh Common Yellowthroat	*Geothlypis Trichas Sinuosa*	None	None	SSC
Short-Eared Owl	*Asio Flammeus*	None	None	SSC
Snowy Egret	*Egretta Thula*	None	None	-
Swainson's Hawk	*Buteo Swainsoni*	None	Threatened	-
Tricolored Blackbird	*Agelaius Tricolor*	None	Candidate Endangered	SSC
Western Snowy Plover	*Charadrius Alexandrinus Nivosus*	Threatened	None	SSC
White-Faced Ibis	*Plegadis Chihi*	None	None	WL
White-Tailed Kite	*Elanus Leucurus*	None	None	FP
Yellow Rail	*Coturnicops Noveboracensis*	None	None	SSC
Yellow Warbler	*Setophaga Petechia*	None	None	SSC
Yellow-Breasted Chat	*Icteria Virens*	None	None	SSC
Yellow-Headed Blackbird	*Xanthocephalus Xanthocephalus*	None	None	SSC

Common Name	Scientific Name	Federal Status	State Ranking	CDFW
Mammals				
American Badger	*Taxidea Taxus*	None	None	SSC
Giant Kangaroo Rat	*Dipodomys Ingens*	Endangered	Endangered	-
Hoary Bat	*Lasiurus Cinereus*	None	None	-
Merced Kangaroo Rat	*Dipodomys Heermanni Dixoni*	None	None	-
Nelson's Antelope Squirrel	*Ammospermophilus Nelsoni*	None	Threatened	-
Pallid Bat	*Antrozous Pallidus*	None	None	SSC
San Joaquin Kit Fox	*Vulpes Macrotis Mutica*	Endangered	Threatened	-
San Joaquin Pocket Mouse	*Perognathus Inornatus*	None	None	-
Townsend's Big-Eared Bat	*Corynorhinus Townsendii*	None	None	SSC
Western Mastiff Bat	*Eumops Perotis Californicus*	None	None	SSC
Western Red Bat	*Lasiurus Blossevillii*	None	None	SSC
Yuma Myotis	*Myotis Yumanensis*	None	None	-
Insects/Invertebrates				
California Linderiella	*Linderiella Occidentalis*	None	None	-
Conservancy Fairy Shrimp	*Branchinecta Conservatio*	Endangered	None	-
Crotch Bumble Bee	*Bombus Crotchii*	None	None	-
Longhorn Fairy Shrimp	*Branchinecta Longiantenna*	Endangered	None	-
Midvalley Fairy Shrimp	*Branchinecta Mesovallensis*	None	None	-
Molestan Blister Beetle	*Lytta Molesta*	None	None	-
Valley Elderberry Longhorn Beetle	*Desmocerus Californicus Dimorphus*	Threatened	None	-
Valley Mydas Fly	*Rhaphiomidas Trochilus*	None	None	-

Common Name	Scientific Name	Federal Status	State Ranking	CDFW
Vernal Pool Fairy Shrimp	*Branchinecta Lynchi*	Threatened	None	-
Vernal Pool Tadpole Shrimp	*Lepidurus Packardi*	Endangered	None	-
Western Pearlshell	*Margaritifera Falcata*	None	None	-
Western Ridged Mussel	*Gonidea Angulata*	None	None	-

Key:

SSC Species of Special Concern

Federal Status

Endangered Listed as "endangered" under the Federal Endangered Species Act. Species faces possible extinction throughout all, or a significant portion of, its range.

Threatened Although the species is not presently at risk of extinction, it is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.

Proposed Species has been proposed for listing under the State and/or Federal Endangered Species Act

Candidate Species are candidates for possible State or Federal listing.

State Ranking

S1 = Less than 6 EOs OR less than 1,000 individuals OR less than 2,000 acres

S2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres

S3 = 21-100 EOs or 3,000-10,000 individuals OR 10,000-50,000 acres

Source:
California Department of Fish and Wildlife. 2026. California Natural Diversity Database

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Biotic resources often redistribute themselves in response to available habitat, water, food sources, development pressures, population growth, and other factors. A project-level evaluation of project impacts on biological resources is not feasible as it would require site-specific studies across all of Merced County. However, some general impacts can be identified, based on the nature of the individual transportation improvements. Projects located in special habitats, or habitats of special animals or plants, adjacent to impaired water bodies, or in flood hazard areas are most likely to affect water resources. Construction of the proposed projects and future land use developments could affect water quality because each project would increase the area of paved surface. Water quality can be affected by

stormwater runoff that flows over paved surfaces before reaching a major creek, river, or other water body.

Floodplains are areas that are periodically inundated during high flows in nearby streams or by high water levels in ponds or lakes. Natural floodplains provide wildlife and plant habitat, open space, and groundwater recharge. Project construction could affect these uses if not mitigated.

Criteria for Significance

The CEQA Guidelines establish that a significant impact would be expected to occur if the project were:

- ✓ Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

- ✓ Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?

- ✓ Have a substantial adverse effect on 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?

- ✓ 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?

- ✓ Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact BR 3.5.1 – 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

The RTP/SCS include projects that may result in direct impacts to plant and wildlife species that are identified in Tables 3-44 and 3-45 above, including rare, threatened and/or endangered species during construction and operation of the proposed transportation facilities and future land use developments through the removal or direct mortality as a result of construction equipment, operational traffic, etc. of native habitat.

The Project may result in indirect impacts on plant and wildlife species, including rare, threatened, and/or endangered species, during construction and operation through edge effects such as noise, lighting, and visual barriers. Short- and long-term indirect impacts on special-status species from the construction and operation of transportation facilities and other future land use facilities include edge effects, such as noise and lighting. These impacts may be less than significant for improvement projects on existing transportation facilities or in already developed areas because the types of operational impacts, although potentially increased, would remain the same. Noise impacts will be most adverse during construction. However, these impacts are temporary (lasting 1 to 5 years) and are generally considered not significant.

Mitigation Measures

The specific impacts on plant and wildlife species will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, lead agencies wanting to tier to this EIR for CEQA compliance on subsequent discretionary permits and approvals would be expected to include the mitigation measures referenced below (or a functional equivalent) as conditions of approval of their respective permits and approvals, as appropriate.

- ✓ **BR 3.5.1-1** Each proposed individual transportation improvement project and future land use development will consider the displacement of sensitive habitat, sensitive species, and non-native habitat.

- ✓ **BR 3.5.1-2** When avoidance of native vegetation removal is not possible, each transportation improvement project and future land use development shall replant disturbed areas with commensurate native vegetation of high habitat value adjacent to the project (i.e., as opposed to ornamental vegetation with relatively less habitat value).

- ✓ **BR 3.5.1-3** Focused sensitive plant and wildlife species and non-native habitat surveys will be conducted within suitable habitat to determine the distribution of sensitive species within the biological impact area of each transportation improvement project and future land use development. Sensitive plant and non-native habitat surveys will be conducted during the appropriate flowering season for sensitive plant species that may occur within the individual transportation improvement project or the future land use development area. In all cases, impacts on special-status species and/or their habitat shall be avoided during construction to the extent feasible.

- ✓ **BR 3.5.1-4** If sensitive plant or wildlife species and non-native habitat are identified within the biological impact area, a Biological Resource Management Plan (BRMP) will be developed to address

appropriate avoidance and minimization measures. These measures may include seed collection and salvage measures for sensitive plant species and non-native habitats, silt fencing, exclusion fencing, and/or appropriate compensation where impacts cannot be fully avoided.

✓ **BR 3.5.1-5** Individual transportation improvement projects and future land use developments shall include off-site habitat enhancement or restoration to compensate for unavoidable habitat losses from the project site.

✓ **BR 3.5.1-6** Locations of sensitive species, sensitive habitat, and non-native habitat will be mapped and shown on construction drawings and identified as Environmentally Sensitive Areas (ESAs). Prior to construction, these areas will be flagged and/or fenced to prevent unnecessary impacts from machinery and foot traffic.

✓ **BR 3.5.1-7** Temporary access roads and staging areas will not be located within areas containing sensitive plant, sensitive wildlife species, or non-native habitat wherever feasible, so as to avoid or minimize impacts to these species.

✓ **BR 3.5.1-8** Construction activities will be scheduled, as appropriate and feasible, to avoid sensitive times that have a greater likelihood to affect significant resources such as spawning periods for fish, nesting season for birds, and/or the rainy season for riparian habitat and sediment/erosion control.

✓ **BR 3.5.1-9** All vegetation (including tall grasses) will be removed between August 16th and February 14th, if possible, to avoid potential conflicts with nesting birds. If it is not possible to remove vegetation during that time frame, a nest clearance survey will be completed prior to vegetation clearing. Any detected nests will be mapped and provided with an appropriate buffer as recommended by a qualified biologist. Construction activities within the buffer area will not be allowed until after September 15 or until fledglings have abandoned the nest.

✓ **BR 3.5.1-10** A Worker Awareness Program (environmental education) shall be developed and implemented to inform project workers of their responsibilities in regard to avoiding and minimizing impacts on sensitive biological resources.

✓ **BR 3.5.1-11** An Environmental Inspector shall be appointed to serve as a contact for issues that may arise concerning implementation of mitigation measures, and to document and report on adherence to these measures.

✓ **BR 3.5.1-12** A qualified wetland scientist shall review construction drawings as part of each project-specific environmental analysis to determine whether wetlands will be impacted, and if necessary, perform a formal wetland delineation. Appropriate State and federal permits shall be obtained, but each project EIR will contain language clearly stating the provisions of such permits, including

avoidance measures, restoration procedures, and, in the case of permanent impacts, compensatory creation or enhancement measures to ensure no net loss of wetland extent or function and values.

- ✓ **BR 3.5.1-13** Sensitive habitats (native vegetative communities identified as rare and/or sensitive by the CDFW) and special-status plant species (including vernal pools) impacted by projects shall be restored and augmented, if impacts are temporary, at a 1.1:1 ratio (compensation acres to impacted acres). Permanent impacts shall be compensated for by creating or restoring habitats at a 3:1 ratio as close as possible to the site of the impact.

- ✓ **BR 3.5.1-14** When work is conducted in identified sensitive habitat areas and/or areas of intact native vegetation, construction protocols shall require the salvage of perennial plants and the salvage and stockpile of topsoil (the surface material from 6 to 12 inches deep) and shall be used in restoring native vegetation to all areas of temporary disturbance within the project area.

- ✓ **BR 3.5.1-15** If specific project area trees are designated as "Landmark Trees" or "Heritage Trees", then approval for removals shall be obtained through the appropriate entity, and appropriate mitigation measures shall be developed at that time, to ensure that the trees are replaced. Due to the close proximity of these areas to sensitive wildlife habitats, all mitigation trees will be sourced only from locally collected native species.

- ✓ **BR 3.5.1-16** The height, spacing, number, and type of light fixtures will be selected and installed to minimize intrusive light escaping from the physical boundaries of the site.

- ✓ **BR 3.5.1-17** The height, spacing, number, and type of light fixtures will be selected and installed to minimize intrusive light escaping from the physical boundaries of the site. In addition, road noise shall be minimized by implementing appropriate and effective noise-reduction strategies or noise-abatement applications, as required by implementing agencies.

- ✓ **BR 3.5.1-18** A qualified biologist shall conduct a habitat assessment, well in advance of implementation of individual subsequent projects, to determine if individual project areas or their immediate vicinity contain habitat suitable to support special-status plant or animal species, including, but not limited to, those mentioned above.

- ✓ **BR 3.5.1-19** It is recommended that the lead or responsible agency assess the presence/absence of special-status species by conducting surveys following recommended protocols or protocol-equivalent surveys.

- ✓ **BR 3.5.1-20** If special-status plant or animal species within or in the vicinity of tiered project areas are detected, consultation with CDFW to discuss how to implement ground-disturbing activities and avoid take shall be undertaken.

- ✓ **BR 3.5.1-21** In the case of the detection of State-listed species, consultation with CDFW shall be undertaken to discuss how to avoid take, or if avoidance is not feasible, to acquire an Incidental Take Permit (ITP) prior to ground-disturbing activities, pursuant to Fish and Game Code§ 2081 (b).

- ✓ **BR 3.5.1-22** Implementing agencies should consult with the USFWS on potential impacts to federally listed species. Implementing agencies should consult with the USFWS in order to comply with the Federal Endangered Species Act (FESA) well in advance of any ground-disturbing activities. A take under FESA includes significant habitat modification or degradation that could result in the death or injury of a listed species by interfering with essential behavioral patterns, such as breeding, foraging, or nesting.

- ✓ **BR 3.5.1-23** Implementing agencies are encouraged to report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNDDB field survey form can be found at the following link:

  http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDB FieldSurveyForm.pdf.

  The completed form can be mailed electronically to CNDDB at the following email address: **CNDDB@wildlife.ca.gov.**

  The types of information reported to CNDDB are available at the following link: **http://www.dfg.ca.gov/biogeodata/cnddb/plants and animals.asp.**

- ✓ **BR 3.5.1-24** If it is determined that tiered projects have the potential to impact biological resources, an assessment of filing fees will be necessary. Fees are payable upon the Lead Agency's filing of the Notice of Determination and help defray CDFW's environmental review costs. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, title. 14, § 753.5; Fish & Game Code, § 711.4; Pub. Resources Code, § 21089).

Significance After Mitigation

This impact would likely be significant if the proposed individual improvement project occurs within or near known populations of sensitive plant and wildlife species or within designated critical habitat for federally or State-listed species. These mitigation measures would require implementing agencies to avoid or mitigate impacts to sensitive plant and wildlife species. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or

reduce impacts on sensitive plant and wildlife species, such impacts are likely to remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact BR 3.5.2 - Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

Direct impacts on biological resources involve the temporary or permanent physical loss of vegetation communities, wildlife habitat, and special-interest plant and wildlife species resulting from site preparation activities such as clearing, grubbing, and grading.

Indirect impacts on vegetation communities include the potential for increased susceptibility of adjacent, native habitats to invasion by non-native plant species. The establishment of non-native vegetation increases competition between native and non-native vegetation for available resources, resulting in decreased native species diversity in adjacent native habitats. Fugitive dust created during project-related construction activities may settle on plants adjacent to the construction zone. This dust can at least temporarily reduce plant photosynthesis, growth, and reproduction.

The RTP/SCS includes projects that may result in direct removal or degradation of riparian habitat or other sensitive natural communities during construction activities such as grading and grubbing.

Mitigation Measures

The specific impacts on sensitive habitats, including jurisdictional waters and wetlands, will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, lead agencies wanting to tier to this EIR for CEQA compliance on subsequent discretionary permits and approvals would be expected to include the mitigation measures referenced below (or a functional equivalent) as conditions of approval of their respective permits and approvals, as appropriate.

- ✓ **BR 3.5.2-1** When applicable to federally funded projects, responsible and implementing agencies should commit to improved interagency coordination and integration of the National Environmental Policy Act (NEPA) and the Clean Water Act Section 404 procedures during three stages: transportation planning, project programming, and project implementation. Affected State and local agencies should commit to ensuring the earliest possible consideration of environmental concerns pertaining to U.S.

water bodies, including wetlands, at each of the three stages identified above. In addition, the agencies should place a high priority on avoiding adverse impacts to waters of the U.S. and associated sensitive species, including threatened and endangered species. Implementation of NEPA-404 requirements will expedite the construction of necessary transportation projects, benefiting mobility and the economy at large. The process will also enable more street and highway projects to proceed on budget and on schedule. Finally, the process will improve cooperation and efficiency of governmental operations at all levels, thereby better serving the public.

- ✓ **BR 3.5.2-2** Construction and operational Best Management Practices (BMPs) will be identified, installed, and maintained by implementing agencies in order to prevent silt and other pollutants from entering jurisdictional waters and wetlands, thereby degrading or destroying wildlife and/or natural habitat. BMPs may include straw bales and/or mats, temporary sedimentation basins, silt fence, sandbag check dams, dry season construction, etc.

- ✓ **BR 3.5.2-3** Native soils in construction areas will be removed, stockpiled separately, and replaced by implementing agencies in those areas where onsite revegetation of the native habitat is planned.

- ✓ **BR 3.5.2-4** Any disturbed natural areas will be replanted by implementing agencies with appropriate native vegetation following the completion of construction activities.

- ✓ **BR 3.5.2-5** During the individual improvement or future land use development project design phase, impacts to jurisdictional waters and wetlands will be minimized by implementing agencies to the greatest extent feasible.

- ✓ **BR 3.5.2-6** Implementing agencies will obtain and comply with appropriate regulatory requirements prior to construction.

- ✓ **BR 3.5.2-7** It is recommended that a qualified biologist conduct a habitat assessment in advance of project implementation, to determine if individual project areas or their immediate vicinity support freshwater marsh, wetland, vernal pool, and/or riparian communities.

- ✓ **BR 3.5.2-8** Where applicable, it is recommended that a formal wetland delineation be conducted by a qualified biologist to determine the location and extent of wetlands and waterways on parcels slated for development. Please note that, while there is overlap, State and Federal definitions of wetlands, as well as which activities require notification pursuant to Fish and Game Code § 1602, differ.

- ✓ **BR 3.5.2-9** Project-related activities that have the potential to change the bed, bank, and channel of streams and other waterways may be subject to CDFW's regulatory authority pursuant to Fish and Game Code §1600 et seq.; therefore, notification is recommended. Fish & Game Code §1602 requires an entity to notify CDFW prior to commencing any activity that may (a) substantially divert or obstruct

the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake (including the removal of riparian vegetation); (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. "Any river, stream, or lake" includes those that are ephemeral or intermittent as well as those that are perennial. CDFW is required to comply with CEQA in the issuance of a Lake and Streambed Alteration Agreement. For additional information on notification requirements, please contact our staff in the Lake and Streambed Alteration Program at (559) 243-4593.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While the implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on sensitive habitats, including jurisdictional waters and wetlands, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact BR 3.5.3 – Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Waters of the United States include, but are not limited to, rivers, streams, lakes, ponds, wetlands, vernal pools, marshes, wet meadows, and seeps. The RTP/SCS transportation improvements and future land use developments could result in the discharge of dredged or fill material into waters of the United States. Therefore, transportation and future land use impacts related to the discharge of dredged or fill material into waters of the United States are considered potentially significant.

Mitigation Measures

The specific impacts of discharging dredged or fill materials into waters of the United States will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, lead agencies wanting to tier to this EIR for CEQA compliance on subsequent discretionary permits and approvals would be expected to include the mitigation measures referenced

below (or a functional equivalent) as conditions of approval of their respective permits and approvals, as appropriate.

- ✓ **BR 3.5.3-1** For Individual transportation and future land use development projects near water resources, implementing agencies shall prepare an aquatic resources delineation, in accordance with the "Minimum Standards for Acceptance of Preliminary Aquatic Resource Delineations" and "Final Map and Drawing Standards for the South Pacific Division Regulatory Program" under "Jurisdiction" on the U.S. Army Corps of Engineers website (www.spk.usace.army.mil/missions/regulatry.aspx), and submit it to the U.S. Army Corps of Engineers, Regulatory Division, California South Branch, 1325 J Street, Room 1350, Sacramento, California 95814, for verification. A list of consultants who prepare wetland delineations and permit application documents is also available on our website at the same location.

- ✓ **BR 3.5.3-2** For Individual transportation and future land use development projects near water resources, implementing agencies shall include alternatives that avoid impacts to wetlands or other waters of the United States. Every effort should be made to avoid project features that require the discharge of dredged or fill material into waters of the United States. In the event it can be clearly demonstrated that there are no practicable alternatives to filling waters of the United States, mitigation plans should be developed to compensate for the unavoidable losses resulting from project implementation.

Significance After Mitigation

The responsibility to mitigate siltation impacts rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce siltation impacts, it is likely that such impacts will remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact BR 3.5.4 – 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.

The RTP/SCS would result in temporary and permanent impacts on the movement of terrestrial and aquatic wildlife. The nature of transportation projects and future land use developments increases the potential extent and significance of impacts on wildlife movement. Transportation facilities pose barriers

to wildlife crossings, which may result in the injury or death of wildlife attempting to cross them. These barriers also result in the fragmentation of natural habitat and increased edge effects from lighting, noise, human disturbance, exotic plant infestations, urban runoff, etc. Smaller habitat fragments result in greater edge-effect intensity. It is also important to maintain connections among wildlife populations so that interbreeding and/or the inability of young to disperse to suitable habitats does not occur. Impacts on wildlife movement would be greater along entirely new transportation facilities or future land use developments than with improvements to existing facilities because existing facilities have already formed barriers.

Mitigation Measures

The specific impacts of temporary and permanent changes in terrestrial and aquatic wildlife movement will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, lead agencies wanting to tier to this EIR for CEQA compliance on subsequent discretionary permits and approvals would be expected to include the mitigation measures referenced below (or a functional equivalent) as conditions of approval of their respective permits and approvals, as appropriate.

- ✓ **BR 3.5.4-1** During final design, implementing agencies will design, construct, and maintain terrestrial wildlife crossings in order to minimize barrier effects and habitat fragmentation created by individual transportation projects and future land use developments.

- ✓ **BR 3.5.4-2** During final design, implementing agencies will design, construct, and maintain any structure/culvert placed within a stream where endangered or threatened fish occur/may occur. The structure/culvert will not constitute a barrier to upstream or downstream movement of aquatic life or cause an avoidance reaction by fish that impedes their upstream or downstream movement. This includes, but is not limited to, the supply of water at an appropriate depth for fish migration.

Significance After Mitigation

These mitigation measures would require implementing agencies responsible for the review, design, and implementation of transportation projects and future land use developments to avoid or mitigate impacts on wildlife movement. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce temporary and permanent impacts

on the movement of terrestrial and aquatic wildlife, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact BR 3.5.5 - Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The County and cities have local ordinances and policies in place that protect native and non-native trees in urban landscapes. These ordinances and policies define protected trees differently (e.g., certain species, minimum diameter at breast height (dbh), and trees that form riparian corridors). The RTP/SCS transportation improvements and future land use developments could result in the removal of trees protected by local policies or ordinances. In addition, implementation of the proposed Project may also conflict with other local policies or ordinances that protect locally significant biological resources. Therefore, transportation and future land use impacts related to conflicts with local policies or ordinances that protect biological resources are considered potentially significant.

Mitigation Measures

The specific impacts related to conflicts with local ordinances and policies will be evaluated as part of the implementation agencies' project-level environmental review process regarding their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, lead agencies wanting to tier to this EIR for CEQA compliance on subsequent discretionary permits and approvals would be expected to include the mitigation measures referenced below (or a functional equivalent) as conditions of approval of their respective permits and approvals, as appropriate.

- ✓ **BR 3.5.5-1** Implementing agencies should require project applicants to prepare biological resources assessments for specific projects proposed in areas containing, or likely to contain, protected trees or other locally protected biological resources. The assessment should be conducted by appropriately trained professionals in accordance with industry-adopted protocols and standards. Mitigation should be implemented when significance thresholds are exceeded. Mitigation should be consistent with the requirements of CEQA and/or follow applicable plans promulgated to protect species/habitat.

- ✓ **BR 3.5.5-2** Implementing agencies should design projects such that they avoid and minimize direct and indirect impacts to protected trees and other locally protected resources where feasible, as defined in section 15364 of the CEQA Guidelines.

- ✓ **BR 3.5.5-3** As part of project-level environmental review, implementing agencies will ensure that projects comply with the most recent general plans, policies, and ordinances, and conservation plans. A review of these documents and compliance with their requirements will be demonstrated in the project-level environmental documentation. Review of these documents and compliance with their requirements should be demonstrated in project-level environmental documentation.

Significance After Mitigation

The responsibility to mitigate siltation impacts rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce conflicts with local policies or ordinances that protect biological resources, such impacts may remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact BR 3.5.6 – Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The 2026 RTP/SCS is not expected to conflict significantly with Habitat Conservation Plans (HCPs), Natural Community Conservation Plans (NCCPs), or any other approved local, regional, or state habitat conservation plan because all of the transportation projects covered would be required to comply with existing HCPs, NCCPs, and other approved conservation plans. The RTP/SCS includes regional policies that could impact growth throughout the region. The analysis in the PEIR considers gross regional impacts of the land development and transportation investments described in the RTP/SCS. The cumulative impacts on the biotic resources in Merced County resulting from the Projects presented in the RTP/SCS include fragmentation of existing habitats and incremental impact on biological resources, requiring consideration of mitigation measures.

Mitigation Measures

The specific conflicts with existing HCPs, NCCPs, and other approved habitat conservation plans will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s).

Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, lead agencies wanting to tier to this EIR for CEQA compliance on subsequent

discretionary permits and approvals would be expected to include the mitigation measures referenced below (or a functional equivalent) as conditions of approval of their respective permits and approvals, as appropriate.

- ✓ **BR 3.5.6-1** Consult with federal, state, and/or local agencies that handle the administration of HCPs and NCCPs.

- ✓ **BR 3.5.6-2** When feasible, the project will be designed in such a way that lands preserved under HCPs or NCCPs are avoided.

- ✓ **BR 3.5.6-3** Sufficient conservation measures to fulfill the HCPs or NCCPs requirements should be taken when avoidance is determined to be infeasible.

Significance After Mitigation

The responsibility to mitigate siltation impacts rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. Implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce conflicts with any HCPs, NCCPs, and other approved conservation plans. It is anticipated that the Projects presented in the RTP/SCS will be required to comply with existing conservation plans, and that the listed mitigation measures will be sufficient to ensure impacts remain below a significant level.

3.6 CLIMATE CHANGE

This section includes a discussion of global climate change, its causes, and the contribution of human activities, as well as a summary of existing greenhouse gas emissions. This section also describes the criteria for determining the significance of climate change impacts and estimates the likely greenhouse gas emissions resulting from vehicular traffic and other emission sources associated with the project. Where appropriate, mitigation measures are recommended to reduce Project-related impacts of the Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS).

Regulatory Setting

Federal

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to assess the impacts of global warming and develop strategies that nations could use to curb it. In 1992, the United States joined other countries worldwide in signing the United Nations Framework Convention on Climate Change, with the goal of controlling greenhouse gas emissions.

As a result, the Climate Change Action Plan was developed to address the reduction of greenhouse gases in the United States. The plan comprises more than 50 voluntary programs. Additionally, the Montreal Protocol was first signed in 1987 and considerably amended in 1990 and 1992. The Montreal Protocol instructs that the production and consumption of compounds that deplete ozone in the stratosphere, chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and methyl chloroform, were to be phased out by 2000 (2005 for methyl chloroform).

In *Massachusetts v. EPA* (April 2, 2007), the U.S. Supreme Court held that greenhouse gases (GHGs) fall within the Clean Air Act's definition of an "air pollutant" and directed the U. S. Environmental Protection Agency (EPA) to determine whether GHGs are affecting climate change. The EPA must regulate GHG emissions from automobiles under the Federal Clean Air Act (FCAA) if it is determined that GHGs affect climate change. In addition, Congress has increased the corporate average fuel economy (CAFE) standards for the U.S. automotive fleet. In August of 2012, President Barack Obama finalized groundbreaking standards that increased fuel economy to the equivalent of 54.5 mpg for cars and light-duty trucks by Model Year 2025. This rise in CAFE standards will result in a significant reduction in GHG emissions from automobiles, the largest single source of GHG emissions in California.

The United States Environmental Protection Agency (U.S. EPA) annually publishes the Inventory of U.S. Greenhouse Gas Emissions and Sinks for estimating sources of GHGs, which is generally consistent with the IPCC methodology developed in its *Guidelines for National Greenhouse Gas Inventories*.

On February 12, 2026, the U.S. EPA rescinded the 2009 Greenhouse Gas Endangerment Finding. Without it, the EPA lacks authority under Section 202(a) of the Clean Air Act to set greenhouse gas emission standards and repealed related standards for light-, medium-, and heavy-duty on-highway vehicles and engines. The agency called this the "single largest deregulatory action in U.S. history" and said it would "save Americans over $1.3 trillion." However, the rescission has raised major legal, scientific, and policy concerns, including the politicization of scientific data and long-term effects on greenhouse gas emissions, climate change, public health, and future federal regulatory authority.

Federal Regulations

- ✓ **Energy Policy and Conservation Act -** The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the National Highway Traffic and Safety Administration (NHTSA), as a part of the U.S. Department of Transportation (USDOT), is responsible for establishing additional vehicle standards and for revising existing standards.

  Since 1990, the fuel economy standard for new passenger cars has been 27.5 miles per gallon (mpg). Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. In September of 2011, the U.S. EPA and NHTSA finalized rules to reduce greenhouse gas emissions and fuel consumption for on-road heavy-duty vehicles, in response to President Obama's directive to develop a new generation of clean vehicles. NHTSA's final fuel consumption standards and U.S. EPA's final carbon dioxide (CO2) emissions standards are designed for each of three regulatory categories of heavy-duty vehicles. For combination tractors, the engine and vehicle standards begin in Model Year 2014 and achieve a 7 to 20% reduction in carbon dioxide (CO2) emissions and fuel consumption by Model Year 2017 over the 2010 baselines. For heavy-duty pickup trucks and vans, the standards begin in Model Year 2014 and achieve up to a 10% reduction in CO2 emissions and fuel consumption for gasoline vehicles and 15% reduction for diesel vehicles by Model Year 2018. For vocational vehicles, the engine and vehicle standards begin in Model Year 2014 and achieve up to a 10% reduction in fuel consumption and CO2 emissions by Model Year 2017.

- ✓ **Energy Policy Act of 1992 (EPAct) -** The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government fleets, as well as private fleets, to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be available to businesses and individuals to cover the incremental cost of alternative-fuel vehicles (AFVs). States are also required by the act to consider a variety of incentive programs to help promote AFVs.

- ✓ **Infrastructure Investment and Jobs Act (IIJA)/Bipartisan Infrastructure Law (BIL) –** The Infrastructure Investment and Jobs Act (IIJA), commonly referred to as the Bipartisan Infrastructure Law (BIL), was signed into law on November 15, 2021. The legislation authorizes approximately $1.2 trillion in federal investments, including approximately $550 billion in new spending over five years, to modernize and improve the nation's transportation, water, energy, broadband, and other critical infrastructure systems. The BIL reauthorized surface transportation programs through Federal Fiscal Year 2026 and provides substantial funding for highways, bridges, public transportation, passenger and freight rail, active transportation, electric vehicle infrastructure, and resilience and sustainability programs. The legislation also established numerous competitive grant programs to improve safety, mobility, equity, climate resilience, and economic development, while supporting reductions in greenhouse gas emissions and advancing national infrastructure priorities.

- ✓ **Moving Ahead for Progress in the 21st Century (MAP-21) -** The bill alters the requirements and incentives for spending on sustainable transportation initiatives. More specifically, the bill demands MPOs to address performance measures in planning and project selection. Long-range plans must include performance targets, and transportation improvement programs must discuss the anticipated effects of selected projects on achieving those targets. In addition, electric vehicle charging and natural gas fueling stations are expressly authorized uses of funding under the Congestion Mitigation and Air Quality Program (CMAQ), surface transportation, and highway safety programs. The bill is the first significant change to transportation funding since the passage of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005.

- ✓ **Fixing America's Surface Transportation (FAST) Act** - On December 4, 2015, President Obama signed the Fixing America's Surface Transportation (FAST) Act (Pub. L. No. 114-94) into law—the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment. The FAST Act authorizes $305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs. The FAST Act maintains our focus on safety, keeps intact the established structure of the various highway-related programs we manage, continues efforts to streamline project delivery, and, for the first time, provides a dedicated source of federal dollars for freight projects. With the enactment of the FAST Act, states and local governments are now moving forward with critical transportation projects with the confidence that they will have a federal partner over the long term.

- ✓ **Energy Policy Act of 2005 -** The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

- ✓ **Energy Independence and Security Act of 2007 -** Passed in 2007, the Energy Independence and Security Act of 2007 (EISA) (42 USC Section 17381 [2007]) includes provisions to increase the supply of renewable alternative fuel sources by setting a mandatory Renewable Fuel Standard. The standard mandates transportation fuel sold in the U.S. to contain a minimum of 36 billion gallons of renewable fuels annually by 2026. EISA also promotes grant programs to encourage the development of cellulosic biofuels, plug-in hybrid electric vehicles, and other emerging electric vehicle technologies. EISA codifies into law the energy-reduction goals for federal agencies set forth in Executive Order 13423 (U.S. EPA 2007) and creates new requirements related to Corporate Average Fuel Economy Standards, the Renewable Fuel Standard, and efficiency standards for lighting and appliances.

- ✓ **Executive Order 13514 -** The President signed Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance (3 CFR 13514), in October 2009. This Executive Order concentrates on improving the environmental, energy, and economic performance of federal agencies. Federal agencies are required to increase energy efficiency, reduce fleet petroleum consumption, conserve water, reduce waste, support sustainable communities, and leverage federal purchasing power to promote environmentally responsible products and technologies.

  The Executive Order requires agencies to meet energy, water, and waste reduction targets, including:

  - 30 percent reduction in vehicle fleet petroleum use by 2020.
  - 26 percent improvement in water efficiency by 2020.
  - 50 percent recycling and waste diversion by 2015.
  - 95 percent of all applicable contracts will meet sustainability requirements.
  - Implementation of the 2030 net-zero-energy building requirement.

- ✓ **Federal Climate Change Policy -** According to the U.S. EPA, "the United States government has established a comprehensive policy to address climate change" that includes slowing the growth of emissions; strengthening science, technology, and institutions; and enhancing international cooperation. To implement this policy, "the Federal government is using voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science." The federal government's goal is to reduce the GHG intensity (a measurement of GHG emissions per unit of economic activity) of the American economy by 18 percent over the 10-year period from 2002 to 2012. In addition, the U.S. EPA administers multiple programs that encourage voluntary GHG reductions, including "ENERGY STAR", "Climate Leaders", and Methane Voluntary Programs. In addition, other federal plans, policies, regulations, and laws directly regulate GHG emissions.

  On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Federal Clean Air Act (FCAA):

- **Endangerment Finding:** The U.S. EPA Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)--in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The U.S. EPA Administrator found that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action was a prerequisite to finalizing the U.S. EPA's proposed greenhouse gas emission standards for light-duty vehicles. On May 7, 2010, the U.S. EPA and the Secretary of Transportation promulgated a joint final rule representing the first substantive federal action to limit emissions of greenhouse gases ("GHGs"). 75 Fed. Reg. 25324 (May 7, 2010). The rule ("GHG Mobile Source Rule") establishes emissions standards for passenger cars and light trucks under section 202 of the FCAA, 42 U.S.C. § 7521, and corporate average fuel efficiency ("CAFE") standards under the Energy Policy and Conservation Act. The standards apply to 2012 and later model year vehicles and will require that fuel efficiency increase and GHG emissions decrease through 2016, by which time the projected combined car and truck fleet will need to achieve the equivalent of 35.5 miles per gallon.

✓ **Executive Order 13693 -** President Obama signed Executive Order 13693, Planning for Federal Sustainability in the Next Decade, in March 2015. This Executive Order focuses on reducing GHG emissions from Federal agencies by 40 percent over the next 10-year period. Federal agencies are required to propose percentage-reduction targets for GHG emissions by the fiscal year-end in 2025.

Various statewide and local initiatives to reduce California's contribution to GHG emissions (referenced below) have raised awareness that, even though the contributors to and consequences of global climate change are not yet fully understood, it is occurring. Every nation emits GHGs; therefore, global cooperation will be required to reduce the rate of GHG emissions. Currently, no state regulations have been adopted in California that establish ambient air quality standards for GHGs; however, California has passed legislation directing CARB to develop actions to reduce GHG emissions.

✓ **Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles** – On March 20, 2024, the EPA issued a final rule establishing more stringent standards for air pollutant emissions from light-duty and medium-duty vehicles beginning with model year 2027. Building on the federal greenhouse gas standards for passenger cars and light trucks for model years 2023 through 2026, the rule reflects advances in clean vehicle technology and is intended to improve public health, reduce smog, soot, and climate pollution, and lower fuel and maintenance costs. The standards will be phased in from model years 2027 through 2032.

State Agencies

- ✓ **California Air Resources Board (CARB) –** CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing its own air quality legislation called the CCAA, adopted in 1988. CARB was created in 1967 from the merging of the California Motor Vehicle Pollution Control Board and the Bureau of Air Sanitation and its Laboratory.

  CARB has primary responsibility in California for developing and implementing air pollution control plans designed to achieve and maintain the NAAQS established by the EPA. Whereas CARB has primary responsibility and produces a major part of the SIP for pollution sources statewide, it relies on the local air districts to provide additional strategies for sources under their jurisdiction. CARB combines its data with all local district data and submits the completed SIP to the EPA. The SIP consists of the emissions standards for vehicular sources and consumer products set by CARB, and attainment plans adopted by the Air Pollution Control Districts (APCDs) and Air Quality Management Districts (AQMDs) and approved by CARB.

State Regulations

- ✓ **California Strategy to Reduce Petroleum Dependence - Assembly Bill (AB 2076) -** The strategy, *Reducing California's Petroleum Dependence*, was adopted by the California Energy Commission (CEC) and the California Air Resources Board (CARB) in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and the Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and sport utility vehicles (SUVs); and increase the use of non-petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

- ✓ **AB 1493 (Pavley) -** AB 1493 (Pavley) enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light-duty trucks. Regulations adopted by CARB would apply to 2009 and later model year vehicles. CARB estimated that the regulation would reduce emissions of climate-changing pollutants from light-duty passenger vehicles by 18 percent in 2020 and 27 percent in 2030 [Association of Environmental Professionals (AEP) 2007]. In 2005, the CARB requested a waiver from the U.S. EPA to enforce the regulation, as required under the CAA. Although no waiver had ever been denied over a 40-year period, the then-Administrator of the EPA sent Governor Schwarzenegger a letter in December 2007 stating that he had denied the waiver. On March 6, 2008, the waiver denial was formally issued in the *Federal Register*. Governor Schwarzenegger and several other states immediately filed suit against the federal government to reverse that decision. On January 21, 2009, CARB requested that EPA reconsider the

denial of the waiver. EPA scheduled a re-hearing on March 5, 2009. On June 30, 2009, the EPA granted a waiver of CAA preemption to California for its greenhouse gas emission standards for motor vehicles beginning with the 2009 model year.

✓ **Energy: Planning and Forecasting, Senate Bill 1389 (SB 1389) -** Passed in 2002, SB 1389 requires the CEC to adopt and present to the Governor and Legislature a report of findings every two years. The Integrated Energy Policy Report makes recommendations to increase California's energy supplies, reduce energy demand, broaden the range of alternatives to conventional energy sources, and improve the State's energy delivery infrastructure.

In the 2006 Integrated Energy Policy Report Update, the CEC states that California's population is expected to grow by 20 million people between 2000 and 2050 and that this growth will strain California's energy and infrastructure system. The report was updated in 2008, 2010, 2012, 2014, and again in 2016. The 2016 update focused on a variety of energy issues, including:

- The role of transportation in meeting state climate, air quality, and energy goals.
- Report the status of the statewide plug-in electric vehicle infrastructure.
- Obstacles and opportunities for electric vehicle infrastructure deployment.
- Marketing effort of the Alternative and Renewable Fuel and Vehicle Technology Program investments.
- Connection with natural gas infrastructure and evaluation of methane emissions.
- The integration of environmental information in renewable energy planning processes.

✓ **Executive Order S-3-05 -** Governor Schwarzenegger established Executive Order S-3-05 in 2005. This Executive Order set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The executive order directed the Secretary of the California Environmental Protection Agency (Cal/EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the Governor and Legislature describing progress toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to address these impacts. To comply with the Executive Order, the Cal/EPA Secretary created the Climate Action Team (CAT), made up of members from various State agencies and commissions. The team released its first report in March 2006, which proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities, and through State incentive and regulatory programs.

- ✓ **AB 32 (California Global Warming Solutions Act of 2006) -** California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599), which established regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and established a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be achieved by enforcing a statewide cap on GHG emissions, phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

  AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions sufficient to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in larger, growing GHG sectors, such as transportation, than in sectors not anticipated to significantly increase emissions. Under AB 32, CARB was required to adopt regulations by January 1, 2011, to achieve reductions in GHGs to meet the 1990 emission cap by 2020.

  On December 11, 2008, CARB adopted its initial Scoping Plan, which serves as a roadmap for CARB's efforts to achieve the GHG reductions required by AB 32 through subsequently enacted regulations. CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan. The current plan has identified new policies and actions to accomplish the State's 2030 GHG limit.

- ✓ **California Global Warming Solutions Act of 2006: emissions limit**, or **SB 32**, expands on AB 32 by requiring California to reduce greenhouse gas (GHG) emissions to 40 percent below 1990 levels by 2030. The bill was authored by Senator Fran Pavley, co-authored by Assembly Member Eduardo Garcia, and signed into law on September 8, 2016, by Governor Edmund Gerald "Jerry" Brown Jr. SB 32 codifies the GHG reduction target established in Executive Order B-30-15. Covered greenhouse gases include carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons. The California Air Resources Board (CARB) is responsible for implementing the law. Its provisions were added to Section 38566 of the Health and Safety Code, and the law took effect on January 1, 2017. Whereas AB 32, authored by Senator Fran Pavley and Assembly Speaker Fabian

Nunez, required emissions to return to 1990 levels by 2020, SB 32 extends that framework by establishing an interim 2030 target between the 2020 goal and the 2050 target set by Executive Order S-3-05.

- ✓ **AB 1007 -** AB 1007 (Pavley, Chapter 371, Statutes of 2005) directed the CEC to prepare a plan to increase the use of alternative fuels in California. As a result, the CEC prepared the State Alternative Fuels Plan in consultation with the state, federal, and local agencies. The plan presents strategies and actions that California must take to increase the use of alternative non-petroleum fuels while minimizing costs to California and maximizing the economic benefits of in-state production. The Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals of reducing petroleum consumption, increasing alternative fuel use, reducing greenhouse gas emissions, and increasing in-state biofuel production without causing significant degradation of public health and environmental quality.

- ✓ **Bioenergy Action Plan – Executive Order #S-06-06 -** Executive Order #S-06-06 establishes targets for the use and production of biofuels and biopower and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following targets to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce at least 20 percent of its biofuels in California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for biomass electricity use.

- ✓ **Executive Order S-1-07 -** Executive Order S-1-07, which was signed by Governor Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, generating more than 40 percent of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent by 2020. This order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure to meet the mandates in AB 32. On April 23, 2009, CARB approved the proposed regulation to implement the LCFS. The LCFS will reduce GHG emissions from the transportation sector in California by about 16 MMT in 2020, and is designed to reduce California's dependence on petroleum, create a lasting market for clean transportation technology, and stimulate the production and use of alternative, low-carbon fuels. The LCFS is designed to provide a durable framework that uses market mechanisms to spur the steady introduction of lower-carbon fuels. This framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. One standard is established for gasoline and the alternative fuels that can replace it. A second similar standard applies to diesel fuel and its replacements.

  The standards are "back-loaded," meaning that more reductions are required in the last five years than in the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery

electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the LCFS will be achieved through a combination of strategies, including lower-carbon fuels and more efficient, advanced-technology vehicles.

- ✓ **Climate Action Program at Caltrans -** The California Department of Transportation, Business, Transportation, and Housing Agency, prepared a Climate Action Program in response to new regulatory directives. The goal of the Climate Action Program is to promote clean, energy-efficient transportation and to provide guidance on mainstreaming energy and climate change issues into business operations. The overall approach to lower fuel consumption and CO_2 from transportation is twofold: (1) reduce congestion and improve efficiency of transportation systems through smart land use, operational improvements, and Intelligent Transportation Systems; and (2) institutionalize energy efficiency and GHG emission reduction measures and technology into planning, project development, operations, and maintenance of transportation facilities, fleets, buildings, and equipment.

  The reasoning underlying the Climate Action Program is the conclusion that "the most effective approach to addressing GHG reduction, in the short-to-medium term, is strong technology policy and market mechanisms to encourage innovations. Rapid development and availability of alternative fuels and vehicles, increased efficiency in new cars and trucks (light and heavy duty), and super clean fuels are the most direct approach to reducing GHG emissions from motor vehicles (emission performance standards and fuel or carbon performance standards)."

- ✓ **SB 97 -** SB 97, signed August 2007 (Chapter 185, Statutes of 2007; PRC Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions (or the effects of GHG emissions), as required by CEQA, by July 1, 2009. The Resources Agency was required to certify and adopt those guidelines by January 1, 2010. SB 97 also removed, both retroactively and prospectively, the legitimacy of litigation alleging inadequate CEQA analysis of effects of GHG emissions in the environmental review of projects funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006 or the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1B or 1E). This provision was repealed by operation of law on January 1, 2010; at that time, any such projects that remained unapproved would no longer be protected against litigation alleging failure to adequately address climate change issues. In the future, this bill will only protect a handful of public agencies from CEQA challenges on certain types of projects, and only for a few years.

  As set forth more fully below, in June 2008, the Office of Planning and Research (OPR) published a technical advisory recommending that CEQA lead agencies make a good-faith effort to estimate the quantity of GHG emissions a proposed project would generate. Specifically, based on available information, CEQA lead agencies should estimate the emissions associated with project-related

vehicular traffic, energy consumption, water usage, and construction activities to determine whether project-level or cumulative impacts could occur, and should mitigate the impacts where feasible (Governor's Office of Planning and Research, 2008*)*. OPR requested that CARB technical staff recommend a method for setting CEQA significance thresholds, as described in Section 15064.7 of the CEQA Guidelines, to encourage consistency and uniformity in CEQA analysis of GHG emissions throughout the State.

Senate Bill 97 (Chapter 185, 2007) required OPR to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. OPR prepared its recommended amendments to the State CEQA Guidelines to provide public agencies with guidance on analyzing and mitigating greenhouse gas emissions and their effects in draft CEQA documents. The Amendments became effective on March 18, 2010.

- ✓ **SB 375 -** SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt an SCS or alternative planning strategy (APS) that will prescribe land use allocation in that MPO's Regional Transportation Plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years, but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding.

  This law also extends the minimum duration of the regional housing needs allocation cycle from 5 to 8 years for local governments within an MPO that meets certain requirements. Provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

- ✓ **California Renewable Portfolios Standard (RPS), SB 1078 -** SB 1078 (Stats. 2002, Ch. 516) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide 20 percent of their supply from renewable sources by 2017, but later moved forward by SB 1078 to require compliance by 2010. In addition, providers subject to the RPS must increase their renewable energy share by at least 1% each year. In 2011, Governor Brown signed the California Renewable Energy Resources Act of 2011, also known as Senate Bill 2 (Stats. 2011, 1st Ex. Sess., Ch. 1; SB X1-2), which applies renewable energy standards to all energy providers and requires a 33 percent renewable mix by 2020.

- ✓ **California Climate Action Registry General Reporting Protocol -** The California Climate Action Registry (CCAR) was established in 2001 by SB 1771 and SB 527 (Chapter 1018, Statutes of 2000, and Chapter

769, Statutes of 2001, respectively) as a nonprofit voluntary registry for GHG emissions. The purpose of the CCAR is to help companies and organizations operating in the State establish GHG emissions baselines against which future GHG emissions reduction requirements may be applied. CCAR has developed a general protocol and additional industry-specific protocols that provide guidance on how to inventory GHG emissions for participation in the registry.

This protocol provides the principles, approach, methodology, and procedures required for participation in CCAR. It is designed to support the complete, transparent, and accurate reporting of an organization's GHG emissions inventory while minimizing the reporting burden and maximizing the benefits of quantifying the connection between fossil fuel consumption, electricity use, and GHG emissions. The most updated version of this protocol was prepared in April 2008. All cabinet-level state agencies and departments have joined the CCAR. Membership in the CCAR means that all members of the Governor's Cabinet will report their GHG emissions annually.

- ✓ **California Code of Regulations Title 24 -** Although not originally intended to reduce greenhouse gas emissions, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The GHG emission inventory was based on Title 24 standards as of October 2005; however, Title 24 has been updated as of 2008. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in greenhouse gas emissions. Therefore, increased energy efficiency results in decreased greenhouse gas emissions.

- ✓ **CAPCOA January 2008 CEQA and Climate Change -** In January 2008, the California Air Pollution Control Officers Association (CAPCOA) issued a "white paper" on evaluating GHG emissions under CEQA. The CAPCOA white paper strategies are not guidelines and have not been adopted by any regulatory agency; rather, the paper is offered as a resource to assist lead agencies in considering climate change in environmental documents.

  The CAPCOA white paper addresses what constitutes new emissions, how baseline emissions should be established, what should be considered cumulatively considerable under CEQA, what a business-as-usual (BAU) scenario means, and whether an analysis should include life-cycle emissions. The CAPCOA white paper also contains a Climate Change Significance Criteria Flow Chart that proposes a tiered approach to determining significance under CEQA. The flow chart would consider a proposed plan's impact to be less than significant if a General Plan for the project area exists that is in compliance with AB 32 (showing that GHG emissions for 2020 would be less than 1990 emissions for the plan area). The flow chart would consider a proposed project's impact to be significant unless one of the following can be demonstrated:

- The project is exempt under SB 97.
- The project is on the "Green List" (a list of projects deemed a positive contribution to California's efforts to reduce GHG emissions). A General Plan for the project area exists and is in compliance with AB 32.
- GHG emissions are analyzed and mitigated to less-than-significant.

The CAPCOA white paper considers GHG impacts to be exclusively cumulative impacts.

✓ **CARB Climate Change Proposed Scoping Plan -** In accordance with AB 32, CARB developed the 2008 Scoping Plan to outline the State's strategy to achieve 1990 level emissions by the year 2020. To estimate the necessary reductions, CARB projected statewide 2020 BAU GHG emissions (i.e., emissions in the absence of statewide emission-reduction measures). CARB found that the State as a whole would need to reduce GHG emissions by 28.5 percent from the 2020 BAU to achieve the targets of AB 32. The GHG emissions forecast was updated as part of the First Update to the Scoping Plan. In the First Update to the Scoping Plan, CARB projected that statewide BAU emissions in 2020 would be approximately 509 million MTCO2e. Therefore, to achieve the AB 32 target of 431 million MTCO2e (i.e., 1990 emissions levels) by 2020, the State would need to reduce emissions by 78 million MTCO2e relative to BAU, a 15.3 percent reduction from BAU in 2020. Several statewide strategies to reduce GHG emissions are identified in the 2008 Scoping Plan and would ensure the State is on target to achieve the GHG emissions reduction goals of AB 32.

Statewide GHG emissions-reduction measures being implemented would apply to future development and vehicle travel allowed under the updated Comp Plan, thereby reducing the Region's future GHG emissions. As described in the 2014 First Update to the Scoping Plan, as California continues to build its climate policy framework, there is a need for local government climate action planning to adopt mid-term and long-term reduction targets that are consistent with scientific assessments and the statewide goal of reducing emissions 80 percent below 1990 levels by 2050.

CARB states that local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory set by statewide goals. CARB has completed the 2030 Target Scoping Plan Update to address the new interim 2030 GHG reduction target under SB 32, set at 40 percent below 1990 levels (November 2017). The California Air Resources Board (CARB) is responsible for ensuring that California meets this goal. The bill went into effect on January 1, 2017.

The 2030 Target Scoping Plan update focuses on statewide strategies to achieve the GHG reductions required under SB 32 for 2030, a 40 percent reduction from 1990 levels. There are no legislative targets or plans being prepared to address the GHG reductions needed to achieve the long-term 2050 GHG goal identified in Executive Order S-03-05, as it is not a State legislative target. Consequently,

consistency with statewide GHG reduction strategies focuses on alignment with plans adopted to achieve the legislative target for 2020 established under AB 32 and outlined in the Scoping Plan.

- ✓ **2013 Zero Emission Vehicle Action Plan -** Governor Brown issued Executive Order B-16-2012 in 2012, which calls for the rapid commercialization of zero emission vehicles (ZEV). The goal of this Executive Order is to have 1.5 million ZEVs on California's roads by 2025. The order targets the transportation sector and calls for a reduction of GHG emissions to 80 percent below 1990 levels by 2020.

- ✓ **Senate Bill 743 (SB 743)** - On September 27, 2013, Governor Brown signed Senate Bill 743 (Steinberg, 2013). Among other things, SB 743 establishes a process for changing the analysis of transportation impacts under CEQA. Currently, environmental review of transportation impacts focuses on the delay that vehicles experience at intersections and on roadway segments. That delay is measured using a metric known as "level of service," or LOS. Mitigation for increased delay often involves increasing capacity (i.e., the width of a roadway or size of an intersection), which may increase auto use and emissions and discourage alternative forms of transportation. Under SB 743, the focus of transportation analysis will shift from driver delay to reducing greenhouse gas emissions, creating multimodal networks, and promoting a mix of land uses.

  Specifically, SB 743 requires the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines (Title 14 of the California Code of Regulations sections and following) to provide an alternative to LOS for evaluating transportation impacts. Particularly within areas served by transit, those alternative criteria must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses". Measurements of transportation impacts may include "vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated". OPR also has discretion to develop alternative criteria for areas that are not served by transit, if appropriate.

  At the time of preparation of this Draft EIR, SB 743 had not yet been adopted into CEQA. In November 2017, OPR developed final guidelines for implementing SB 743 and sent them to the Natural Resources Agency for adoption. A formal adoption process is currently underway. OPR's guidelines recommend a target date of January 1, 2020, for statewide implementation of SB 743.

- ✓ **Senate Bill 350 (SB 350)** - SB 350, adopted in 2015, supports GHG emissions from the electric sector through various measures. These measures include doubling statewide energy-efficiency savings for retail customers in electricity and natural gas by 2030 and requiring a 50% renewables portfolio standard for electricity providers by 2030.

- ✓ **Cap-and-Invest Program** – The Cap-and-Invest Program (formerly Cap-and-Trade) requires power plants, refineries, and other large facilities to buy and sell greenhouse gas emissions allowances to comply with CARB's statewide emissions limits. The program sets a declining cap on major GHG

sources in California and creates a strong incentive to invest in cleaner, more efficient technologies. It covers emissions sources responsible for approximately 80 percent of the State's GHG emissions.

- ✓ **Executive Order B-30-15 -** Executive Order B-30-15, which was signed by Governor Brown in 2016, establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. Executive Order B-30-15 requires MPO's to implement measures that will achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reduction targets.

- ✓ **Senate Bill 1383 (SB 1383) –** SB 1383, adopted in 2016, requires approval and implementation of a comprehensive strategy to reduce emissions of short-lived climate pollutants by CARB. SB 1383 mandates the strategy to set the following targets for the year 2030:

  - Methane – 40% below 2013 levels
  - Hydrofluorocarbons – 40% below 2013 levels
  - Anthropogenic black carbon – 50% below 2013 levels

  SB 1383 also mandates that CalRecycle adopt regulations to achieve the specified targets for reducing organic waste in landfills.

- ✓ **SB 1: Transportation Funding -** SB 1, the Road Repair and Accountability Act of 2017, was signed into law on April 28, 2017. This legislative package invests $54 billion over the next decade to fix roads, freeways, and bridges in communities across California and puts more dollars toward transit and safety. These funds will be split equally between state and local investments. Implementation: SB 1's investment in transportation is split equally between the state and cities and counties. The cities and counties will receive $26 billion, and the state highway system will receive $26 billion as well. Investing to Meet Needs: SB 1 provides support for state and local systems to meet four critical needs: Congestion Relief, Trade Corridor Improvements, Improved Transit/Rail Travel, and Pedestrian/Cyclist Safety Projects. Transportation Future: By 2027, Caltrans will repair or replace 17,000 miles of pavement, 55,000 culverts or drains, 7,700 signals, signs, and sensors, and 500 bridges.

  http://rebuildingca.ca.gov/

Regional

- ✓ **San Joaquin Valley Air Pollution Control District**

  To assist Lead Agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project specific greenhouse gas emissions (GHG) on global climate change, the San Joaquin Valley Air Pollution Control District (SJVAPCD) has adopted the guidance: *Guidance*

for Valley Land use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA and the policy: *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. The guidance and policy rely on performance-based standards, also known as Best Performance Standards (BPS), to assess the significance of project-specific greenhouse gas emissions to global climate change during the environmental review process, as required by CEQA. Use of BPS is a method for streamlining the CEQA process for determining significance and is not a required emission-reduction measure. Projects implementing BPS would be found to have a less-than-cumulatively significant impact. Otherwise, a demonstration of a 29 percent reduction in GHG emissions from business-as-usual is required to determine that a project would have a less-than-cumulatively significant impact. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining the significance of project-related impacts on global climate change.

Environmental Setting

Climate change refers to any significant change in climate measures (such as temperature, precipitation, or wind) that lasts for an extended period (decades or longer). Global Climate Change (GCC) refers to a shift in Earth's climate that occurs naturally, such as during an ice age. According to the California Air Resources Board (CARB), the climate change that is occurring today differs from previous climate changes in both time and scale.

Gases that trap heat in the atmosphere are regularly called greenhouse gases (GHGs). The Earth's surface temperature would be about 61 degrees Fahrenheit colder than it is currently if it were not for the innate heat-trapping effect of GHGs. The buildup of these gases in the Earth's atmosphere is considered the source of the observed increase in the Earth's temperature (global warming). Some greenhouse gases, such as carbon dioxide, occur naturally and are emitted into the atmosphere through natural processes and some anthropogenic activities. Other GHGs (e.g., fluorinated gases) are created and emitted solely through human activities.

Since the Industrial Revolution (circa 1750), global concentrations of carbon dioxide (CO_2) have risen about 36%, chiefly due to the burning of fossil fuels. Questions remain about the amount and rate of warming, and how it will affect the rest of the climate system, including weather events.

The IPCC of the United Nations developed several GHG emission trajectories to stabilize global temperatures and mitigate climate change impacts. The IPCC concluded that a stabilization of GHGs at 400 to 450 parts per million (ppm) CO2-equivalent concentration is required to keep global mean warming below 3.6°F (2 °C). This is presumed necessary to avoid dangerous climate change (Association of Environmental Professionals, 2007).

State law defines greenhouse gases as any of the following compounds: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) (California Health and Safety Code Section 38505(g)). CO_2, followed by CH_4 and N_2O, are the most common GHGs that result from human activity. The characteristics of state-defined GHGs are described below:

- ✓ **Carbon dioxide** – CO_2 results from fossil fuel combustion in stationary and mobile sources. It contributes to the greenhouse effect, but not to stratospheric ozone depletion. In 2019, CO_2 accounted for approximately 83 percent of total GHG emissions in the State (CARB, 2018);

- ✓ **Methane** – CH_4 can also be divided into anthropogenic (i.e., resulting from human activities and/or processes) and natural sources. Anthropogenic sources include rice agriculture, livestock, landfills, waste treatment, some biomass burning, and fossil fuel combustion. Natural sources are wetlands, oceans, forests, fire, termites, and geological sources. In 2019, CH_4 accounted for approximately 9 percent of total GHG emissions in the State (CARB, 2026); and

- ✓ **Other regulated GHGs include Nitrous Oxide (N_20), Sulfur Hexafluoride (SF_6), Hydrofluorocarbons (HFC), and Perfluorocarbons (PFC)** - These gases all possess heat-trapping characteristics that are greater than CO_2. Emission sources of nitrous oxide gases include, but are not limited to, waste combustion, wastewater treatment, fossil fuel combustion, and fertilizer production. Because the volume of nitrous oxide emissions is small, their net effect relative to CO2 or CH4 is also relatively small. SF_6, HFC, and PFC emissions occur at even lower rates.

Over the last 200 years, human activities have released substantial quantities of GHGs into the atmosphere. These additional emissions are increasing atmospheric GHG concentrations and amplifying the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally occurring GHGs such as CO2, methane, and N2O, some gases, such as HFCs, PFCs, and SF6, are entirely new to the atmosphere.

Certain other gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for extended periods, contributing to long-term climate change. Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

Globally, climate change has the potential to affect numerous environmental resources through uncertain future changes in air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. A warming of about 0.2°C (0.36°F) per decade is projected, and there are clear signs that global warming is underway, including substantial ice loss in the Arctic.

It has become evident that human activities continue to affect Earth's energy budget. Observations of the atmosphere, land, oceans, and cryosphere have provided evidence of climate change, which is largely the result of human activities. The average global surface air temperatures over land and oceans have increased over the last 100 years, as discussed in detail in numerous IPCC publications, including "Climate Change 2013, The Physical Science Basis".

Climate change modeling indicates that further warming could occur, leading to additional changes in the global climate system during the current century. GHGs have the potential to affect the environment because such emissions are believed to contribute cumulatively to global climate change. Although GHG emissions from a single project will not, by themselves, cause global climate change, it is thought that GHG emissions from multiple projects worldwide, past, present, and future, may collectively have a cumulative impact on global climate change. It is predicted that global climate change will contribute to increased average temperatures and more intense heat waves; rising sea levels, which can inundate low-lying areas; changes in precipitation patterns, which could affect water supply; increased risk of wildfire; impacts on habitat and other biological resources; and other unknown effects.

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with construction activities and the operation of passenger, public transit, and commercial vehicles results in GHG emissions that cause global climate change. In addition, alternative fuels like natural gas, including Compressed Natural Gas (CNG) and liquefied natural gas (LNG), ethanol, and electricity (unless derived from solar, wind, nuclear, or another energy source that does not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

Changes in California's climate and ecosystems are occurring at a time when the State's population is expected to increase from 40 to 44 million by 2046, according to the California State Department of Finance. As such, the number of people potentially affected by climate change, as well as the amount of anthropogenic GHG emissions expected under a "business as usual" scenario, is expected to increase. Climate models indicate that temperatures in California may rise by 4.7°F to 10.5°F by the end of the century if GHG emissions continue to proceed at a medium or high rate (CEC, 2006). Lower emission rates would reduce the projected warming to 3.0°F to 5.6° Fahrenheit. Almost all climate scenarios include a continuing trend of warming through the end of the century, given the amounts of GHGs already released and the difficulties of reducing emissions to a level that would stabilize the climate. Total GHG emissions in California have been estimated by CARB, which found that 360.4 MMT of CO2E were produced in 2023. CARB also found that transportation accounted for 38 percent of the State's GHG emissions, followed by industrial sources at 22 percent and electricity generation at 12 percent.

The IPCC was established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical, and socioeconomic information to further understand climate change, its potential impacts, and options for adaptation and mitigation. The IPCC projects global

temperature increases of 1.1 to 6.4 degrees Celsius, depending on the scenario considered. This may impact California's natural environment in the following ways:

- ✓ Rising sea levels along the California coastline, particularly in the San Francisco Bay Area and within the San Joaquin Delta, are due to ocean expansion.
- ✓ Extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent.
- ✓ An increase in heat-related human deaths, infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality.
- ✓ Reduced snowpack and stream flow in the Sierra Nevada mountains, affecting winter recreation and water supplies.
- ✓ Potential increases in the severity of winter storms, affecting peak stream flows and flooding.
- ✓ Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield.
- ✓ Changes in the distribution of plant and wildlife species because of changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.
- ✓ Increases in the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21st century.
- ✓ High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.

The State of California GHG Inventory, performed by CARB, compiled statewide human sources of GHG emissions. It includes estimates for carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons. The current inventory covers the years 2000, 2005, 2010, 2015, 2020, 2021, 2022, and 2023 and is summarized in Table 3-46. When accounting for GHGs, all types of emissions are expressed in CO2 equivalents (CO2E) and typically quantified in metric tons (MT) or millions of metric tons (MMT). Data sources used to calculate this GHG inventory include California state and federal agencies, international organizations, and industry associations. The calculation methodologies are consistent with IPCC guidance. The 2000 emissions level is the sum total of emissions from all sources across all sectors and categories in the inventory. The inventory is divided into six (6)

broad sectors and categories. These sectors include agriculture, commercial, electricity power, industrial, residential, and transportation. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices and landfills, among other sources. Sinks of carbon dioxide include uptake by vegetation and dissolution into the ocean.

TABLE 3-46
State of California GHG Inventory (2000-2023)

Economic Sector	Greenhouse Gas Emissions ($MMTCO_2e$)								% of Total	% of Total	% Change in Emission	
	2000	2005	2010	2015	2020	2021	2022	2023	in 2000	in 2023	2000-2023	2022-2023
Agriculture & Forestry	32.33	33.76	33.71	32.92	31.52	30.67	30.12	29.24	7.0%	8.1%	-9.6%	-2.9%
Commercial	15.04	16.10	20.42	22.62	22.67	23.35	23.83	23.47	3.3%	6.5%	56.0%	-1.5%
Electricity Power	105.31	108.23	90.60	86.41	59.74	62.52	59.86	57.34	23.0%	15.9%	-45.5%	-4.2%
Industrial	94.99	96.05	92.35	91.38	82.60	82.47	81.44	78.44	20.7%	21.8%	-17.4%	-3.7%
Residential	31.65	30.38	32.15	27.95	33.31	32.66	32.52	34.73	6.9%	9.6%	9.7%	6.8%
Transportation	179.39	186.97	167.02	165.64	139.57	149.18	143.81	137.19	39.1%	38.1%	-23.5%	-4.6%
Total Emissions	**458.7**	**471.5**	**436.2**	**426.9**	**369.4**	**380.8**	**371.6**	**360.4**	--	--	**-21.4%**	**-3.0%**

Source: CARB Greenhouse Gas Inventory

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Criteria for Significance

As with any environmental impact, lead agencies must determine what constitutes a significant impact. In the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a "significant impact", individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice. The potential effects of a project may be individually limited but cumulatively significant. Lead agencies should not dismiss a proposed project's direct and/or indirect climate change impacts without careful consideration, supported by substantial evidence. Although climate change is ultimately a cumulative effect, not every individual project that emits GHGs necessarily contributes significantly to the cumulative impact on the environment. CEQA authorizes reliance on previously approved plans and mitigation programs that have adequately analyzed and mitigated GHG emissions to a less-than-significant level to avoid or substantially reduce a project's cumulative impact, and encourages reliance on other Environmental Impact Reports that discuss greenhouse gases and tier to them.

As described previously, the State Legislature and the global scientific community have found that global climate change poses significant adverse effects to the environment of California and the entire world. To mitigate these adverse effects, the State Legislature enacted AB 32 and SB 32, which require statewide GHG reductions to 1990 levels by 2020 and 40 percent below 1990 levels by 2030.

AB 32, S-3-05, and SB 32 target the reduction of statewide emissions. It should be made clear that AB 32, S-3-05, and SB 32 do not specify that emissions reductions should be achieved through uniform reductions by geographic location or by emission-source characteristics. Consistency with AB 32, SB 32, and SB 375 will be used to assess the significance of greenhouse gas (GHG) emissions.

SB 375 requires that MCAG and other MPOs throughout California develop RTPs that include a preferred SCS scenario to achieve GHG emission targets set by CARB. The emission targets set for Merced County by CARB are to achieve a 10% reduction in GHG emissions between 2005 and 2020 and a 14% reduction between 2005 and 2035. The CARB SB 375 Implementation in the San Joaquin Valley document can be obtained from the following link:

https://ww2.arb.ca.gov/sites/default/files/2020-06/SB375_Updated_Final_Target_Staff_Report_2018.pdf

The following significance criteria were used to determine the level of significance of the impacts of transportation improvement projects or land uses proposed by the Project. Significance criteria were developed based on Appendix G of the State CEQA Guidelines. In general, an individual improvement project and new development project contained within the RTP/SCS would result in a significant GHG impact if it:

- ✓ Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- ✓ Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Methodology

Climate change is a significant, cumulative global impact that could also have a substantial effect on the natural environment of California and Merced County. The potential contribution of the 2026 RTP to this cumulative impact is discussed below.

State action on climate change is mandated by AB 32 and SB 32. MCAG, along with other regional planning agencies throughout the State, will be monitoring the progress of State agencies in developing approaches to address GHG emissions. As agreed-upon approaches for project-level CEQA analysis and transportation planning are established, MCAG expects climate change to be a key environmental consideration in future regional transportation planning. Both MCAG and responsible agencies implementing projects and future land use objectives outlined in the 2026 RTP/SCS will be required to adhere to any future applicable mandatory regulations regarding global warming resulting from the passage of AB 32 and SB 32.

Although the MPOs do not have land use authority to implement more compact and energy-efficient land use or to limit growth, the eight San Joaquin Valley Councils of Governments or County Transportation Commissions have prepared the San Joaquin Valley Blueprint and have each prepared, or are preparing, a preferred SCS scenario for inclusion in their 2026 RTP. The Blueprint process led to a preferred land use scenario separate from the local government general plan process. The agencies also prepared a Blueprint Implementation Plan, including a Toolkit available to local agencies throughout the Valley for use as they review development projects and prepare land use plans and policies.

The SJVAPCD provides a methodology for addressing greenhouse gas emissions from stationary sources and development projects *under the California Environmental Quality Act*. The methodology relies on performance-based standards applicable to projects that result in increased GHG emissions. The SJVAPCD notes that the use of performance-based standards is not a method of mitigating emissions; it is a method of determining the significance of project-specific GHG emission impacts using established specifications or project design elements, such as Best Performance Standards (BPS).

In the SJVAPCD's *Guidance for Valley Land Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA,* it states that projects implementing Best Performance Standards in accordance with the guidance would be determined to have a less than significant individual and cumulative impact on global climate change and would not require project-specific quantification of GHG emissions. Projects exempt from the requirements of CEQA, and projects complying with an approved GHG emission reduction plan or mitigation program, would also be determined to have a less than significant individual or cumulative impact. Projects not implementing BPS would require quantification of project-specific GHG emissions. To be determined to have a less than significant individual and cumulative impact on global climate change, such projects must be determined to have reduced or mitigated GHG emissions by 29%, consistent with GHG emission reduction targets established in ARB's AB 32 Scoping Plan. Furthermore, quantification of GHG emissions would be expected for all projects for which the lead agency has determined that an Environmental Impact Report (EIR) is required, regardless of whether the project incorporates Best Performance Standards.

While this methodology is appropriate for project-level analysis and may apply to individual RTP projects, it is not appropriate for program-level analysis. Instead, the analysis used for the 2026 RTP quantifies GHG emissions associated with the 2026 RTP/SCS. The 2026 EIR GHG analysis does not consider non-transportation-related GHG sources (e.g., industrial, commercial). Neither CEQA nor the CEQA Guidelines mentions or provides any methodology for analysis of "greenhouse gases," including CO_2, nor do they provide any numeric significance thresholds. However, the air quality model used to predict emissions rates of the criteria pollutants (EMFAC) can also model CO2 emissions. MCAG analyzed CO_2 emissions and fuel-consumption impacts from on-road travel resulting from the proposed 2026 RTP/SCS.

The impact assessment for GHG emissions focuses on the potential effects the Project (2026 RTP/SCS) might have on GHG emissions within the Merced Region. The assessment is not site or individual improvement project-specific but is a "regional analysis".

Impact CC 3.6.1 - Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

The ultimate sources of increased transportation emissions in Merced County are population and employment growth, which will increase with or without projects referenced in the 2026 RTP and land use allocation represented in the SCS. MCAG does not implement land use policy in Merced County; rather, this is under the jurisdiction of the County and the various cities. Decisions about the place, pace, and scale of growth and development are reflected in the general plans and project approvals adopted by the local agencies. The 2026 RTP/SCS is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2026 RTP/SCS on transportation emissions is not to increase the amount of travel per se, but rather to influence where and how travel occurs within and through the County.

MCAG's ability to address and mitigate climate change impacts is limited primarily to policy and funding decisions related to planned roadway and alternative transportation improvements. As described above, the combustion of fossil fuels during vehicle operations is one of the primary sources of GHG emissions in California. GHG emissions also result from the carbon dioxide, methane, and nitrous oxide released during the combustion of gasoline and diesel fuel in construction equipment, vehicles, buses, trucks, and trains, and from the use of natural gas to power transit buses and other vehicles. As discussed previously, historical and current global GHG emissions are known by the State and the global scientific community to be causing global climate change, and future increases in GHG emissions associated with the proposed RTP/SCS could exacerbate climate change and contribute to the significant adverse environmental effects described previously. Furthermore, increased GHG emissions associated with the proposed RTP/SCS could affect the State's implementation of the mandatory requirements under AB 32 and SB 32 to reduce statewide GHG emissions to 1990 levels by 2020 and to 40 percent below 1990 levels by 2030.

- ✓ **CO_2 Emissions**

  Emissions associated with the 2026 RTP/SCS can be divided into two categories: passenger transportation associated with light-duty trucks and automobiles (LDTA), and goods movement by truck. Consistency with AB 32 will be evaluated by reviewing the Scoping Plan[1] and assessing whether the actions in the 2026 RTP/SCS will impede its implementation. This will be done individually for the LDTA and Goods Movement categories. The Goods Movement category within the 2026 RTP/SCS comprises emissions from goods movement by truck. The Goods Movement category in the Scoping

[1] http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf

Plan also includes the transportation of goods by vessel, but these categories are not affected by the 2026 RTP/SCS.

✓ **Light Duty Trucks and Autos:** For LDTA, there are three measures listed in the Scoping Plan. They are:

1. Low Carbon Fuel Standard (LCFS)
2. Pavley Greenhouse Gas Vehicle Standards
3. Regional Transportation-Related GHG Targets

The 2026 RTP/SCS will not impact the implementation of the LCFS and the Pavley fuel efficiency standards. The Regional Transportation-Related GHG targets are implemented through SB 375, which establishes mechanisms to develop regional targets for reducing LDTA greenhouse gas emissions. Through the SB 375 process, regions will work to integrate development patterns with the transportation network to reduce greenhouse gas emissions while meeting housing needs and other regional planning objectives.

SB 375 required CARB, in consultation with MPOs, to develop passenger-vehicle greenhouse-gas emissions-reduction targets for 2020 and 2035. MCAG evaluated the 2026 RTP/SCS for consistency with SB 375 draft targets (Year 2035) to assess the significance of GHG emissions. Updated SB 375 targets for each region were published by the CARB in February 2018. The GHG targets for MPOs within the San Joaquin Valley were set at 10% of 2005 GHG emissions for 2020 and 14% for 2035, excluding emission reductions expected from the Pavley GHG Vehicle Standards and the LCFS. CO_2 emissions were projected for 2005 and 2035.

As shown in Table 3-47, the GHG emissions for 2035 with Scenario C (Project) are 17% (2035) lower than the GHG emissions level of 2005, exclusive of the savings expected from the Pavley GHG Vehicle Standards and the LCFS. As a result, the RTP would meet CARB per capita emission targets set pursuant to SB 375. Table 3-47 also shows that per capita VMT decreases by 33% in 2035.

TABLE 3-47
Future VMT and GHG Emissions

Year	Pounds per Capita GHG Emissions[1]	% Change from 2005 EF11 adjusted	VMT Per Capita	% Change from 2005
2005	13.4	--	18.9	--
2035	11.1	-17%	12.6	-33%

1: Total CO2 Emissions
Source: MCAG, 2026

Goods Movement: The Goods Movement category includes the following measures in the Scoping Plan:

1. Ship Electrification at Ports (not applicable in Fresno County)
2. System-Wide Efficiency Improvements
3. Heavy-Duty Vehicle Greenhouse Gas Emission Reduction (Aerodynamic Efficiency)
4. Medium- and Heavy-Duty Vehicle Hybridization

Medium- and heavy-duty on-road goods-movement emissions were quantified using EMFAC2021. GHG emissions results for medium and heavy-duty trucks can be found in Table 3-48.

TABLE 3-48

GHG Emissions[1] (Goods Movement)

(Tons/Day)

Year	Total Emissions
2023	1,262.0
2035	1,035.0
2049	1,109.0

Source: VRPA/EMFAC 2021

As shown in Table 3-48, GHG emissions decrease from 2023 to 2049 for medium-duty and heavy-duty trucks. These emissions calculations do not reflect emissions reductions attributable to the Goods Movement Emissions Reduction Plan or non-regulatory reductions achieved from the implementation of the Goods Movement portion of Proposition 1B (2006). Implementation of the Goods Movement Emissions Reduction Plan and the 2007 State Implementation Plan will lead to further emissions reductions consistent with the AB 32 scoping plan for the goods movement sector. The 2026 RTP/SCS does not hinder the implementation of these plans, and therefore, emissions reductions are anticipated to be consistent with the goals of AB 32 and SB 32.

It is also important to note that emissions estimates contained within CARB's Goods Movement Emissions Reductions Plan from the goods movement sectors continue to grow in the future. As indicated in the Goods Movement Reductions Plan, regulatory actions are and will remain the framework for emissions reductions. The 2026 RTP/SCS does not interfere with the implementation of CARB regulatory actions.

The Goods Movement Emissions Reduction Plan (required by Proposition 1B) and the 2007 State Implementation Plan contain numerous measures designed to reduce the public health impact of goods movement in California. The SJVAPCD has been awarded Prop 1B funding for heavy-duty truck replacement and retrofit projects. Emissions reductions resulting from these projects are outside the scope of the RTP/SCS because the availability and extent of engine retrofits are site- and project-specific issues; therefore, MCAG has not assumed any reduction in potential RTP impacts resulting from potential project-level retrofits. However, significant reductions resulting from this measure are not expected, even at the project level.

✓ **Population Growth**

Between 2010 and 2023, Merced County and its incorporated cities have experienced a wide range of development and population growth. Over the next 23 years, the Merced region will continue to grow rapidly. Between 2023 and 2049, MCAG projects a total employment growth of 17,040 in Merced County. This will accompany a population increase in the County of 45,595 persons between 2023 and 2049, a 16 percent increase over the 27-year period. In 2049, the estimated total population for Merced County is 330,788 persons. Table 3-49 presents the population estimates and projections from 2023 through 2049.

GHG emissions associated with implementation of the proposed RTP/SCS are primarily related to a projected increase in Countywide VMT as a result of projected growth in the unincorporated areas of Merced County and the incorporated cities. As previously described, MCAG does not have land use authority within the County or the incorporated Cities. Therefore, MCAG's ability to mitigate climate change impacts in this EIR and the 2026 RTP update is largely limited to Smart Growth Incentives, a focus on the SCS for the 2026 RTP Update, and improvements in alternative modes of transportation that may reduce VMT per capita throughout the County.

The State of California GHG Inventory, performed by CARB, compiled statewide human sources of GHG emissions. It includes estimates for carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons. Current inventory covering the years 2000 to 2023 is summarized above. When accounting for GHGs, all types of emissions are expressed in CO2 equivalents (CO2E) and typically quantified in metric tons (MT) or millions of metric tons (MMT). Data sources used to calculate this GHG inventory include California state and federal agencies, international organizations, and industry associations. There is no established methodology for estimating GHG emissions from planned use at a regional scale. However, using available resources, the MMT of GHG emissions for Merced County has been estimated in Table 3-50.

TABLE 3-49

Population of Merced County (2023 – 2049)

2026 RTP/SCS (Scenario C)

Year	Population	Households	Employment
2023	285,193	86,950	94,200
2030	301,452	96,699	102,290
2035	311,333	103,445	105,050
2049	330,788	117,995	111,240

Source: MCAG, 2026

TABLE 3-50

GHG Emissions by Sector

Economic Sector	Greenhouse Gas Emissions ($MMTCO_2e$)			
	2020	2023	2035	2049
Agriculture & Forestry	0.22	0.21	0.15	0.11
Commercial	0.16	0.17	0.12	0.09
Electricity Power	0.41	0.40	0.30	0.22
Industrial	0.57	0.55	0.41	0.30
Residential	0.23	0.25	0.18	0.13
Transportation	0.96	0.97	0.71	0.53

Source: VRPA, 2026

Mitigation Measures

The specific impacts on climate change will be evaluated as part of the implementing agencies' project-level environmental review process for their proposed transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage inclusion of the mitigation measures referenced below. In addition, a number of mitigation measures are included in Section 3.4 of the Draft EIR to address criteria emissions.

- ✓ **CC 3.6.1-1** MCAG shall update future Regional Transportation Plans (including Sustainable Community Strategies) to incorporate policies and measures that will lead to further reduced GHG emissions. Such policies and measures may be derived from the General Plans, local jurisdictions' Climate Action Plans (CAPs), and other adopted policies and plans of its member agencies that include GHG mitigation and adaptation measures or other sources.

- ✓ **CC 3.6.1-2** Local governments should adopt policies and develop practices that lead to GHG emission reductions. These activities will include, but are not limited to, providing technical assistance and information sharing on developing local Climate Action Plans.

- ✓ **CC 3.6.1-3** Implementing and local agencies should adopt and implement Climate Action Plans (CAPs, also known as Plans for the Reduction of Greenhouse Gas Emissions as described in State CEQA Guidelines Section 15183.5 Tiering and Streamlining the Analysis of Greenhouse Gas Emissions) that do the following:

  - Quantify GHG emissions, both existing and projected over a specified period, resulting from activities within each agency's jurisdiction;
  - Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;
  - Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within their respective jurisdictions;
  - Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
  - Establish a mechanism to monitor the plan's progress toward achieving that level and to require amendment if the plan is not achieving specified levels; and
  - Be adopted in a public process following environmental review.

  CAPs should, when appropriate, incorporate planning and land use measures from the California Attorney General's latest list of example policies to address climate change at both the plan and project levels. Specifically, at the plan level, land use plans can and should, when appropriate, incorporate planning and land use measures from the California Attorney General's latest list of example policies to address climate change, including, but not limited to, policies from the web page, such as:

  - Smart growth, jobs/housing balance, transit-oriented development, and infill development through land use designations, incentives and fees, zoning, and public-private partnerships.
  - Create transit, bicycle, and pedestrian connections through planning, funding, development requirements, incentives, and regional cooperation, and create disincentives for auto use.

- Energy and water-efficient buildings and landscaping through ordinances, development fees, incentives, project timing, prioritization, and other implementing tools.
- In addition, implementing and local agencies should incorporate, as appropriate, policies to encourage implementation of the Attorney General's list of project-specific mitigation measures.

In addition, CAPs should also incorporate analysis of climate change adaptation, in recognition of the likely and potential effects of climate change in the future regardless of the level of mitigation and in conjunction with Executive Order S-13-08, which seeks to enhance the state's management of climate impacts including sea level rise, increased temperatures, shifting precipitation, and extreme weather events by facilitating the development of state's first climate adaptation strategy.

✓ **CC 3.6.1-4** MCAG shall continue to work closely with its member agencies to help them participate in the statewide Active Transportation Program (ATP).

✓ **CC 3.6.1-5** Project Level Environmental Documents

Project-level environmental documents shall analyze construction, maintenance, and land use development project Greenhouse Gas (GHG) emissions.

✓ **CC 3.6.1-6** Off-Model Reduction Strategies

MCAG will work with other affected and responsible agencies to implement the following strategies that are quantified "off-model":

- Regional electric vehicle (EV) charging infrastructure programs.
- Active transportation projects.
- Vanpool program expansion.
- Rideshare programs.
- Rule 9410 Employer Trip Reductions.
- ITS and other TSM projects.

✓ **CC 3.6.1-7** Short-Range Improvement Plan - *Air Quality Measures*

The Short-Range Improvement Plan outlines actions to reduce air emissions between 2026 and 2026. As indicated in the needs assessment sections of the RTP/SCS, the majority of short-term measures improving air quality are related to system, demand, and control management strategies. Local governments, MCAG, and other regional, state, and federal agencies should take the following actions to facilitate the implementation of strategies necessary to ensure that air quality standards are met:

- MCAG will continue to consult and coordinate with the other seven Valley MPOs and the SJVAPCD in providing focused/unified transportation/air quality planning.
- MCAG and the SJVAPCD will continue to coordinate/consult in activities aimed at achieving both federal and California air quality standards
- Designated responsible governments and agencies will identify and consider Transportation Demand Measures and Transportation Control Measures during State Implementation Plan (SIP) development and carried out where appropriate.
- MCAG will continue to support the SJVAPCD's efforts to integrate appropriate policies and implementation measures identified in the Air Quality Guidelines for General Plans into local general plans.
- MCAG, Merced County, and its 6 cities will encourage land use patterns that reduce automobile dependency, energy consumption, and support transit and other alternative modes.
- MCAG will encourage local transit agencies to replace aging fleets with alternative-fueled buses.
- MCAG and local transit agencies will support greater funding flexibility for bus purchases to promote the most energy-efficient models.
- MCAG, in cooperation with Caltrans, will promote park-and-ride lots and parking management strategies where appropriate.
- MCAG, Caltrans, cities, and the county support alternate fuel strategies to reduce petroleum fuels. Alternative fuel technology can have a significant impact on reducing petroleum-based fuel consumption.

✓ **CC 3.6.1-8** San Joaquin Valley Clean Transportation Center

The San Joaquin Valley Clean Transportation Center, which opened in January 2016, provided an additional advancement in clean energy education and the adoption of clean energy in both residential and business fleets. The Center provides a new regional resource to help improve air quality and reduce vehicle emissions. The Center has strong connections and relations with a national network of manufacturers, suppliers, and fleets to help improve the regional transportation system. Funding is provided by a California Energy Commission grant through CALSTART.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce increased transportation GHG emissions that contribute to climate change, it is likely that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the

implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Merced County is projected to grow by 45,595 persons between 2023 and 2049. MCAG has used the best available information to determine whether the 2026 RTP/SCS is consistent with the State's achievement of the AB 32 GHG emission reductions and addresses SB 375 mandates. Implementation of the mitigation measures described above will help reduce per capita VMT levels throughout Merced County, thereby helping meet the stated goals of AB 32 and the requirements set forth in SB 375. The 2026 RTP/SCS includes numerous projects, action items, funding priorities, a land use allocation to support an active transportation system, and programs to develop and improve alternative modes of transportation throughout the County. MCAG will continue to coordinate with local land use agencies to assist in developing plans and policies to reduce VMT.

GHG emissions for 2035 with the Project are 17% lower than the 2005 level, as indicated above. As a result, the RTP would meet ARB per capita emission targets set pursuant to SB 375. Mitigation measures presented above help reduce GHG emissions even further to the extent feasible, considering the requirements set forth in AB 32 and SB 375. Such measures will also assist in promoting and implementing Smart Growth and sustainable planning practices by the cities and the County, consistent with the SCS.

Impact CC 3.6.2 - Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

As noted previously, California passed the California Global Warming Solutions Act of 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. Under AB 32, CARB must adopt regulations by January 1, 2011, to achieve reductions in GHGs to meet the 1990 emission cap by 2020. On December 11, 2008, CARB adopted its initial Scoping Plan, which serves as a roadmap for CARB's efforts to achieve the GHG reductions required by AB 32 through subsequently enacted regulations. CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan.

In accordance with AB 32, CARB developed the 2008 Scoping Plan to outline the State's strategy to achieve 1990 level emissions by the year 2020. To estimate the necessary reductions, CARB projected statewide 2020 BAU GHG emissions (i.e., emissions in the absence of statewide emission-reduction measures). CARB found that the State as a whole would need to reduce GHG emissions by 28.5 percent from the 2020 BAU to achieve the targets of AB 32. The GHG emissions forecast was updated as part of the First Update to the Scoping Plan. In the First Update to the Scoping Plan, CARB projected that statewide BAU emissions in 2020 would be approximately 509 million MTCO2e. Therefore, to achieve the AB 32 target of 431 million MTCO2e (i.e., 1990 emissions levels) by 2020, the State would need to reduce emissions by 78 million MTCO2e relative to BAU, a 15.3 percent reduction from BAU in 2020. Several statewide strategies to reduce GHG emissions are identified in the 2008 Scoping Plan and would ensure the State is on target to achieve the GHG emissions reduction goals of AB 32.

Statewide GHG emissions-reduction measures being implemented would apply to future development and vehicle travel allowed under the updated Comp Plan, thereby reducing the Region's future GHG emissions. As described in the 2014 First Update to the Scoping Plan, as California continues to build its climate policy framework, there is a need for local government climate action planning to adopt mid-term and long-term reduction targets that are consistent with scientific assessments and the statewide goal of reducing emissions 80 percent below 1990 levels by 2050.

CARB states that local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory set by statewide goals. CARB has completed the 2030 Target Scoping Plan Update to address the new interim 2030 GHG reduction target under SB 32, set at 40 percent below 1990 levels (November 2017). The California Air Resources Board (CARB) is responsible for ensuring that California meets this goal. The bill went into effect on January 1, 2017.

The 2030 Target Scoping Plan update focuses on statewide strategies to achieve the GHG reductions required under SB 32 for 2030, a 40 percent reduction from 1990 levels. There are no legislative targets or plans being prepared to address the GHG reductions needed to achieve the long-term GHG goal for 2050 identified in Executive Order S-03-05 because it is not a State legislative target. Consequently, consistency with statewide GHG reduction strategies focuses on alignment with plans adopted to achieve the legislative target for 2020 established under AB 32 and outlined in the Scoping Plan.

SB 375 requires MPOs to adopt an SCS or APS that will prescribe land use allocation in that MPO's regional transportation plan. For the MCAG region, CARB set targets of a 10% per capita decrease in 2020 and a 14% per capita decrease in 2035, from a base year of 2005. As shown above, the GHG emissions for 2035 with the Project are 17% lower than the 2005 level, excluding the savings expected from the Pavley GHG Vehicle Standards and the LCFS. As a result, the RTP would meet ARB per capita emission targets set pursuant to SB 375.

Executive Order B-30-15 establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its 2050 target of reducing greenhouse gas emissions to 80 percent below 1990 levels. Executive Order B-30-15 requires MPO's to implement measures that will achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reduction targets.

✓ **Greenhouse Gas Reduction**

MCAG has used the best available information to determine whether the proposed RTP/SCS is consistent with the State's achievement of the AB 32 and SB 32 GHG emission reductions. In light of uncertainty in the regulatory and technological environment, the 2026 RTP/SCS incorporates all feasible mitigation measures identified below to reduce the proposed project's impacts on global climate change. This EIR also includes a requirement that RTP projects incorporate the SJVAPCD's Best

Performance Standards for reducing GHG. The RTP has also incorporated numerous policies, action items, and funding priorities to develop and improve alternative modes of transportation throughout the County and the incorporated cities in Merced County.

The measures included in the RTP are consistent with the GHG mitigation approaches outlined by the California Attorney General's Office in the May 21, 2008, report titled: *The California Environmental Quality Act, Addressing Global Warming Impacts at the Local Agency Level: Global Warming Measures.* The RTP incorporates measures such as smart growth, jobs/housing balance, and transit-oriented development, which are consistent with the Attorney General's recommendations. The mitigation measures outlined below, and the policies and action items included in the 2026 RTP update, such as the SCS and the analysis of GHG emissions from the Project, are also consistent with the 2017 Regional Transportation Plan Guidelines prepared by the California Transportation Commission, which address *SB 375 mandates.*

✓ **SJVAPCD Best Performance Standards (BPS)**

The SJVAPCD published *Guidance for Valley Land Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* in December 2009. This guidance document defines Best Performance Standards (BPS) as the most effective, in practice, means of reducing or limiting GHG emissions from a GHG source. The document includes BPSs for both traditional stationary source projects and development projects. For stationary sources, BPSs include equipment type, equipment design, and operational and maintenance practices for the identified service, operation, or emissions unit class and category. For development projects, BPS focuses on measures that improve energy efficiency and those that reduce vehicle miles traveled.

Mitigation Measures

✓ **CC 3.6.2-1** See Mitigation Measures for Impact 3.6.1.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce increased transportation GHG emissions that contribute to climate change, it is likely that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the

implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Merced County is projected to grow by 45,595 persons between 2023 and 2049. MCAG has used the best available information to determine whether the 2026 RTP/SCS is consistent with the State's achievement of the AB 32 GHG emission reductions and addresses SB 375 mandates. Implementation of the mitigation measures described above will assist in the reduction of per capita VMT levels throughout Merced County, which will assist in meeting the stated goals of AB 32 and requirements set forth in SB 375. The 2026 RTP/SCS includes numerous projects, action items, funding priorities, a land use allocation to support an active transportation system, and programs to develop and improve alternative modes of transportation throughout the County. MCAG will continue to coordinate with local land use agencies to assist in developing plans and policies to reduce VMT.

GHG emissions for 2035 with the Project are 17% lower than the 2005 level, as indicated above. As a result, the RTP would meet ARB per capita emission targets set pursuant to SB 375. Mitigation measures presented above help reduce GHG emissions even further to the extent feasible, considering the requirements set forth in AB 32 and SB 375. Such measures will also assist in promoting and implementing Smart Growth and sustainable planning practices by the cities and the County, consistent with the SCS.

3.7 CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES

The patterns of human occupation of the area now known as Merced County have left traces of their existence on the land. There are thousands of recorded archeological sites in the County, which are located in the foothills and mountains. Recorded prehistoric artifacts include village sites, campsites, bedrock milling stations, pictographs, petroglyphs, rock rings, sacred sites, and resource gathering areas.

Merced County also contains numerous potentially significant historical sites, including homesteads and ranches, a courthouse, cities, and routes.

This section describes the potential for significant archaeological and historic sites within Merced County and describes possible conflicts between these resources and the project. Data collected for this evaluation is derived from resource discussions from various project EIRs and from the State Office of Historic Preservation.

Regulatory Setting

Federal Regulations

Various federal laws, regulations, and guidelines specify how cultural resources must be managed for projects considered "federal undertakings" (per 36 CFR 800). These federal statutes and guidelines may be relevant to the proposed project if federal funding is used, federal permits or authorizations are required, or a project crosses land managed by a federal agency.

Among the most relevant federal laws and regulations are: the *National Historic Preservation Act of 1966* (NHPA), as amended; the *National Environmental Policy Act of 1969* (NEPA); the *Archaeological Resources Protection Act of 1979* (ARPA); the Advisory Council on Historic Preservation's regulations, *Protection of Historic Properties* (36 CFR 800), establishing procedures for compliance with Section 106 of the NHPA; the National Park Service (NPS) regulations, *National Register of Historic Places* (36 CFR 60); *Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (FR 190: 44716–44742); the *Native American Graves Protection and Repatriation Act of 1990* (PL 101–601, NAGPRA) and its implementing regulations (43 CFR 10); and the NPS regulations, *Curation of Federally-Owned and Administered Archaeological Collections* (36 CFR 79). Pertinent federal laws and regulations are summarized below.

- ✓ **National Historic Preservation Act of 1966** - Requires federal agencies to consider the preservation of historic and prehistoric resources. The Act authorizes the Secretary of the Interior to expand and

maintain the National Register of Historic Places (NRHP) and establishes the Advisory Council on Historic Preservation (ACHP) as an independent federal entity. Section 106 of the Act requires federal agencies to take into account the effects of their undertakings on historic properties and afford the ACHP a reasonable opportunity to comment on the undertaking prior to licensing or approving the expenditure of funds on any undertaking that may affect properties listed, or eligible for listing, in the NRHP.

- ✓ **Archaeological Resources Protection Act of 1979 (16 USC 470aa–470ll)** - Requires a permit for any excavation or removal of archaeological resources from public lands or Native American lands. The statute provides both civil and criminal penalties for violation of permit requirements and for excavation or removal of protected resources without a permit.

- ✓ **Advisory Council Regulations, Protection of Historic Properties (36 CFR 800) -** Establishes procedures for compliance with Section 106 of the National Historic Preservation Act of 1966. These regulations define the Criteria of Adverse Effect, define the role of State Historic Preservation Officer (SHPO) in the Section 106 review process, set forth documentation requirements, and describe procedures to be followed if significant historic properties are discovered during implementation of an undertaking. Prehistoric and historic resources deemed significant (i.e., eligible for listing in the National Register of Historic Places, per 36 CFR 60.4) must be considered in project planning and construction. The responsible federal agency must submit any proposed undertaking that may affect NRHP-eligible properties to the SHPO for review and comment prior to project approval.

- ✓ **Archaeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines (FR 190:44716–44742) -** Offers non-regulatory technical advice about the identification, evaluation, documentation, study, and other treatment of cultural resources. Notable in these Guidelines are the "Standards for Archaeological Documentation" (p. 44734) and "Professional Qualifications Standards for Archaeology" (pp. 44740–44741).

- ✓ **Federal Department of Transportation Act, Section 4(f) Requirements -** Historic and cultural resources are also protected under regulations of the Federal Department of Transportation Act of 1966. Section 4(f) of the Transportation Act requires a comprehensive evaluation of all environmental impacts resulting from federal-aid transportation projects administered by the Federal Highway Administration, Federal Transit Administration, and Federal Aviation Administration that involve the use - or interference with use - of several types of land:

  - Public parklands.
  - Recreation areas.
  - Wildlife and waterfowl refuges.

- 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.

If there is a feasible and prudent alternative, a proposed project using Section 4(f) lands cannot be approved by the Secretary. 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 within the Section 4(f) category are required only for project-level environmental assessments.

Applicable Policies and Regulations

- ✓ **Federal Antiquities Act of 1906 -** Establishes national monuments and reservations of lands that have historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal lands. It prohibits excavation or destruction of such antiquities unless a permit (Antiquities Permit) is obtained from the Secretary of the department that has jurisdiction over those lands.

- ✓ **Historic Sites Act of 1935 (HSA) -** The HSA *(16 USC 461-467)* became law on August 21, 1935, and declared that it is national policy to "Preserve for public use historic sites, buildings, and objects of national significance." The NHPA expanded the scope to include important State and local resources. The provisions of the NHPA established the National Register, maintained by the National Park Service; advisory councils on Historic Preservation; State Historic Preservation Offices; and grants-in-aid programs. Section 106 of the NHPA requires all federal agencies to consult the Advisory Council before continuing any activity affecting a property listed on or eligible for listing on the National Register. The Advisory Council has developed regulations for Section 106 to encourage coordination of agency cultural resource compliance requirements under Executive Order 11593 and NEPA with those of Section 106.

- ✓ **National Environmental Policy Act (NEPA) -** The National Environmental Policy Act (NEPA) provides general information on the effects of federally funded projects. The Act was implemented through regulations in the Code of Federal Regulations (40 CFR 6). The code requires careful consideration of the environmental impacts of federal actions or plans, including projects that receive federal funds.

The regulations address impacts on land uses and conflicts with State, regional, or local plans and policies, among others. They also require that NEPA-subject projects seek review to avoid or minimize the adverse effects of proposed actions and to restore and enhance environmental quality as much as possible.

- ✓ **Native American Graves Protection and Repatriation Act -** This act assigns ownership and control of Native American cultural items, human remains, and associated funerary objects to Native Americans. It also establishes requirements for the treatment of Native American human remains and sacred or cultural objects found on Federal land. This act further provides for the protection, inventory, and repatriation of Native American cultural items, human remains, and associated funerary objects. Museums that receive public funds must consult with Native Americans regarding museum collections of human remains, grave goods, and sacred items.

- ✓ **American Indian Religious Freedom Act -** This act mandates that the U.S. Government respect and protect the rights of Indian tribes to exercise religious practices freely. This act has been interpreted by the courts to require agencies to consider the effects of their actions on traditional religious practices.

- ✓ **Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR Part 68, 1995) -** The Secretary of the Interior's Standards for the Treatment of Historic Properties is regulatory for NPS Grants-in-Aid programs and is composed of four standards: Preservation, Rehabilitation, Restoration, and Reconstruction. It is a revised version of the Secretary of the Interior's Standards for Rehabilitation (36 CFR Part 67, 1990). It provides general guidance for work on all historic properties and has been adopted at the federal, State, and local levels.

- ✓ **National Register of Historic Places -** The National Register of Historic Places (NRHP) is the official listing of properties worthy of preservation for historical purposes. These properties are considered to tell stories that are important to local communities, citizens of a specific state, or the nation.

- ✓ **National Landmarks Program -** The National Landmarks Program is administered by the National Park Service. National Historic Landmarks tell important historical stories of the nation. All properties that are designated as National Historic Landmarks are included in the NRHP.

- ✓ **Archaeological and Historic Preservation Act of 1974 -** This act requires federal agencies to take the necessary steps to protect and preserve historical and archaeological data that could get lost or destroyed as a result of federally licensed activates and programs.

Federal Agencies

- ✓ **National Park Service (NPS)**
  The National Park Service manages all National Parks, many National Monuments, and other conservation and historical properties with various title designations. It also evaluates proposed historic sites and administers the National Register of Historic Places.

State Regulations

- ✓ **California Environmental Quality Act (CEQA) -** Under the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.; CEQA), a project 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. A historical resource is a resource that is either listed or eligible for listing in the California Register of Historical Resources, listed in a local registry, or determined to be significant by the lead agency. (See Section 5024.1 and Section 21084 of the Public Resources Code.) A resource eligible for listing on the California Register of Historical Resources (PRC 5024.1, Title 14 CCR, Section 4852) is a resource that:

  - Is associated with events or patterns of events that have made a significant contribution to the broad patterns of the history and cultural heritage of California and the United States.
  - Is associated with the lives of persons important to the nation or to California's past.
  - Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
  - Has yielded, or may be likely to yield, information important to the prehistory or history of the state and the nation.

  The fact that a resource is not listed in - or determined to be eligible for listing - in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in a historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be a historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1. The CEQA *Statutes and Guidelines* direct public agencies to avoid damaging effects on historical resources whenever feasible. If avoidance is not feasible, the importance of the resource must be evaluated using the criteria outlined in the Guidelines. Resources deemed unimportant under CEQA criteria do not require further discussion in the CEQA process. If the project could damage an important historical resource, it could significantly affect the environment. Direct impacts may occur by:

- Physically damaging, destroying, or altering all or part of the resource.
- Altering characteristics of the surrounding environment that contribute to the resource's significance.
- Neglecting the resource to the extent that it deteriorates or is destroyed. Indirect impacts primarily result from project-induced population growth. Such growth can result in increased construction as well as increased recreational activities that can disturb or destroy cultural resources, or
- The incidental discovery of cultural resources without proper notification.

CEQA provides guidelines for mitigating impacts to archaeological and historical resources in Section 15126.4. Achieving CEQA compliance for impacts on significant cultural resources requires developing a mitigation plan for the resource(s). Preservation in place is the preferred method for mitigating impacts on significant historical resources. If human remains are discovered in any location other than a dedicated cemetery, Section 7050.5(b) of the California Health and Safety Code also must be followed. CEQA was recently amended, setting forth new requirements to identify potential impacts to historic resources, considering requirements set forth in Assembly Bill 52 (Gallo, Chapter 532 of 2014) and Senate Bill 18 [reference Appendix B, Notice of Preparation (NOP) Comment Letters from the Native American Heritage Commission, dated April 28, 2017].

✓ **Senate Bill 18 (SB 18, 2004) –** As of March 1, 2005, Senate Bill 18 amended Section 815.3 of the Civil Code to determine that open space is included for the protection of California Native American historical, cultural, and sacred sites within the definition of ''local open-space plan'' for purposes of provisions governing the preparation of the open-space element of a city and county general plan. If a project involves the adoption of, or an amendment to, a general plan or a specific plan, or the designation or proposed designation of open space, it is subject to SB 18.

✓ **Public Resources Code Section 21080.3 (AB 52, 2014) –** Pursuant to Assembly Bill 52 (AB 52; codified at Public Resources Code Section 21080.3.1, et seq.), a lead agency, within 14 days of determining that an application is complete, must notify any California Native American Tribe in writing that has previously requested notification about the project and inquire whether the Tribe wishes to initiate request formal consultation. Tribes have 30 days from receipt of said notification to request formal consultation; tribal consultation is required only with those tribes that formally request consultation, in writing. The lead agency then has 30 days to initiate the consultation, which continues until the parties reach an agreement on the necessary mitigation for impacts to Tribal Cultural Resources, agree that no mitigation is needed, or one or both parties determine that negotiation occurred in good faith but no agreement will be reached.

On November 29, 2021, the NAHC sent a letter response to the NOP delineating potential legal obligations.

- ✓ **California Health and Safety Code -** Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the County coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission. (Public Resources Code Section 5097.98 specifies the procedures to be followed in case of the discovery of human remains on non-Federal land. The disposition of Native American burials is within the jurisdiction of the Native American Heritage Commission.

- ✓ **California Implementation of Federally and State-Mandated Historic Preservation Program -**The California State Office of Historic Preservation (OHP) is responsible for administering historical preservation programs. The purpose of the OHP is to promote the preservation of California's heritage resources by ensuring that federally or state-sponsored programs comply with federal and state preservation laws. The OHP assists agencies in minimizing adverse effects on historical heritage.

- ✓ **California Register of Historical Resources -** The California Register of Historical Resources is a listing that helps agencies identify existing historical resources that require protection from adverse change. This register includes the California Points of Historical Interest, the California properties listed in the National Register of Historic Places, and the California Registered Historical Landmarks from No. 0770 onward.

- ✓ **California Penal Code Section 622, Destruction of Historical Properties -** Section 622 of the California Penal Code makes it a misdemeanor for anyone, except the owner, to willingly injure or destroy anything of archaeological interest in both public and private places. Penalties for damage to or removal of cultural resources are set forth in Section 622.5.

- ✓ **California Public Resources Code, Sections 5024, 5024.5, 5025, 5097.5, 5097.9, and 5097.98-99 -** Sections 5024 and 5024.5 of the PRC were enacted as part of an effort to establish a state program to preserve historical resources. They require state agencies to take specific actions to preserve state-owned historical resources within their jurisdiction.

  Section 5028 of the PRC protects any structure that is listed on the NRHP or on any local register of historic places from being destroyed, demolished, or significantly altered after incurring damage from a natural disaster. The structures may be altered only to restore and preserve their historical value, or if it is determined that they present an imminent threat of bodily harm to the public or damage to

adjacent property. The State Office of Historic Preservation has the power to determine whether the structure may be demolished, destroyed, or significantly altered.

Section 5097.5 of the PRC identifies the unauthorized disturbance or removal of archaeological, historical, or paleontological resources located on public lands as a misdemeanor.

Section 5097.9 of the PRC established the California NAHC. The NAHC makes recommendations encouraging private property owners to protect and preserve sacred places and to allow Native Americans access for ceremonial and spiritual purposes.

PRC sections 5097.98 and 5097.99 require that NAHC be notified whenever Native American graves are found. It deems it illegal to take or possess remains or artifacts taken from Native American graves. All violations occurring after January 1, 1988, are considered felonies.

- ✓ **Executive Order B-10-11 -** Executive Order B-10-11 states that every state agency and department subject to executive control is to encourage consultation with California Native American tribes. It establishes the Governor's Tribal Advisor in the Office of the Governor of California, which effectively serves as the link between tribal governments and the Governor's Office.

State Agencies

- ✓ **California Department of Parks and Recreation (CDPR) - The principal mission of the** California Department of Parks and Recreation is to preserve biological diversity, protect natural and cultural resources, and provide sites for a variety of recreational activities to California residents and tourists.

- ✓ **California Office of Historic Preservation (OHP) -** The California Office of Historic Preservation is responsible for the administration of federally- and state-mandated historic preservation programs in California. The mission, in partnership with the people of California and governmental agencies, is to preserve and enhance California's irreplaceable historic heritage as a matter of public interest so that its vital legacy of cultural, educational, recreational, aesthetic, economic, social, and environmental benefits will be maintained and enriched for present and future generations.

- ✓ **California Historical Resources Commission (CHRC) - The** California Historical Resources Commission (CHRC) is a nine-member board that reviews sites of potential statewide significance and administers the California Register of Historic Places.

- ✓ **California Native American Heritage Commission -** The California Native American Heritage Commission offers guidelines for obtaining information on, and issues recommendations for the

documentation of, Native American heritage resources [reference Appendix B, Notice of Preparation (NOP) Comment Letters from the Native American Heritage Commission, dated April 28, 2017].

- ✓ **California Department of Transportation (Caltrans) -** Any project funded or permitted by Caltrans, either directly or through assistance to local governments, is subject to the requirements of federal and State historic preservation laws and regulations. Most Caltrans projects use federal funds or require federal licenses or permits and are therefore subject to federal environmental laws and regulations. When projects have no federal involvement, only State laws and regulations apply. To meet these legal requirements, Caltrans has established detailed guidelines for cultural resources management, outlined in the Caltrans *Environmental Handbook*, Volume 2. These guidelines set forth policies and procedures for identifying, evaluating, and treating project impacts on cultural resources that may be affected by Caltrans projects. The process outlined in the *Environmental Handbook* is designed to meet the requirements of both federal and State law.

Environmental Setting

Archaeological Resources

The patterns of human occupation of the area now known as Merced County have left traces of their existence on the land. Merced County contains distinct geographic regions that have been evaluated for archaeological resources at varying levels of detail through individual research efforts. On a regional level, however, the information is extremely general. Areas of potential impact include:

- ✓ **High Sensitivity** - General areas within the county that have the greatest likelihood of containing resources are located between the lower foothills and the 4,500-foot elevation level. Additionally, areas along the Merced and San Joaquin rivers are likely to contain important resources.

- ✓ **Moderate Sensitivity** - Foothill areas above 4,500 feet are considered to be of moderate sensitivity. It is believed that seasonal occupation by Native American tribes was common, as evidenced by discoveries of prehistoric trails and temporary trailside camps. In addition, the rim of the Central Valley is considered moderately sensitive.

- ✓ **Low Sensitivity** - The Valley floor is considered to be of low sensitivity, because leveling of land for agricultural use, construction of dams, water transmission facilities, roads, and general urban development have likely destroyed many archaeological sites in this area.

Historic Resources

✓ Settlement History

Early exploration of the Central Valley began with the arrival of explorers and traders, including the notable Jedediah Smith, Ewing Young, and J.R. Walker. John Fremont and his company crossed present-day Merced County heading south in 1844. John Fremont was nationally recognized for his expeditions and topographic documentation of the American West. He was also a politician and soldier, paving the way for him to become the Republican Party's first presidential candidate.

In the 1840s, gold miners migrated south from the Columbia-Sonora goldfields to the Sierra Nevada Mountains in search of gold. Eventually, they and other settlers established communities in the area. Furthermore, it brought about a market for ferry operators, storekeepers, innkeepers, and others who supplied miners with goods and services. The 1850's were a productive time for the Central Valley as settlements grew. In 1872, the Central Pacific Railroad entered Merced County, connecting it with prominent markets in the north, south, and east. During this period, areas along the San Joaquin and Merced Rivers also began developing irrigation canals, which expanded farming opportunities in the Central Valley.

With an emphasis on agriculture, communities in Merced County were growing steadily by the turn of the century. With much of the county under cultivation and the development of controlled irrigation systems, most of the Valley floor was divided into small, family-worked farms. In response to the Great Depression of the 1930s, there was a general reversal of growth in urban areas that had been evident in the previous decade. After World War II, Merced County began to experience population growth as farm products earned higher prices. As advances in technology were made in the late 1940s, the ongoing trend of a declining farm population and an increasing farm size was firmly established.

✓ Historic Preservation

Many historic sites have been identified in Merced County and are protected by various State and federal agencies (reference Table 3-51). The listings in the National Register and the California Register (updated regularly) of all existing and potential historic objects, sites, buildings, and districts are available from the CHRC and the NPS. A complete list of historic sites in Merced County that were identified on the National Register and the California Register as of 2026. Merced County contains numerous potentially significant historical sites, including homesteads and ranches, a courthouse, a city, and a state route and its associated features. These sites have not been included on the National

or California Register. However, there are several museums in the county that may help to identify and preserve these resources. These museums are identified in Table 3-52. Historical landmarks and museums dedicated to a site on the register are not included. California's Office of Historic Preservation has also designated several historical landmarks in Merced County, which are identified in Table 3-53.

TABLE 3-51
Historic Sites in Merced County

Site/Building	Location	Year Constructed	Designation	National Register/CAL Register Status
Temporary Detention Camp	Merced	1942	CA SHL 934	NRHP & CRHR
Pacheco Pass	Los Banos	--	CA SHL 829	NRHP & CRHR
Masonic Temple	Merced	1917	NRHP	NRHP & CRHR
Bank of Italy	Merced	1928	NRHP	NRHP & CRHR
Bank of Los Banos	Los Banos	1923	NRHP	NRHP & CRHR
Buhach Grammar School	Merced	1907	NRHP	NRHP & CRHR
Church of St. Joseph	Los Banos	1923	NRHP	NRHP & CRHR
Maj. George Beecher House	Merced	1891	NRHP	NRHP & CRHR
George Bloss mansion	Atwater	1914	NRHP	NRHP & CRHR & POI
Rector Home	Merced	1891	NRHP	NRHP & CRHR
Legget House	Merced	1884	NRHP	NRHP & CRHR
Thomas Leggett House	Merced	1890	NRHP	NRHP & CRHR
Merced Co. Courthouse	Merced	1874	NRHP & POI 3	NRHP & CRHR
Merced Co. High School	Merced	1897	NRHP	NRHP & CRHR
Tioga Hotel	Merced	1928	NRHP	NRHP & CRHR
US Post Office Bell Station	Merced	1891	NRHP	NRHP & CRHR
Merced Theatre	Merced	1931d	NRHP	NRHP & CRHR
430 W. 20th Street	Merced	--	Determined Eligible	CRHR
Bull Sheds Sunshine Dairy	Merced	1927	Determined Eligible/District[1]	CRHR

Site/Building	Location	Year Constructed	Designation	National Register/CAL Register Status
Bunkhouse Sunshine Dairy	Merced	1927	Determined Eligible/District	CRHR
Hay Barn Sunshine Dairy	Merced	1927	Determined Eligible/District	CRHR
Main Residence Sunshine Dairy	Merced	1927	Determined Eligible/District	CRHR
Milk Barn Sunshine Dairy	Merced	1927	Determined Eligible/District	CRHR
Quonset Hut Sunshine Dairy	Merced	--	Determined Eligible/District	CRHR
Residence Sunshine Dairy	21 Coffee, Merced	1930	Determined Eligible/District	CRHR
Residence Sunshine Dairy	46 Coffee, Merced	1930	Determined Eligible/District	CRHR
Residence Sunshine Dairy	3144 Childs Ave., Merced	1927	Determined Eligible/District	CRHR
Sunshine Dairy District	Merced	1927	Determined Eligible/District	CRHR
Shop Building, Sunshine Dairy	Merced	1927	Determined Eligible/District	CRHR
Tank House Sunshine Dairy	Merced	1927	Determined Eligible/District	CRHR
Bridge 39C-13	Winton	1912	Determined Eligible	CRHR
Bridge 39C-3	Gustine	1910	Determined Eligible	CRHR
Bridge 39-44	Merced	1931	Determined Eligible	CRHR
Bridge 39-200	Los Banos	1950	Determined Eligible	CRHR
Delta Mendota Canal	Los Banos	1946	Determined Eligible	CRHR
Fagundas Barn	Los Banos	1925	Determined Eligible	CRHR
Gustine Municipal Water Works	Gustine	1910	Determined Eligible	CRHR
State route 152	Los Banos	--	Determined Eligible	CRHR
Station #3 Water Tower	Merced	1934	Determined Eligible	CRHR
Yosemite Lake	Merced	1883	Determined Eligible	CRHR
W. Saunders House	Merced	1907	Determined Eligible	CRHR

Site/Building	Location	Year Constructed	Designation	National Register/CAL Register Status
GB Neighbors House	Snelling	1870	POI 4	--
Gwin Post Office	Le Grand	1855	POI 5	--
Lake Yosemite Water Tower	Merced	1888	POI 6	--
Los Banos (City)	Los Banos	--	CA SHL 550	--
Los Banos Creek	Los Banos	--	POI 2	--
Merced Co. Justice Courthouse	Gustine	1911	POI 8	--
Canal Farm Inn	Los Banos	1879	CA SHL 548	--
Snelling Courthouse	Snelling	1857	CA SHL 409	--
Snelling Community Recreation Hall	Snelling	1871	POI 1	--
Merced Main Canal	--		Determined Eligible	NRHP & CRHR
San Luis Gonzaga Archaeological District	5 Prehistoric Sites	--	NRHP	NRHP & CRHR

CA SHL = California State Historic Landmark
CRHR = California Register of Historical Resources
NRHP = National Register of Historic Places
POI = Point of Historical Interest
Source: Office of Historic Preservation Historic Property Data File, Merced County, 2011.
California Office of Historic Preservation (OHP). 2026. California Historical Resources Information System (CHRIS), Built Environment Resources Directory (BERD), and Central California Information Center (CCIC) records search for Merced County.

TABLE 3-52
Museums in Merced County

Name	Subject	Location
Merced County Courthouse Museum	History of Merced County and the Great Central Valley	Merced
Milliken Museum	History of Los Baños	Los Banos
Castle Air Museum	Aviation Museum	Atwater
Gustine Museum	History of Gustine	Gustine
Livingston Museum	History of Livingston	Livingston
Mariposa State Mining Museum	Mining and mineral museum	Mariposa
Yosemite Wildlife Museum	Wildlife in Yosemite	Merced
Los Baños-area Museum	Highlighting local history, pioneer heritage, and regional artifacts	Los Banos
Gustine History Center	Community museum and archives preserving local historical records and artifacts	Gustine
Kids Discovery Station	Interactive children's museum with educational exhibits and hands-on learning activities	Merced
Merced Multicultural Arts Center	Gallery and performance venue	Downtown Merced.
UC Merced La Galería	Exhibits emphasizing Central Valley and California artists	Merced

Source: VRPA Technologies, 2026

TABLE 3-53
Historical Landmarks in Merced County

Landmark	Significance	Location
First Merced County Courthouse	Built in 1857 and recognized as the first courthouse in Merced County.	Snelling
Canal Farm Inn	The San Joaquin Valley ranch headquarters of California pioneer and Los Banos founder Henry Miller.	Los Banos
Los Banos	Los Banos (the baths) was visited by early Spanish explorers and was a favorite place for padres from the San Juan Bautista Mission.	Los Banos
Pacheco Pass	Lieutenant Gabriel Moraga first traversed and recorded the pass, and it has since become the main route between the coastal areas to the west and the great valley and mountains to the east.	15 miles west of Los Banos
Snelling Courthouse	The first courthouse in Merced County. This building, dedicated to the memory of the pioneers, celebrates the 75th anniversary of Merced County.	Snelling
Merced Assembly Center for Japanese Americans	Temporary detention camps for Japanese Americans during World War II	Merced County Fairgrounds

Source: California Office of Historic Preservation, 2026

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Archaeological and paleontological resources are often not discovered until they are uncovered during the construction of development projects, whereas historical resources are generally known before construction. Strict mitigation and protection measures are required whenever such resources are discovered and are likely to be disturbed, destroyed, or adversely affected by development.

In practice, site-specific cultural resource surveys are conducted to support environmental analysis prepared prior to commencement of any action, development, or land use change subject to CEQA (or NEPA on lands subject to federal jurisdiction or for projects involving federal funds or actions), so that the nature and extent of impacts can be properly evaluated, and avoidance or mitigation can be appropriately determined.

To determine the actual potential for significant impacts on cultural resources from implementing transportation improvements, project-specific studies would be necessary. It is recognized that important cultural resources may be encountered during ground-disturbing construction work on any individual improvement project within the RTP, necessitating strict mitigation and protection measures to safeguard these resources. It is also recognized that projects associated with the operation and maintenance of the transportation system, such as signalization equipment replacement and pavement maintenance, would not directly affect cultural resources. Since the specific locations of cultural resources are not generally mapped, and since the extent of ground disturbance associated with various improvement projects is unknown at this time, it is not possible to assess the specific impacts on cultural resources based upon the location of these projects, many of whose specific alignments have not been established. Accordingly, no project-specific reviews or field studies have been undertaken for this EIR. The analysis of the impact on cultural resources that may result from the implementation of improvement projects under the 2026 RTP is therefore based on cultural resource impacts generally associated with ground-disturbing activities.

Criteria for Significance – Cultural Resources

The CEQA Guidelines establish that a significant impact would be expected to occur if the project were:

- ✓ Cause a substantial adverse change in the significance of a historical resource.
- ✓ Cause a substantial adverse change in the significance of an archaeological resource.
- ✓ Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- ✓ Disturb any human remains, including those interred outside of formal cemeteries.

In addition, CEQA requires evaluating the impacts a project may have on a community, ethnic, or social group. A project will normally have a significant effect on the environment if it causes one of the following, as defined in Appendix G of the CEQA Guidelines, Significant Effects:

- ✓ Significant effects on cultural resources in each planning area would occur if population increases occurred in areas of historic districts and historic sites
- ✓ Significant effects on cultural resources would result if the improvement projects placed significant future populations in areas of potential or known archaeological and/or paleontological significance

All regions in the project area have the potential to yield undiscovered archaeological and paleontological resources, as well as human remains. The development of new transportation facilities may affect archaeological and paleontological resources, primarily by disturbing buried resources. Frequently, these resources are previously unidentified. Therefore, any excavation in previously undisturbed soil has the potential to impact archaeological and paleontological resources.

Development of new transportation facilities may affect historic architectural resources (structures 50 years or older), either through direct effects to buildings within the proposed individual improvement project area, or through indirect effects to the area surrounding a resource if it creates a visually incompatible structure adjacent to a historic structure. Impacts to historic resources fall into three categories:

- ✓ Direct disturbance of buried resources.
- ✓ Direct impact or alteration of structures.
- ✓ Indirect impacts to structures, such as vibration and corrosive air contaminants, and creation of a visually incompatible environment.

Merced County contains numerous historic properties and residential districts; therefore, the potential for impacts on historic properties is significant. Improvements within existing rights-of-way are less likely to affect historical architectural resources. However, new highway segments through historic districts (within or adjacent to urban areas and throughout rural areas) would have a significant impact. In addition, reducing buffer zones between transportation corridors and reduction of historic resources through lane widening could cause significant impacts.

Public Resources Code *(Section 5020.1)* defines a potential historic resource as including, but not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, regardless of age. The

45-year criteria were designed by the OHP to consider resources that may be significant in the near future. Types of projects that may potentially impact cultural resources include:

- ✓ Regionally significant streets and highways that involve the development of new lanes and right-of-way acquisition.
- ✓ Freeway projects include developing mixed flow lanes, some new lanes, and possible right-of-way acquisition.
- ✓ Bridge crossing projects that include the development of new lanes and right-of-way acquisition.
- ✓ Interchange improvement projects that include new lanes and possible right-of-way acquisition.
- ✓ Future land use developments consistent with the RTP/SCS and the general plans of local jurisdictions.

Since some excavation is involved in all of the project types mentioned above, it is necessary that, prior to beginning each proposed project, potential impacts on individual cultural resources and appropriate mitigation measures be identified on a project-by-project basis. It is important that the vicinity of individual projects be carefully evaluated to identify resources and potential impacts. As time passes and structures age, the status of structures changes as their age (45 years or older) makes them eligible for historic status. In addition, data on archaeological resources change since data is added to the regional database on a continuous basis. Thus, the potential for encountering archaeological resources changes because knowledge of their location allows them to be avoided.

Cultural Resource Impacts, Mitigation Measures, and Significance After Mitigation

Impact 3.7.1 – Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5.

“Historical resource" includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript, which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

Development of highways, arterial roads, bridge crossings, transit, and future land use projects may impact historic resources. Due to the size and potentially large number of historic resources that could be disturbed by the combined projects, this impact could be significant at a regional level. Types of projects that have the potential to impact historic resources include highway projects and bridge crossings that entail the development of new lanes and, in some instances acquisition of new rights-of-way, arterial and interchange projects, which entail the development of new lanes, right-of-way acquisition, and the development of land and sites for future land use developments.

Mitigation Measures

All mitigation measures will be included in program-level analysis, as appropriate. The implementing agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. MCAG will be provided with documentation indicating compliance with mitigation measures.

- ✓ **CTR 3.7.1-1** As part of the appropriate environmental review of individual projects, the project implementation agencies will identify potential impacts to historic resources, considering requirements set forth in Assembly Bill 52 (Gatto, Chapter 532 of 2014) and Senate Bill 18. If the project is also subject to the federal National Environmental Policy Act (NEPA), the tribal requirements of Section 106 of the National Historic Preservation Act of 1966 may also apply.

- ✓ **CTR 3.7.1-2** As part of the appropriate environmental review of individual projects, the project implementation agencies will identify potential impacts to historic resources. A records search at the appropriate Information Center will be conducted to determine whether the individual transportation improvement project or future land use development area has been previously surveyed and whether resources were identified.

- ✓ **CTR 3.7.1-3** As necessary, prior to construction activities, the implementing agencies will obtain a qualified architectural historian to conduct historic architectural surveys as recommended by the Archaeological Information Center. In the event that the records indicate no previous survey has been conducted, the Information Center will recommend whether a survey is warranted based on the sensitivity of the individual transportation improvement project or future land use development area to cultural resources.

- ✓ **CTR 3.7.1-4** Implementing agencies will comply with Section 106 of the National Historic Preservation Act if federal funding or approval is required. This law requires federal agencies to evaluate the impact of their actions on resources that are included in, or eligible for listing in, the National Register of Historic Places. Federal agencies must coordinate with the State Historic Preservation Officer to evaluate impacts and develop mitigation. These mitigation measures may include, but are not limited to, the following:

    - Carry out the maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation, relocation, or reconstruction of any impacted historic resource, which will be conducted in a manner consistent with the Secretary of the Interior's Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.

- ✓ **CTR 3.7.1-5** In some instances, the following mitigation measure may be appropriate in lieu of the previous mitigation measure:

  - ➢ Secure a qualified environmental agency and/or architectural historian, or other such qualified person, to document any significant historical resource(s), by way of historic narrative, photographs, or architectural drawings, as mitigation for the effects of demolition of a resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce significant impacts on historic resources identified above, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact 3.7.2 – Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.

Construction activities involving excavation and earthmoving may encounter archaeological resources. This would be considered a significant impact. The OHP defines an archaeological "site" as consisting of three or more related resources discovered in one locality. In the event of an archaeological or paleontological discovery, the resources are collected, documented, and curated at an educational institution, such as a school or museum. The curation facility is usually appropriated by the landowner or lead agency. A unique archaeological resource includes artifacts or sites in which it can be demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any one or all of the following criteria:

- ✓ It has made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.
- ✓ It is associated with the lives of persons important to California's past.

- ✓ It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- ✓ It has yielded, or may be likely to yield, information important to the prehistory or history of California.

The project includes new streets, roads, and highways; street, road, and highway widening (for wider lanes, shoulders, or new lanes); new transit facilities; grade crossings; consolidated rail corridors; bridge projects; a number of interchanges; and future land use development activities. These types of projects have the potential to affect archaeological materials because they may occur in previously undisturbed areas. Excavation and soil removal to any depth have the potential to yield significant archaeological resources. Improvements and modifications to existing transportation facilities and land use developments would have less impact on archaeological resources because these project locations have already been disturbed. However, construction of additional lanes and future land use development could impact archaeological materials if it entails brush clearing, grading, trenching, excavation, and/or any kind of soil removal in an area not previously used as a paved transportation facility. Due to the size and potentially large number of archaeological sites that could be disturbed by the combined projects, the impact on archaeological resources at a regional level could be significant.

Mitigation Measures

All mitigation measures will be included in project-level analysis, as appropriate. The implementing agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. MCAG will be provided with documentation indicating compliance with mitigation measures.

Implementation of the following mitigation measures for archaeological resources is recommended to reduce impacts to a level less than significant. Implementing agencies will require the following measures as part of the individual transportation improvement project or future land use development review process:

- ✓ **CTR 3.7.2-1** As part of the appropriate environmental review of individual projects, the project implementation agencies will identify potential impacts to historic resources, considering requirements set forth in Assembly Bill 52 (Gatto, Chapter 532 of 2014) and Senate Bill 18. If the project is also subject to the federal National Environmental Policy Act (NEPA), the tribal requirements of Section 106 of the National Historic Preservation Act of 1966 may also apply.

- ✓ **CTR 3.7.2-2** As part of the appropriate environmental review of individual projects, the implementation agencies will consult with the Native American Heritage Commission to determine whether known sacred sites are in the project area and identify the Native American(s) to contact to obtain information about the project site.

- ✓ **CTR 3.7.2-3** Prior to construction activities and as necessary, the implementation agencies will obtain a qualified archaeologist to conduct a record search at the appropriate Information Center of the California Archaeological Inventory to determine whether the project area has been previously surveyed and whether resources were identified.

- ✓ **CTR 3.7.2-4** As necessary prior to construction activities, the implementation agencies will obtain a qualified archaeologist or architectural historian (depending on applicability) to conduct archaeological and/or historic architectural surveys as recommended by the Information Center. If the records indicate that no previous survey has been conducted, the Information Center will recommend whether a survey is warranted based on the sensitivity of the project area to cultural resources.

- ✓ **CTR 3.7.2-5** If the record search indicates that the project is located in an area rich with cultural materials, the implementing agencies will retain a qualified archaeologist to monitor any subsurface operations, including but not limited to grading, excavation, trenching, or removal of existing features of the subject property.

- ✓ **CTR 3.7.2-6** Construction activities and excavation will be conducted to avoid cultural resources (if found). If avoidance is not feasible, further work may be needed to determine the importance of a resource. The implementing agencies will obtain a qualified archaeologist familiar with local archaeology and/or an architectural historian, who should make recommendations regarding the work necessary to determine the importance. If the cultural resource is determined to be important under State or federal guidelines, impacts on it will be mitigated.

- ✓ **CTR 3.7.2-7** The project implementation agencies will stop construction activities and excavation in the area where cultural resources are found until a qualified archaeologist can determine the importance of these resources.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce significant construction impacts on archeological resources identified above, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require

a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact 3.7.3 – Disturb any human remains, including those interred outside of dedicated cemeteries.

Construction activities involving excavation and earthmoving may encounter human remains. This is a significant impact.

Humans have occupied Merced County for at least 10,000 years, and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, excavation and construction activities, regardless of depth, may yield human remains that are not interred in marked, formal burials. Construction and excavation activities associated with this project are likely to significantly impact the discovery of human remains. Under CEQA, human remains are protected under the definition of archaeological materials as being "any evidence of human activity." Human remains are also protected under the Native American Graves and Repatriation Act (NAGPRA) of 1990, which was enacted to protect Native American graves, as well as culturally affiliated items, associated funerary objects, unassociated funerary objects, sacred objects, and objects of cultural patrimony. NAGPRA states the following:

- ✓ A burial site means any natural or prepared physical location, whether originally below, on, or above the surface of the earth, into which, as part of the death rite or ceremony of a culture, individual remains are deposited.

As previously stated, the project includes new highways, highway widening, new transit facilities, grade crossings, rail corridors, bridge crossings, interchanges, and future land use developments. These activities have the potential to yield previously undiscovered human remains because they may occur in undisturbed or only slightly disturbed areas. Excavation and soil removal of any depth can yield human remains. Improvements and modifications to existing rights-of-way or land use developments would have less impact, as these individual project locations have already been disturbed. However, construction of additional lanes or new land use developments could affect human remains if they involve brush clearing, grading, trenching, excavation, or any soil removal in an area not previously developed.

Mitigation Measures

All mitigation measures will be included in project-level analysis, as appropriate. The implementing agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. MCAG will be provided with documentation indicating compliance with mitigation measures.

As part of the appropriate environmental review of individual projects, the project implementation agencies - in the event of discovery or recognition of any human remains, during construction or excavation activities associated with the project, in any location other than a dedicated cemetery - will cease further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the Merced County coroner has been informed and has determined that no investigation of the cause of death is required.

- ✓ **CTR 3.7.3-1** As part of the appropriate environmental review of individual projects, the project implementation agencies will identify potential impacts to historic resources, considering requirements set forth in Assembly Bill 52 (Gatto, Chapter 532 of 2014) and Senate Bill 18. If the project is also subject to the federal National Environmental Policy Act (NEPA), the tribal requirements of Section 106 of the National Historic Preservation Act of 1966 may also apply.

- ✓ **CTR 3.7.3-2** If the remains are of Native American origin, the coroner will contact the Native American Heritage Commission in order to ascertain the proper descendants of the deceased individual. The coroner will make a recommendation to the landowner or the person responsible for the excavation work on means of treating or disposing of the human remains, with appropriate dignity, and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.

- ✓ **CTR 3.7.3-3** If the Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission, in which case:

  - ➢ The landowner or his authorized representative will obtain a Native American monitor - and an archaeologist, if recommended by the Native American monitor - and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance, where the following conditions occur:
    - The Native American Heritage Commission is unable to identify a descendant.
    - The descendant identified fails to make a recommendation.
    - The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce significant impacts on human remains identified above, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Criteria for Significance – Tribal Cultural Resources

The California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000 et seq.), specifically Public Resources Code section 21084.1, provides that a project that may cause a substantial adverse change in the significance of a historical resource may have a significant effect on the environment. (Pub. Resources Code§ 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b) (CEQA Guidelines Section 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared. (Pub. Resources Code§ 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd.(a)(1) (CEQA Guidelines§ 15064 (a)(1)). To determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency must identify whether any historical resources are within the area of project effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code§ 21074) and provides 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. (Pub. Resources Code§ 21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code§ 21084.3 (a). AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015. If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). Both SB 18 and AB 52 have tribal consultation requirements. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the

tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. § 800 et seq.) may also apply.

Tribal Resource Impacts, Mitigation Measures, and Significance After Mitigation

Impact 3.7.4 - 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Construction activities involving excavation and earthmoving may encounter tribal cultural resources. This would be considered a significant impact.

The project includes new streets, roads, and highways; street, road, and highway widening (for wider lanes, shoulders, or new lanes); new transit facilities; grade crossings; consolidated rail corridors; bridge projects; a number of interchanges; and future land use development activities. These projects have the potential to affect tribal cultural resources because they could occur in previously undisturbed areas. Excavation and soil removal of any depth have the potential to yield resources of tribal cultural significance. Improvements and modifications to existing transportation facilities and land use developments would have less impact on tribal cultural resources because these project locations have already been disturbed. However, construction of additional lanes and future land use development could impact tribal cultural resources if it entails brush clearing, grading, trenching, excavation, and/or any kind of soil removal in an area not previously used as a paved transportation facility or developed for urban or rural land uses. Due to the size and potentially large number of tribal cultural sites that could be disturbed by the combined projects, the impact on tribal cultural resources could be significant at the regional level.

Mitigation Measures

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of a proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of selected provisions of AB 52 and SB 18, along with NAHC's recommendations for conducting cultural resources assessments. It is recommended that local agencies and Caltrans consult their legal counsel regarding compliance with AB 52, SB 18, and any other applicable laws.

- ✓ **CTR 3.7.4-1** Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
  a. A brief description of the project.
  b. The lead agency contact information.
  c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code§ 21080.3.1 (d)).
  d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code§ 21073).

- ✓ **CTR 3.7.4-2** Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code§ 21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, a mitigated negative declaration, or an environmental impact report. (Pub. Resources Code § 21080.3.1(b)).
  a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18). (Pub. Resources Code§ 21080.3.1 (b).

- ✓ **CTR 3.7.4-3** Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
  a. Alternatives to the project.

b. Recommended mitigation measures.
c. Significant effects. (Pub. Resources Code§ 21080.3.2 (a)).

✓ **CTR 3.7.4-4** Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
a. Type of environmental review necessary.
b. Significance of the tribal cultural resources.
c. Significance of the project's impacts on tribal cultural resources.
d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code§ 21080.3.2 (a).

✓ **CTR 3.7.4-5** Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code§ 21082.3(c)(1)).

✓ **CTR 3.7.4-6** Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code§ 21082.3 (b).

✓ **CTR 3.7.4-7** Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code§ 21080.3.2 (b).2

- ✓ **CTR 3.7.4-8** Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code§ 21082.3 (a).

- ✓ **CTR 3.7.4-9** Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource,' the lead agency shall consider feasible mitigation pursuant to Public Resources Code section 21084.3 (b). (Pub. Resources Code§ 21082.3 (e).

- ✓ **CTR 3.7.4-10** Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
  a. Avoidance and preservation of the resources in place, including, but not limited to:
     i. Planning and construction to avoid the resources and protect the cultural and natural context.
     ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
  b. 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:
     i. Protecting the cultural character and integrity of the resource.
     ii. Protecting the traditional use of the resource.
     iii. Protecting the confidentiality of the resource.
  c. 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.
  d. Protecting the resource. (Pub. Resource Code§ 21084.3 (b).
  e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code§ 815.3 (c).
  f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code§ 5097.991).

- ✓ **CTR 3.7.4-11** Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An environmental impact report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
  a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
  b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
  c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d), and the tribe failed to request consultation within 30 days. (Pub. Resources Code§ 21082.3 (d).

  All mitigation measures will be included in project-level analysis, as appropriate. The implementing agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. MCAG will be provided with documentation indicating compliance with mitigation measures.

  Implementation of the following mitigation measures for tribal cultural resources is recommended to reduce impacts to a less-than-significant level. Implementing agencies will require the following measures as part of the individual transportation improvement project or future land use development review process:

  - As part of the appropriate environmental review of individual projects, the project implementation agencies will identify potential impacts to tribal cultural resources, considering requirements set forth in AB 52 and SB 18, as well as the NAHC's recommendations for conducting cultural resources assessments noted above in items 1 through 11.

  - As part of the appropriate environmental review of individual projects, the implementing agencies will consult with the NAHC and affected Native American Tribes to determine whether any known sacred sites are within the project area and to identify the Native American(s) to contact for information about the project site.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project

area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce significant construction impacts on archeological resources identified above, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

3.8 ENERGY AND ENERGY CONSERVATION

This section describes the existing energy resources and analyzes the effects of implementing the proposed RTP/SCS on energy consumption and conservation.

Regulatory Setting

Federal

- ✓ **Energy Policy and Conservation Act of 1975 -** The Energy Policy and Conservation Act sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the National Highway Traffic Safety Administration, part of the USDOT, is responsible for establishing additional vehicle standards and revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks with a gross vehicle weight of over 8,500 pounds) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, administered by the EPA, was created to ensure vehicle manufacturers' compliance with fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

- ✓ **Clean Air Act (CAA) of 1970**

  The Clean Air Act is a United States federal law designed to control air pollution on a national level. It is one of the United States' first and most influential modern environmental laws, and one of the most comprehensive air quality laws in the world. As with many other major U.S. federal environmental statutes, it is administered by the U.S. Environmental Protection Agency (EPA), in coordination with state, local, and tribal governments.[4] Its implementing regulations are codified at 40 C.F.R. Subchapter C, Parts 50-97.

  The 1955 Air Pollution Control Act was the first U.S. federal legislation addressing air pollution; it also provided funds for federal research on air pollution. The first federal legislation to actually pertain to "controlling" air pollution was the Clean Air Act of 1963. The 1963 act accomplished this by establishing a federal program within the U.S. Public Health Service and authorizing research into techniques for monitoring and controlling air pollution.

It was first amended in 1965 by the Motor Vehicle Air Pollution Control Act, which authorized the federal government to set standards for controlling the emission of pollutants from certain automobiles, beginning with the 1968 model year. A second amendment, the Air Quality Act of 1967, enabled the federal government to expand its activities to investigate and enforce interstate air pollution transport and, for the first time, to conduct far-reaching ambient monitoring studies and stationary-source inspections. The 1967 act also authorized expanded studies of air pollutant emission inventories, ambient monitoring techniques, and control techniques.

Amendments approved in 1970 greatly expanded the federal mandate, requiring comprehensive federal and state regulations for both stationary (industrial) pollution sources and mobile sources. It also significantly expanded federal enforcement. Also, the EPA was established on December 2, 1970, to consolidate pertinent federal research, monitoring, standard-setting, and enforcement activities into a single agency to ensure environmental protection.

Further amendments were made in 1990 to address the problems of acid rain, ozone depletion, and toxic air pollution, and to establish a national permit program for stationary sources and increased enforcement authority. The amendments also established new auto gasoline reformulation requirements, set Reid vapor pressure (RVP) standards to control evaporative emissions from gasoline, and mandated new gasoline formulations sold from May to September in many states.

- ✓ **National Energy Act of 1978 -** In response to the energy crisis in the 1970s, Congress passed the National Energy Act of 1978 (NEA) to establish energy efficiency programs, tax incentives, tax disincentives, energy conservation programs, alternative fuel programs, and regulatory and market-based initiatives. It includes five statutes:

  - Public Utility Regulatory Policies Act (PURPA) (Public Law 95–617)
  - Energy Tax Act (Public Law 95–618)
  - National Energy Conservation Policy Act (NECPA) (Public Law 95–619)
  - Power Plant and Industrial Fuel Use Act (Public Law 95–620)
  - Natural Gas Policy Act (Public Law 95–621)

  Of the five statutes, one, PURPA, is relevant to the consideration of the 2026 RTP/SCS.

- ✓ **Public Utility Regulatory Policies Act of 1978 (PURPA) -** PURPA was passed in response to the unstable energy climate of the late 1970s. PURPA sought to promote the conservation of electric energy. Additionally, PURPA created a new class of nonutility generators, small power producers, from which, along with qualified cogenerators, utilities are required to buy power.

  PURPA was, in part, intended to augment electric utility generation with more efficient electricity and to provide equitable rates to electric consumers. Utility companies are required to purchase all

electricity from "Qfs" (qualifying facilities) at avoided cost (the incremental savings associated with not having to produce additional units of electricity). PURPA expanded the participation of nonutility generators in the electricity market and demonstrated that electricity from nonutility generators could successfully be integrated with a utility's own supply. PURPA requires utilities to buy whatever power is produced by Qfs (usually cogeneration or renewable energy). Utilities want these provisions repealed; critics argue that it will decrease competition and impede the development of the renewable energy industry. The Fuel Use Act (FUA) of 1978 (repealed in 1987) also helped Qfs become established. Under FUA, utilities were not allowed to use natural gas to fuel new generating technologies, but QFs, which were by definition not utilities, were able to take advantage of abundant natural gas and new technologies (such as combined-cycle). The technologies lowered the financial threshold for entry into the electricity generation business and shortened the lead time for constructing new plants.

- ✓ **Energy Policy Act of 1992 (EPAct) -** The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are also included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

- ✓ **Energy Policy Act of 2005 -** The Energy Policy Act of 2005 was signed into law by President Bush on August 8, 2005. Generally, the act includes provisions for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

- ✓ **Energy Independence and Security Act of 2007 -** The Energy Independence and Security Act (EISA; Public Law 110-140) was signed into law by President George W. Bush on December 19, 2007. The Act's goal is to achieve energy security in the United States by increasing renewable fuel production, improving energy efficiency and performance, protecting consumers, improving vehicle fuel economy, and promoting research on greenhouse gas capture and storage. Under the EISA, the RFS program (RFS2) was expanded in several key ways:

  - EISA expanded the RFS program to include diesel, in addition to gasoline.
  - EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
  - EISA established new categories of renewable fuel and set separate volume requirements for each one.

- EISA required EPA to apply lifecycle greenhouse gas performance threshold standards to ensure that each category of renewable fuel emits fewer greenhouse gases than the petroleum fuel it replaces.

RFS2 lays the foundation for achieving significant reductions in greenhouse gas emissions from the use of renewable fuels, reducing reliance on imported petroleum, and encouraging the development and expansion of our nation's renewable fuels sector. The EISA also includes a variety of new standards for lighting and residential and commercial appliances. The equipment includes residential refrigerators, freezers, refrigerator-freezers, metal halide lamps, and commercial walk-in coolers and freezers.

- ✓ **Infrastructure Investment and Jobs Act (IIJA)/Bipartisan Infrastructure Law (BIL) –** The Infrastructure Investment and Jobs Act (IIJA), commonly referred to as the Bipartisan Infrastructure Law (BIL), was signed into law on November 15, 2021. The legislation authorizes approximately $1.2 trillion in federal investments, including approximately $550 billion in new spending over five years, to modernize and improve the nation's transportation, water, energy, broadband, and other critical infrastructure systems. The BIL reauthorized surface transportation programs through Federal Fiscal Year 2026 and provides substantial funding for highways, bridges, public transportation, passenger and freight rail, active transportation, electric vehicle infrastructure, and resilience and sustainability programs. The legislation also established numerous competitive grant programs to improve safety, mobility, equity, climate resilience, and economic development, while supporting reductions in greenhouse gas emissions and advancing national infrastructure priorities.

- ✓ **Moving Ahead for Progress in the 21st Century (MAP-21) -** MAP-21, the Moving Ahead for Progress in the 21st Century Act (P.L. 112-141), was signed into law by President Obama on July 6, 2012. The ACT is the first long-term highway endorsement enacted since 2005 and creates an efficient multimodal plan to address the numerous challenges facing the nation's transportation network. Some of the challenges facing our nation's transportation system include improving safety, reducing travel times, creating a more efficient freight-movement system, and improving project delivery times. MAP-21 also supports the programs and policies enacted in 1991 that advanced the highway, transit, bike, and pedestrian systems.

- ✓ **Fixing America's Surface Transportation (FAST) Act** - On December 4, 2015, President Obama signed the Fixing America's Surface Transportation (FAST) Act (Pub. L. No. 114-94) into law—the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment. The FAST Act authorized $305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs. The FAST Act maintains our focus on safety, keeps intact the established structure of the various highway-related programs we manage, continues efforts to streamline project delivery, and, for the first time, provides a dedicated

source of federal dollars for freight projects. With the enactment of the FAST Act, states and local governments are now moving forward with critical transportation projects with the confidence that they will have a federal partner over the long term.

The Infrastructure Investment and Jobs Act, the 2021 Bipartisan Infrastructure Law (BIL), Moving Ahead for Progress in the 21st Century Act (MAP-21), and the Fixing America's Surface Transportation (FAST) Act all have funding allocations for multimodal infrastructure projects.

- ✓ **Heavy-Duty National Program -** The Heavy-Duty National Program was adopted on August 9, 2011, to establish the first fuel efficiency requirements for medium- and heavy-duty vehicles beginning with the model year 2014.

Proposed Rulemaking: Phase 2 Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles

As of June 2015, the U.S. Environmental Protection Agency (EPA) and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) are jointly proposing a national program that would establish the next phase of greenhouse gas (GHG) emissions and fuel efficiency standards for medium- and heavy-duty vehicles. The Phase 2 program significantly reduces carbon emissions and improves the fuel efficiency of heavy-duty vehicles, helping to address the challenges of global climate change and energy security. Phase 2 would save the heavy-duty vehicle industry billions of dollars in fuel, reduce the cost of transporting goods, cut fuel consumption, and reduce GHG emissions by 1 billion metric tons. Fuel consumption of tractor-trailers alone could decrease by 24 percent. The proposed Phase 2 standards, which begin in the model year 2021 (model year 2018 for trailers and 2021 for NHTSA's trailer standards) and culminate in standards for model year 2027, are the product of a comprehensive assessment of existing and advanced technologies and extensive stakeholder outreach.[1]

- ✓ **Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance -** Executive Order (EO) 13514 was signed by President Obama on October 5, 2009. It expands on the energy-reduction and environmental-performance requirements for federal agencies identified in EO 13423, Strengthening Federal Environmental, Energy, and Transportation Management. The goals of EO 13514 are as follows:

[1] Environmental Protection Agency. June 2015. *Cutting Carbon Pollution, Improving Fuel Efficiency, Saving Money, and Supporting Innovation for Trucks*. Available at: **http://www3.epa.gov/otaq/climate/documents/420f15900.pdf**

- Reduce petroleum consumption by 2% per year through FY2020 (applies to agencies with fleets of more than 20 vehicles) (Baseline FY2005). Reduce by 2% annually:
  - Potable water intensity by FY2020 (26% total reduction) (Baseline FY2007).
  - Industrial, landscaping, and agricultural water intensity by FY2020 (20% total reduction) (Baseline FY2010).
- Achieve 50% or higher diversion rate:
  - Non-hazardous solid waste by FY2015.
  - Construction and demolition materials and debris by FY2015.
- Ensure at least 15% of existing buildings and leases (>5,000 gross square feet) meet the Guiding Principles by FY2015, with continued progress towards 100%.
- Ensure that 95% of all new contracts, including non-exempt contract modifications, require products and services that are energy-efficient, water-efficient, bio-based, environmentally preferable, non-ozone-depleting, contain recycled content, and are non-toxic or less-toxic alternatives.

✓ **Executive Order 13693, Planning for Federal Sustainability in the Next Decade -** EO 13693 was signed by President Obama on October 5, 2009. The goal of EO 13693 is to maintain federal leadership in sustainability and GHG emissions reductions. EO 13693 promotes building energy conservation, efficiency, and management by reducing agency building energy intensity measured in British thermal units per gross square foot by 2.5 percent annually through the end of fiscal year 2025, relative to the baseline of the agency's building energy use in fiscal year 2015 and considering agency progress to date. EO 13693 also sets agency water use efficiency standards and management practices as well as mandates a fleet-wide per-mile GHG emissions reduction from agency fleet vehicles.

State of California

✓ **Senate Bill 1078, California Renewables Portfolio Standard Program -** SB 1078 establishes a renewable portfolio standard (RPS) for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. This target date was moved forward by SB 1078 to require compliance by 2010. In addition, electricity providers subject to the RPS must increase their renewable share by at least 1 percent each year. The outcomes of this legislation will affect regional electric transportation.

✓ **Senate Bill 1389 -** In 2002, the Legislature reconstituted the State's responsibility to develop an integrated energy plan for electricity, natural gas, and transportation fuels. The California Energy Commission (CEC) adopts and transmits to the Governor and Legislature a report of findings every 2 years. That report is called the Integrated Energy Policy Report (IEPR). The 2016 Integrated Energy Policy Report was adopted by the CEC on March 28, 2016. These reports recommend increasing

California's energy supplies, reducing energy demand, broadening the range of alternatives to conventional energy sources, and improving the State's energy delivery infrastructure.

- ✓ **Assembly Bill 2075, California Strategy to Reduce Petroleum Dependence -** AB 2075 (Chapter 936, Statutes of 2000) requires the CEC and the Air Resources Board (ARB) to develop and submit to the Legislature a strategy to reduce petroleum dependence in California. The statute requires the strategy to include goals to reduce the rate of growth in demand for petroleum fuels. In addition, the strategy must include recommendations to increase transportation energy efficiency and to expand the use of nonpetroleum fuels and advanced transportation technologies, including alternative-fuel vehicles, hybrid vehicles, and high-fuel-efficiency vehicles.

  The strategy, Reducing California's Petroleum Dependence, was adopted by the CEC and ARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and SUVs; and increase the use of nonpetroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

- ✓ **Assembly Bill 1007, Alternative Fuels Plan -** AB 1007 requires the CEC to prepare a state plan to increase the use of alternative fuels in California. The plan shall include an evaluation of alternative fuels for emissions or criteria air pollutants, air toxics, GHGs, water pollutants, and other harmful substances, and their impacts on petroleum consumption. The plan shall set goals for increased alternative fuel use in the state for the years 2012, 2017, and 2022 and recommend policies to ensure the alternative fuel goals are attained, including standards on transportation fuels and vehicle and policy mechanisms to ensure vehicles operating on alternative fuels use those fuels to the maximum extent feasible. The plan was adopted in December 2007.

- ✓ **Executive Order #S-06-06, Bioenergy Action Plan -** Executive Order #S-06-06 establishes targets for the use and production of biofuels and bio-power and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following targets to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce at least 20 percent of its biofuels in California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for biomass electricity use.

- ✓ **Executive Order #S-01-07, Governor's Low Carbon Fuel Standard -** Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through the establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard shall be incorporated into the State Alternative Fuels Plan required by AB 1007 and is

one of the proposed discrete early-action GHG-reduction measures identified by ARB pursuant to AB 32.

- ✓ **Senate Bill 1 (Million Solar Roofs) -** The Million Solar Roofs program under SB 1 (2006) sets a goal to install 3,000 megawatts of new solar capacity by 2017, moving the state toward a cleaner energy future and helping lower the cost of solar systems for consumers. This is a ratepayer-financed incentive program aimed at transforming the rooftop solar market by reducing costs over time. It provides up to $3.3 billion in financial incentives that decline over time.

- ✓ **Senate Bill 1368, Greenhouse Gas Emissions Performance Standard for Major Power Plant Investments -** SB 1368 was passed in September 2006 and requires the CEC to develop and adopt by regulation a GHG emissions performance standard for long-term procurement of electricity by local publicly owned utilities.

- ✓ **Assembly Bill 32 (California Global Warming Solutions Act of 2006) -** California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599), which established regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and established a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be achieved by enforcing a statewide cap on GHG emissions, phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

  AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions sufficient to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in larger, growing GHG sectors, such as transportation, than in sectors not anticipated to significantly increase emissions. Under AB 32, CARB must adopt regulations by January 1, 2011, to achieve reductions in GHGs to meet the 1990 emission cap by 2020.

  On December 11, 2008, CARB adopted its initial Scoping Plan, which serves as a roadmap for CARB's efforts to achieve the GHG reductions required by AB 32 through regulations subsequently enacted.

CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan. The current plan has identified new policies and actions to accomplish the State's 2030 GHG limit.

- ✓ **Assembly Bill 758 Energy: Energy Audit -** New state law promulgated under AB 758 mandates the California Energy Commission (CEC) to develop a comprehensive energy efficiency program for existing buildings. This bill will be implemented in three phases. In phase I, during the American Recovery and Reinvestment Act of 2009 (ARRA) implementation period (2010–2012), the CEC used ARRA funds to do state and local upgrade programs, workforce training, financing, and an outreach campaign. The CEC published the Comprehensive Energy Efficiency Program for Existing Buildings Scoping Report and adopted the AB 758 Action Plan. Phase II will focus on implementing the roadmap necessary for foundational No Regrets Strategies to take hold and Voluntary Pathways to scale to achieve energy efficiency goals, partnerships, and market development.

- ✓ Phase III will develop and institute Mandatory Approaches that will move energy efficiency practices into the mainstream. Transformation and maturation of the energy-efficiency marketplace will require partnerships and cooperation among all stakeholders.[2]

  On August 28, 2015, the CEC published the final version of the Existing Buildings Energy Efficiency Action Plan. The Plan provides a 10-year roadmap to leverage market forces and transform California's existing residential, commercial, and public building stock into high-performing, energy-efficient buildings.

  The results of this effort will be accelerated growth in energy-efficiency markets, more effective targeting and delivery of building upgrade services, improved quality of occupant and investor decisions, and vastly improved performance of California's buildings. Equally important, this effort will deliver substantial energy savings and greenhouse gas emissions reductions, contributing to the collective goal of reducing the impacts of climate change while improving the resilience of the state's built environment and economy.[3]

- ✓ **Assembly Bill 1493 (2009) / Advanced Clean Cars Program -** The Advanced Clean Cars Program under AB 1493 (referred to as Pavley I) requires the California Air Resources Board (CARB) to develop and

[2] California Energy Commission. Accessed September 1, 2015. *Comprehensive Energy Efficiency Program for Existing Buildings.* Available at: **http://www.energy.ca.gov/ab758/**

[3] California Energy Commission. 28 August 2015. *Existing Buildings Energy Efficiency Action Plan*. Available at: **http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR 05/TN205919_20150828T153953_Existing_Buildings_Energy_Efficiency_Action_Plan.pdf**

adopt standards for vehicle manufacturers to reduce GHG emissions coming from passenger vehicles and light-duty trucks at a "maximum feasible and cost-effective reduction" by January 1, 2005. Pavley I took effect for model years 2009 to 2016, and Pavley II, now referred to as "LEV (Low Emission Vehicle) III GHG", will cover 2017 to 2025. Fleet average emission standards would reach a 22 percent reduction by 2012 and a 30 percent reduction by 2016.[4]

As of January 2012, CARB adopted the Advanced Clean Cars program to extend AB 1493 through model years 2017 to 2025. This program will promote all types of clean fuel technologies, such as plug-in hybrids, battery electric vehicles, compressed natural gas (CNG) vehicles, and hydrogen-powered vehicles, while reducing smog and saving consumers' money in fuel costs. The following rules were fully implemented in 2025:

- New automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.
- Environmentally superior cars will be available across the range of models, from compacts to SUVs, pickups, and minivans.
- Consumer savings on fuel costs will average $6,000 over the life of the car. The savings more than offset the average $1,900 increase in vehicle price for the ultra-clean, high-efficiency technology.[5]

✓ **Senate Bill 2 Renewable Portfolio Standard -** California's Renewable Portfolio Standard (RPS), under Senate Bill (SB) 2 of 2011, sets a procurement goal for electricity retail sellers, including investor-owned utilities, electric service providers, and community choice aggregators, to 33 percent renewable energy sources by 2020. The RPS has three compliance periods: Period 1 (2011–2013), Period 2 (2014–2016), and Period 3 (2017–2020), serving as intermediate targets toward full compliance in 2020. The CEC is responsible for designating electrical generation facilities as renewable energy sources and enforcing RPS.[6]

✓ **Senate Bill No. 100 (SB 100) California Renewables Portfolio Standard Program: emissions of greenhouse gases –** SB 100 amends the Renewable Portfolio Standard's legislative findings and declarations to indicate that the program's goal is to reach a 50 percent renewable resource target by December 31, 2026, and a 60 percent target by December 31, 2030. The bill would require retail

[4] California Air Resources Board. 6 May 2013. *Clean Car Standards – Pavley, Assembly Bill 1493*. Available at: http://www.arb.ca.gov/cc/ccms/ccms.htm

[5] California Air Resources Board. Accessed 20 August 2015. California's Advanced Clean Car Program. Available at: http://www.arb.ca.gov/msprog/consumer_info/advanced_clean_cars/consumer_acc.htm

[6] 15 California Public Utilities Commission. 6 April 2015. California Renewables Portfolio Standard. Available at: http://www.cpuc.ca.gov/PUC/energy/Renewables/California Building Standards Commission. Accessed 26 June 2015. History. Available at: http://www.bsc.ca.gov/abt_bsc/history.aspx

sellers and local publicly owned electric utilities to procure a minimum quantity of electricity products from eligible renewable energy resources, with 44 percent of total kilowatthours sold to retail end-use customers by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030.

- ✓ **Part 11 of the California Code of Regulations: Green Building Code -** The California Green Building Standards Code, which is Part 11 of the California Code of Regulations, is commonly referred to as the CALGreen Code. The 2008 edition, the first edition of the CALGreen Code, contained only voluntary standards. The 2010 CALGreen Code is a mandatory code for state-regulated buildings and structures throughout California, effective January 1, 2011. The code requires building commissioning, a process for verifying that all building systems, such as heating and cooling equipment and lighting systems, are functioning at maximum efficiency.

- ✓ **California Building Energy Efficiency Standards: 2013 Title 24, Part 6 (California Energy Code) -** The California Energy Code (Title 24, Section 6) was created as part of the California Building Standards Code (Title 24 of the California Code of Regulations) by the California Building Standards Commission in 1978 to establish statewide building energy efficiency standards to reduce California's energy consumption. These standards include provisions applicable to all buildings, residential and nonresidential, which describe requirements for documentation and certificates that the building meets for the following types of systems, equipment, and appliances:

  - Air conditioning systems
  - Heat pumps
  - Water chillers
  - Gas- and oil-fired boilers
  - Cooling equipment
  - Water heaters and equipment
  - Pool and spa heaters and equipment
  - Gas-fired equipment, including furnaces and stoves/ovens
  - Windows and exterior doors
  - Joints and other building structure openings ("envelope")
  - Insulation and cool roofs
  - Lighting control devices

  The standards include additional mandatory requirements for space conditioning (cooling and heating), water heating, and indoor and outdoor lighting systems and equipment in non-residential, high-rise residential, and hotel or motel buildings. Mandatory requirements for low-rise residential buildings cover indoor and outdoor lighting, fireplaces, space cooling and heating equipment (including ducts and fans), and insulation of the structure, foundation, and water piping. In addition to the mandatory requirements, the standards call for greater energy efficiency, which can be achieved by choosing between performance and prescriptive compliance approaches. Separate sections apply to low-rise residential and to non-residential, high-rise residential, and hotel or motel buildings. In buildings designed for mixed use (e.g., commercial and residential), each section must meet the standards applicable to that type of occupancy.

The performance approach set forth under these standards provides for calculating an energy budget for each building and allows flexibility in building systems and features to meet that budget. The energy budget covers space conditioning (cooling and heating), lighting, and water heating. Compliance with the budget is determined using a CEC-approved computer software energy model. The alternative prescriptive standards require demonstrating compliance with specific minimum efficiency requirements for building components, such as building envelope insulation R-values; fenestration (areas, U-factors, and solar heat gain coefficients of windows and doors); heating and cooling; water heating; and lighting system design. These requirements vary depending on the building's location in the state's 16 climate zones.

California's Building Energy Efficiency Standards are updated on an approximately 3-year cycle as technology and methods evolve. As a result of the new law, AB 970, passed in the fall of 2000 in response to the state's electricity crisis, an emergency update to the standards went into effect in June 2001. The CEC then initiated an immediate follow-on proceeding to consider and adopt updated standards that could not be completed during the emergency proceeding. The 2013 Standards went into effect July 1, 2014. The 2016 Standards, which went into effect on January 1, 2017, will continue to improve upon the current 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings.

The 2013 Standards focus on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings, and include requirements that will enable both demand reductions during critical peak periods and future installations of solar electric and thermal systems.

- ✓ **California Senate Bill 350 -** SB 350 was approved by Governor Brown on October 7, 2015. SB 350 will: (1) increase the standards of the California RPS program by requiring that 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; (2) require the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030; (3) provide for the evolution of the Independent System Operator (ISO) into a regional organization; and (4) require the state to reimburse local agencies and school districts for certain costs mandated by the state through procedures established by statutory provisions. Among other objectives, the Legislature intends to double energy-efficiency savings in the final end uses of electricity and natural gas for retail customers through energy efficiency and conservation.

- ✓ **California Solar Initiative -** On January 12, 2006, the California Public Utilities Commission (CPUC) approved the California Solar Initiative (CSI; R.04-03-017), which provides $2.9 billion in incentives between 2007 and 2017. The CPUC will oversee a $2.5 billion program for commercial and existing

residential customers, funded through revenues and collected from gas and electric utility distribution rates. Furthermore, the CEC will manage $350 million allocated for new residential building construction, using funds already allocated to the CEC to support renewable projects between 2007 and 2011.

On March 2, 2006, the CPUC opened a proceeding to develop rules and procedures for the California Solar Initiative and to continue considering policies to advance the development of cost-effective, clean, reliable distributed generation. On August 21, 2006, the governor signed SB 1, which directs the CPUC and the CEC to implement the CSI program in accordance with specific requirements and budget limits set forth in the legislation, and to create 3,000 megawatts of new solar-produced electricity by 2017.

The CPUC has a rulemaking in progress to reconcile its decisions with SB 1, and it also continues to hold public workshops to continue designing program elements. Current incentives provide an upfront, capacity-based payment for a new system. The CSI incentive system will change in 2007 when it moves to performance-based payments. In its August 24, 2006, decision, the CPUC shifted the program from volume-based to performance-based incentives and clarified many elements of the program's design and administration.[7]

- ✓ **California Cap and Invest Program -** The California Air Resources Board (CARB) adopted the initial California Cap-and-Trade Program regulations on October 20, 2011, and adopted amended regulations on September 12, 2012, with the first auction of greenhouse gas (GHG) allowances held on November 14, 2012. The program established a market-based mechanism to reduce GHG emissions in a cost-effective and economically efficient manner. California was the first multi-sector cap-and-trade program in North America, following the Regional Greenhouse Gas Initiative (RGGI) in the northeastern United States and the European Union Emissions Trading System (EU-ETS). The program initially applied to large electric power plants and industrial facilities and was expanded in 2015 to include transportation fuels and natural gas suppliers, ultimately covering approximately 85 percent of California's GHG emissions. Pursuant to Assembly Bill 1207 (2025), the program has been extended and is now referred to as the **California Cap and Invest Program**, continuing the State's market-based approach to achieving long-term climate goals while generating revenues to support investments in clean transportation, sustainable communities, energy efficiency, and other programs that provide environmental, public health, and economic benefits throughout California.

- ✓ **Scoping Plan and First Update of the Scoping Plan -** Pursuant to AB 32, CARB developed a Scoping Plan to detail the approach towards reducing GHG emissions to 1990 levels by 2020. The Scoping Plan

[7] California Solar Initiative. Accessed 31 October 2007. Website. Available at: **http://www.gosolarcalifornia.ca.gov/csi/index.html**

was first considered by CARB in 2008 and must be updated every five years. CARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014.[8] The First Update identifies opportunities to leverage existing and new funds to further drive GHG emissions reductions through strategic planning and targeted low-carbon investments. The First Update defines CARB's climate change priorities for the next five years and lays the groundwork to reach the long-term goals set forth in EO S-3-05 and EO B-16-2012 (below). The Update highlights California's progress toward meeting the "near-term" 2020 GHG emissions reduction goals defined in the initial Scoping Plan.

It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. 20[9]

- ✓ **Executive Order S-3-05 -** On June 1, 2005, Governor Arnold Schwarzenegger signed EO S-3-05, which establishes GHG emissions reduction targets for California and directs the California Environmental Protection Agency Secretary to coordinate the oversight of efforts to achieve them. The targets established by Governor Schwarzenegger call for a reduction of GHG emissions to 2000 levels by 2010; to 1990 levels by 2020; and to 80 percent below 1990 levels by 2050.

- ✓ **Executive Order B-16-2012 -** EO B-16-2012 establishes long-term targets of reaching 1.5 million zero emission vehicles (ZEVs) on California's roadways by 2025 and sets ZEV purchasing requirements for State Government fleets. EO B-16-2012 also sets a 2050 target to reduce GHG emissions from the transportation sector to 80 percent below 1990 levels. In February 2013, an interagency working group developed the ZEV Action Plan, which identifies specific strategies and actions that State agencies will take to meet the Executive Order's milestones. The ZEV Action Plan states:

  - ZEVs are crucial to achieving the state's 2050 greenhouse gas goal of 80 percent emission reductions below 1990 levels, as well as meeting federal air quality standards. Achieving 1.5 million ZEVs by 2025 is essential to advance the market and put the state on a path to meet these requirements.

- ✓ **Executive Order B-18-12 -** Governor Edmund G. Brown, Jr. signed EO B-18-12 into law on April 25, 2012, which directs state agencies to reduce their grid-based energy purchases by at least 20 percent by 2018, as compared to a 2003 baseline. Pursuant to EO B-18-12, all new state buildings and major renovations beginning design after 2025 shall be constructed as Zero Net Energy facilities, with an interim target for 50 percent of new facilities beginning design after 2020 to be Zero Net Energy. State

[8] 19 California Air Resources Board. 13 July 2015. AB 32 Scoping Plan. Available at: http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm

[9] California Air Resources Board. 27 May 2014. First Update to the AB 32 Scoping Plan. Available at: **http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm**

agencies shall also take measures to achieve Zero Net Energy for 50 percent of the square footage of existing state-owned buildings by 2025. Further, the following measures relevant to energy are required:

- Any proposed new or major renovation of state buildings larger than 10,000 square feet shall use clean, on-site power generation, such as solar photovoltaic, solar thermal, and wind power generation, and clean back-up power supplies, if economically feasible;
- New or major renovated state buildings and build-to-suit leases larger than 10,000 square feet shall obtain LEED "Silver" certification or higher, using the applicable version of LEED;
- New and existing buildings shall incorporate building commissioning to facilitate improved and efficient building operation; and
- State agencies shall identify and pursue opportunities to provide electric vehicle charging stations and to accommodate future demand for charging infrastructure at employee parking facilities in new and existing buildings.

✓ **Executive Order B-30-15 -** EO B-30-15 reiterates EO S-3-05's 2050 GHG emissions target of 80 percent below 1990 levels and sets a new interim target of 40 percent below 1990 levels by 2030.

- CARB to update the Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent;
- CARB to update every three years the state's climate adaptation strategy;
- "State agencies shall take climate change into account in their planning and investment decisions and employ full life-cycle cost accounting to evaluate and compare infrastructure investments and alternatives."
- "State agencies' planning and investment shall be guided by the following principles:
  - Priority should be given to actions that both build climate preparedness and reduce greenhouse gas emissions;
  - Where possible, flexible and adaptive approaches should be taken to prepare for uncertain climate impacts;
  - Actions should protect the state's most vulnerable populations; and
  - Natural infrastructure solutions should be prioritized."
- OPR to establish a technical advisory group to help state agencies incorporate climate change impacts into planning and investment decisions.

Environmental Setting

Energy Consumption and Conservation

The study area comprises highways, railways, bicycle trails, state routes, roads, and Caltrans rights-of-way. This analysis assumes that automobiles, trucks, transit buses, and other forms of transportation

would continue to operate within the Merced region and use a variety of energy forms, including gasoline, compressed natural gas, diesel, and electricity. This section considers the supply and demand for both electricity and fossil fuels.

Energy is fundamental to the economy and the quality of life of the Merced County region. The primary energy source for the U.S. is petroleum (also referred to as "oil"), which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily since 1983; as of May 2026, it had reached 104 million barrels per day (IEA Oil Market Report). The world supply of oil is anticipated to peak (i.e., reach the point of maximum production) sometime between now and 2046, then begin a terminal decline that will place significant strain on the economy if not anticipated and mitigated. However, the timing of the peak depends on multiple, uncertain factors that will affect how quickly remaining oil is consumed, such as the amount of oil that still remains in the ground; how much of the amount in the ground can be extracted and produced based on technological, economic, and environmental feasibility; and future demand for oil.

The U.S., with approximately 4.5 percent of the world's population, accounts for nearly 20 percent of world oil consumption, roughly 20 to 20.5 million barrels per day (Energy Institute). U.S. oil production peaked around 1970 and declined every year until 2005 to about 8.3 million barrels per day. Since 2005, U.S. oil production has increased to 17.2 million barrels per day in 2020. The U.S. transportation sector is heavily dependent on oil and represented about 67 percent of U.S. petroleum consumption in 2023. Within the transportation sector, light vehicles (i.e., cars, light trucks [two-axle, four-wheeled trucks], and motorcycles) accounted for over 45 percent of petroleum-based energy consumption in 2023.

California's transportation sector is equally dependent upon oil, with petroleum-based fuels currently providing nearly all (90-95 percent) of California's transportation energy needs (California Energy Commission, 2024). Furthermore, transportation-related activities represent almost half (48 percent) of California's petroleum-based fuel consumption. California refineries increasingly rely on imported petroleum products to meet this demand. In 2003, the CEC and ARB adopted a two-part strategy to reduce the state's petroleum demand: promoting improved vehicle efficiency and increasing the use of alternative fuels. In 2006, CEC and ARB set a goal that 20 percent of all transportation energy in 2020 would come from alternative fuels. State plans, programs, and regulations for implementing this strategy are discussed in greater detail in the Regulatory Setting section below.

Similar to California and the U.S. as a whole, the Merced region relies primarily on oil to meet its transportation needs. Motor vehicles are the largest consumers of fuel in the region's transportation sector. After gasoline, diesel fuel is the most utilized transportation energy source. The primary consumers of diesel fuel in the transportation sector are heavy-duty trucks, with medium-duty trucks, buses, light-duty passenger cars, and railway locomotives accounting for the remaining diesel fuel consumption.

Alternative fuels are defined as fuels not derived from petroleum, such as natural gas, ethanol, and electricity. However, like petroleum, alternative fuels like natural gas and ethanol (which is primarily composed of diesel fuel) are also nonrenewable, finite resources. Electricity is also considered nonrenewable when generated from natural gas or coal, but considered renewable when generated from sources like solar, hydroelectric, or wind energy. Most alternative fuel facilities in the region supply compressed natural gas (CNG) or electricity. The region's limited alternative-fuel infrastructure severely constrains the use of alternative-fuel passenger vehicles.

Although average fuel efficiency for autos and trucks has improved over the last quarter-century, fuel consumption associated with the large increase in VMT has exceeded the fuel consumption reductions from improved efficiency, and total annual fuel consumption has continued to increase. The equipment and vehicles used in the construction of transportation infrastructure (e.g., roadway and highway improvements, rail lines) also consume energy. Currently, construction equipment and vehicles are generally dependent on petroleum-based fuels.

Energy Conservation and Global Climate Change

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with construction activities and the operation of passenger, public transit, and commercial vehicles and future land use development results in GHG emissions that cause global climate change (also referred to herein as "climate change" and "global warming"). In addition, alternative fuels such as natural gas (including CNG and liquid natural gas [LNG]), ethanol, and electricity (unless derived from solar, wind, nuclear, or other energy sources that do not produce carbon emissions) also result in GHG emissions and contribute to global climate change. An overview of climate change, the anticipated impacts of climate change on California, and the climate change impacts of the proposed 2026 RTP/SCS are provided in Chapter 3, Section 3.6 of this EIR. Impacts and mitigation measures associated with climate change also relate to conserving energy resources.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Criteria for Significance

The following significance criteria were used to determine the level of significance of impacts on energy resources and energy conservation resulting from the proposed Project. Significance criteria were developed based on Appendix G of the State CEQA Guidelines. In general, an individual improvement project or new land use development contained within the RTP/SCS would result in a significant energy impact if it:

- ✓ Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

✓ Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Impact 3.8.1 - Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

The proposed 2026 RTP/SCS plans improvements to the region's transportation network and identifies the locations of future land use development consistent with local city and county general plans through the year 2049. Since the transportation and land use development sectors account for a large share of energy consumption in the Merced region, implementing transportation network improvements and new development would affect the region's energy consumption through 2049. In addition, the construction of these improvements would increase energy consumption due to the operation of construction equipment and vehicles. Multiple factors beyond MCAG's control and outside the scope of the proposed 2026 RTP/SCS may influence future transportation- and land use development-related energy consumption patterns. These factors include, but are not limited to, state and federal regulatory actions; local land use decisions; technological improvements; regional economic conditions; the fuel-efficiency and fuel-source of private automobiles; the price of oil, gasoline, diesel, electricity, and other fuels; the source of region's electric power (i.e., proportion of renewable and nonrenewable sources); the amount of oil imported by the U.S. and others.

There are a few alternative fuel projects identified in the 2026 RTP/SCS that would help minimize Merced County's overall energy consumption. Vehicle fuel consumption was projected from a baseline year of 2023 through the RTP/SCS build-out year of 2049 using the EMFAC 2021 model. Table 3-54 quantifies the projected vehicle fuel consumption in gallons per day using EMFAC data. The total fuel consumption is projected to decrease from 460,400 gallons in 2023 to 380,400 gallons in 2049, representing a 17% reduction over 26 years. Diesel fuel consumption is projected to increase by 10% from 2035 to 2049, while gasoline consumption is projected to decrease by 6% during the same time. It should be noted that the fuel consumption estimate is an overestimate, as "Pavely and Low Carbon Fuels" will affect fleet efficiency.

TABLE 3-54
Merced County Vehicle Fuel Consumption (2023 through 2049)

DIRECTION	2023	2035	2049
Gasoline (gal/day)	252,800	203,100	191,100
Diesel (gal/day)	207,600	172,200	189,300
Total Fuel (gal/day)	460,400	375,300	380,400
Total Fuel per capita (gal/day)	1.61	1.21	1.15

Source: VRPA / MCAG, EMFAC 2021

The fuel consumption outputs reflect a decreasing trend in per capita fuel consumption. This analysis shows that, with the implementation of various multimodal improvements (bike/pedestrian facilities, transit infrastructure/service, etc.) and consideration of future land use development under the 2026 RTP/SCS, VMT and fuel consumption will decrease.

Although energy consumption would increase under the proposed 2026 RTP/SCS, the transportation improvements are designed to improve the energy efficiency of the regional transportation system by increasing the use of more fuel-efficient public transit, carpools, and vanpools, and improving circulation system levels of service. In addition, building codes have been developed to reduce energy consumption in future land use development. See the Climate Change discussion in Section 3.6 of this EIR for a detailed discussion of RTP actions that promote GHG emissions reductions, energy conservation, energy efficiency, and reduced fuel consumption.

Examples of transportation improvements included in the proposed 2026 RTP/SCS that would improve energy efficiency include transit improvements that would encourage optimized use of public transportation and enhanced transit programs with new routes operating at higher speeds. Public transportation provides a more energy-efficient mode of travel than single-passenger vehicles, thereby reducing the region's transportation energy consumption. Any reductions in traffic congestion achieved through enhanced transit operations would also enable more energy-efficient vehicular travel.

The SCS proposes allocating new land use development to support new transportation facilities, including the densification of land uses along major transportation corridors. The intent is to reduce auto use and increase transit system use, resulting in reduced energy resources.

The proposed 2026 RTP/SCS would also involve highway and arterial widenings and new freeway interchanges. This, in turn, would reduce travel time and congestion, thereby decreasing fuel consumption by individual vehicles. As shown in Table 3-54 above, total fuel consumption in Merced County is expected to decrease when comparing the baseline year (2023) to the buildout year (2049) of the RTP/SCS.

The 2026 RTP/SCS encourages the rail transport of goods to reduce congestion on the freeway system. Hauling goods by rail has a positive impact on energy. The Federal Railroad Administration estimates that intermodal rail is 2 to 4 times more fuel efficient than trucks. This indicates reduced energy efficiency of goods movement in the region and increased nonrenewable energy consumption.

The construction of transportation infrastructure and future land use development identified in the proposed 2026 RTP/SCS would involve the use of large quantities of construction equipment and vehicles that are generally dependent on nonrenewable petroleum-based fuels. However, it is not feasible to estimate the energy consumption associated with future transportation projects and land use development in the proposed 2026 RTP/SCS at this program-level of analysis.

Given the number of large-scale improvements programmed into the proposed 2026 RTP/SCS and the amount of future land use development planned through 2049, the increase in energy consumption associated with construction activities would be substantial. Although construction equipment and vehicles would be operated in accordance with all applicable rules and regulations, the substantial increase in energy consumption associated with the construction equipment and vehicles primarily powered by nonrenewable fuels under the proposed 2026 RTP/SCS is considered a significant impact.

Operation of the transportation improvements and future land use development identified in the proposed 2026 RTP/SCS would increase the total and per-capita amounts of diesel fuel consumption associated with the regional transportation network, as well as electricity and natural gas consumption. Since diesel and natural gas resources are nonrenewable, the increase in such energy consumption under the proposed 2026 RTP/SCS is considered a significant impact.

In addition to increased energy consumption directly associated with transportation activities, energy consumption would also increase as a result of new lighting including, but not limited to, lighting for land use developments, streets stops or stations, transit station parking structures, and rail tunnels; traffic signals; electronic signage; and other ancillary electric, natural gas, or other energy-consuming components of transportation improvements and new development that would be implemented under the proposed 2026 RTP/SCS. Increased energy consumption associated with these ancillary projects and land use development features is considered a significant impact.

The proposed 2026 RTP/SCS includes goals and policies that support smart growth through financial incentives, housing and mixed-use projects at existing and planned transit stations, support for local efforts to develop pedestrian master plans, and other activities that help reduce GHG emissions. However, since MCAG has no direct authority over land use planning and other local decisions, the extent to which local jurisdictions would implement the goals and policies supporting smart growth is unknown.

Mitigation Measures

The specific impacts on energy consumption and conservation will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **EN 3.8.1-1** Implementing agencies shall review energy impacts as part of any CEQA-required project-level environmental analysis and specify appropriate mitigation measures for any identified energy impacts.

✓ **EN 3.8.1-2** During the design and approval of transportation improvements and future land use development projects, the following energy efficiency measures shall be incorporated when applicable:

- The design or purchase of any lighting fixtures shall achieve energy reductions beyond an estimated baseline energy use for such lighting.
- LED technology shall be used for all new or replaced traffic lights, rail signals, and other new development lighting features compatible with LED technology.

✓ **EN 3.8.1-3** Implementing agencies should consider various best practices and technological improvements that can reduce the consumption of fossil fuels, such as:

- Expanding light-duty vehicle retirement programs.
- Increasing commercial vehicle fleet modernization.
- Implementing driver training modules on fuel consumption.
- Replacing gasoline-powered mowers with electric mowers.
- Reducing idling from construction equipment.
- Incentivizing alternative fuel vehicles and equipment
- Developing infrastructure for alternative-fueled vehicles.
- Implementing truck idling rules, devices, and truck-stop electrification
- Requiring electric truck refrigerator units.
- Reducing locomotives fuel use.
- Modernizing older off-road engines and equipment.
- Encouraging freight mode shift.
- Limit use and develop fleet rules for construction equipment.
- Requiring zero-emission forklifts.

✓ **EN 3.8.1-4** Implementing agencies should include energy analyses in environmental documentation and general plans with the goal of conserving energy through the wise and efficient use of energy. For any identified energy impacts, appropriate mitigation measures should be developed and monitored. MCAG recommends using Appendix F, Energy Conservation, of the *CEQA Guidelines.*

✓ **EN 3.8.1-5** Project and land use development implementing agencies should streamline permitting and provide public information to facilitate accelerated construction of solar and wind power.

✓ **EN 3.8.1-6** Project and land use development implementing agencies should adopt a "Green Building Program" to promote green building standards. Green buildings can reduce local environmental impacts, regional air pollutant emissions, and global greenhouse gas emissions. Green building standards cover everything from energy efficiency and the use of renewable resources to reduced waste generation and water use. For example, water-related energy use in 2017 consumed 20 percent

of the state's electricity. The residential sector accounts for 48 percent of both the electricity and natural gas consumption associated with urban water use. While interest in green buildings has been growing for some time, cost has been a major consideration, as energy-efficient building components and systems may require higher upfront investment. Initial costs can be a hurdle even when the installed systems will save money over the life of the building. Energy efficiency measures can reduce initial costs, for example, by reducing the need for oversized air conditioners to keep buildings comfortable. Undertaking a more comprehensive design approach to building sustainability can also save initial costs through the reuse of building materials and other means.

- ✓ **EN 3.8.1-7** Where identified, local governments should alter zoning to improve jobs/housing balance, create communities where people live closer to work, and bike, walk, and take transit as a substitute for personal auto travel, consistent with and in support of the SCS. Creating walkable, transit-oriented modes would generally reduce energy use and greenhouse gas emissions. Residential energy use (electricity and natural gas) accounts for less than 10 percent of California's greenhouse gas emissions. Furthermore, studies have shown that the type of housing (such as multi-family housing) and the size of a house are strongly related to residential energy use. Residents of single-family detached housing consume over 20 percent more primary energy than those of multifamily housing and 9 percent more than those of single-family attached housing.

- ✓ **EN 3.8.1-8** Project and land use development implementing agencies should increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in publicly owned vehicles, as well as those owned by franchisees of these agencies, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers.

- ✓ **EN 3.8.1-9** Bid solicitations for construction of projects should preference the use of alternative formulations of cement and asphalt with reduced GHG emissions to the extent that such cement and asphalt formulations are available at a reasonable cost in the marketplace. Solicitations should also preference the recycling of construction waste and debris if market conditions permit.

- ✓ **EN 3.8.1-10** All mitigation measures listed in Chapter 3, Section 3.6 (Climate Change) of this EIR are incorporated by reference and shall be implemented by implementing agencies to address energy conservation impacts.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on energy and energy resources, it is probable that such impacts

could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact 3.8.2 - Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Energy consumption from new projects that do not include residential uses, such as the proposed Project, is primarily regulated by Title 24, Part 11, of the California Green Building Standards Code (CalGreen). Because construction would be limited in both duration and extent and would be typical of infrastructure projects with no excess energy consumption, its impacts would not conflict with any plan for energy efficiency. Operational energy use would be minimal because Projects undertaken under the RTP/SCS would not only avoid energy consumption (roads) but also yield energy savings due to increased transit. In addition, projects undertaken during the RTP/SCS timeframe would themselves be subject to energy impacts analysis. Impacts of the proposed project would therefore be less than significant.

Mitigation Measures

- ✓ **EN 3.8.2-1** See Mitigation Measures for Impact 3.8.1.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce conflicts with, or obstruction of, a state or local plan for renewable energy or energy efficiency, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

3.9 GEOLOGY/SOILS/MINERAL RESOURCES

This section discusses the existing geology, soils, and seismic conditions in the Merced region. This section also describes the criteria for determining the significance of geologic, seismic, and soil impacts and, where appropriate, recommends mitigation measures to reduce project-related impacts (2026 RTP and SCS).

Regulatory Setting

Federal Agencies and Regulations

- ✓ **United States. Department of Agriculture, Natural Resources Conservation Service (NRCS) -** The NRCS maps soils and farmland use to provide comprehensive information necessary to understand, manage, conserve, and sustain the nation's limited soil resources. In addition to many other natural resource conservation programs, the NRCS manages the Farmland Protection Program, which provides funds to help purchase development rights to keep productive farmland in agricultural uses. Working through existing programs, USDA joins with State, tribal, or local governments to acquire conservation easements or other interests from landowners.

- ✓ **International Building Code (IBC) -** The International Building Code (IBC) is a model building code developed by the International Code Council (ICC). It has been adopted by most jurisdictions in the United States as a base code standard. The IBC addresses both health and safety concerns in buildings through prescriptive and performance-related requirements. The IBC is fully compatible with all other published ICC codes. The code provisions are intended to protect public health and safety while avoiding both unnecessary costs and preferential treatment of specific materials or methods of construction.

- ✓ **Earthquakes Hazard Reduction Act -** The Earthquake Hazards Reduction Act (EHRA) of 1977 (42 U.S.C. § 7701 et. seq.) established the National Earthquake Hazards Reduction Program as a long-term earthquake risk reduction program for the United States which focuses on: developing effective measures to reduce earthquake hazards; promoting the adoption of earthquake hazard reduction activities by federal, state, and local governments, building standards and model building code organizations, engineers, architects, building owners, etc.; improving the understanding of earthquakes and their effects on people and infrastructure through interdisciplinary research.

State Agencies and Regulations

- ✓ **California Department of Conservation** - In 1982, the State of California created the Farmland Mapping and Monitoring Program within the California Department of Conservation to provide maps and statistical data for use in planning for the best utilization of California's agricultural resources.

  The California Land Conservation Act of 1965, also known as the Williamson Act, is designed to preserve agricultural and open space lands by discouraging their premature and unnecessary conversion to urban uses. Williamson Act contracts, also known as agricultural preserves, offer tax incentives for agricultural land preservation by ensuring that land is assessed for its agricultural productivity rather than for its highest and best use.

- ✓ **California Building Code** - The *California Building Code* is another name for the body of regulations contained in Title 24, Part 2, of the California Code of Regulations, which is a portion of the California Building Standards Code. Title 24 is assigned to the California Building Standards Commission, which is responsible for coordinating all building standards by law. Under state law, all building standards must be codified in Title 24; otherwise, they are not enforceable. Published by the International Conference of Building Officials, the Uniform Building Code (UBC) is a widely adopted model building code in the United States. The California Building Code incorporates by reference the UBC with necessary California amendments. About one-third of the text within the California Building Code has been tailored for California earthquake conditions. Although widely accepted and implemented throughout the United States, the UBC can be adopted by local, city, and county jurisdictions in whole or in part.

- ✓ **Alquist-Priolo Special Study Zones** - California's Alquist-Priolo Act, originally enacted in 1972 as the Alquist-Priolo Special Studies Zones Act and renamed in 1994, is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy across the traces of active faults and strictly regulates construction in the corridors along active faults (Earthquake Fault Zones). It also defines criteria for identifying active faults, giving legal weight to terms such as "active," and establishes a process for reviewing building proposals in and adjacent to Earthquake Fault Zones. The Alquist-Priolo Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. This Act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards.

- ✓ **Seismic Hazards Mapping Act** - The Seismic Hazards Mapping Act of 1990 addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically induced landslides. The purpose of the Act is to protect the public from the effects of strong ground shaking, liquefaction, landslides, or

other ground failure, and other hazards caused by earthquakes. The program and actions mandated by the Seismic Hazards Mapping Act closely resemble those of the Alquist-Priolo Earthquake Fault Zoning Act.

- ✓ **Surface Mining Area Reclamation Act (SMARA)** - SMARA was enacted by the California Legislature to address the need for a continuing supply of mineral resources, and to prevent or minimize the negative impacts of surface mining on public health, property, and the environment. SMARA mandates the California Geological Survey (CGS) to provide objective economic-geologic expertise to assist in the protection and development of mineral resources through the land use planning process. The primary products are mineral land classification maps and reports for urban and non-urban areas of the state. Local agencies are required to use the classification information when developing land use plans and when making land use decisions.

- ✓ **California Department of Transportation (Caltrans)** - Caltrans' jurisdiction includes rights-of-way of state and interstate routes within California. Any work within the right-of-way of a federal or state transportation corridor is subject to Caltrans' regulations governing allowable actions and modifications to the right-of-way. Caltrans issues permits to encroach on land within its jurisdiction to ensure encroachment is compatible with the primary uses of the State Highway System, to ensure safety, and to protect the State's investment in the highway facility. The encroachment permit requirement applies to persons, corporations, cities, counties, utilities, and other government agencies. A permit is required for specific activities, including opening or excavating a state highway for any purpose; constructing or maintaining road approaches or connections; grading within rights-of-way on any state highway; or planting or tampering with vegetation growing along any state highway. The encroachment permit application requirements relating to geology, seismicity, and soils include information on road cuts, excavation size, engineering and grading cross-sections, hydraulic calculations, and mineral resources approved under SMARA.

- ✓ **California Health and Safety Code** - Sections 17922 and 17951–17958.7 of the California Health and Safety Code require cities and counties to adopt and enforce the current edition of the CBC, including a grading section. Sections of Volume 2 of the CBC specifically apply to select geologic hazards.

- ✓ **Public Resources Code -** Section 5097.5 of the Public Resources Code provides for the protection of cultural and paleontological resources and prohibits the removal, destruction, injury, or defacement of archaeological and paleontological features on any lands under the jurisdiction of State or local authorities.

- ✓ **Construction General Permit -** Stormwater discharges from construction activities in California are regulated by the State Water Resources Control Board (SWRCB) *National Pollutant Discharge*

Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-009-DWQ, NPDES No. CAS000002 (Construction General Permit). The Construction General Permit regulates construction activity that disturbs at least 1 ac of total land area. The Construction General Permit requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that describes the Erosion and Sediment Control Best Management Practices (BMPs) to be implemented during construction to control erosion and sedimentation, particularly during storm events.

Local Agencies and Regulations

- ✓ **General Plans and Seismic Safety Element** - City and county governments typically develop as part of their General Plans, safety and seismic elements that identify goals, objectives, and implementing actions to minimize the loss of life, property damage, and disruption of goods and services from man-made and natural disasters, including floods, fires, non-seismic geologic hazards, and earthquakes. Local governments may implement policies and develop ordinances to ensure adequate protection of people and structures from the risks associated with these hazards. Ordinances may address unreinforced masonry construction, erosion, or grading.

- ✓ **Merced Storm Water Group Storm Water Management Program (SWMP).** The SWMP was developed in 2007 to help the region meet the stormwater discharge requirements set forth by the Clean Water Act and to comply with General Permit Number CAS000004 and Water Quality Order No. 2003-0005-DWQ.

- ✓ **Merced County Sewage System Permitting Program-** This program governs the construction, modification, and destruction of onsite sewage systems in all unincorporated areas of the county. The Division of Environmental Health enforces this program. It outlines specific requirements for where sewage systems and septic tanks can be placed, as well as size specifications for the systems.

- ✓ **Merced County Well Ordinance and Wellhead Protection Program (Chapter 28 of the Merced County Code)-** These programs govern the construction, deepening, or destruction of any well within the unincorporated areas of the county. The regulations they impose apply to spacing from leach lines, septic tanks, and other public wells.

Environmental Setting

Merced County encompasses 1,935 square miles and is defined by distinct geological features, including the nearly level alluvial plains of the San Joaquin Valley and the foothills of the Coast Ranges. Elevations in the county range widely throughout the region. The San Joaquin Valley lies mostly below 1,000 feet.

Merced County is bordered by Fresno and Madera Counties to the south, Mariposa County to the East, Stanislaus County to the north, and Santa Clara and San Benito counties to the west.

Merced County covers portions of two of the eleven geologic provinces of California (Figure 3-10). These provinces include the eastern Coast Ranges and the San Joaquin Valley.

- ✓ Coast Ranges – The segment of the Coast Ranges province that lies within Merced County is characterized by north-northwest trending mountain ranges of moderate relief. These ranges are underlain primarily by folded marine sedimentary rocks and cut by the San Andreas Fault. Within the Coast Ranges province, sedimentary rocks trend mostly north-northwest and are moderately to mildly deformed along folds parallel to the mountain ranges.

- ✓ San Joaquin Valley – The southern part of the San Joaquin Valley province is a nearly flat north-trending trough bounded by the Coast Ranges, San Emigdio Mountains, and Sierra Nevada. Sedimentary rocks, largely of marine origin, underlie a relatively thin cover of alluvium.

Seismic and Geologic Hazards

Merced County is subject to several types of hazards associated with seismic and geological conditions. These include earthquake faults, ground shaking, and ground failure.

- ✓ **Faults**

  Merced County is subject to risks associated with several major fault systems (Figure 3-11) currently identified in the region and surrounding areas. Because of the considerable distance between populated and developed areas in the county and the faults adjacent to county lines, seismic hazards are considered low in Merced County.

  The San Andreas Fault is at least 600 miles long and parallels the western edge of the County at a distance of approximately 15 miles. The San Andreas Fault is considered the boundary between the North American Plate and the Pacific Plate. Although the geologic history of displacement (movement) along the San Andreas Fault is a difficult area of study for scientists, it is clear that the San Andreas system holds the greatest energy potential on the Richter Scale. The Bear Mountain Fault Zone runs parallel to the County's eastern border at a distance of approximately 5 miles. The Hayward, Greenville, and Calaveras Faults run to the northeast of the County's border.

Figure 3-10
MCAG Geological Provinces

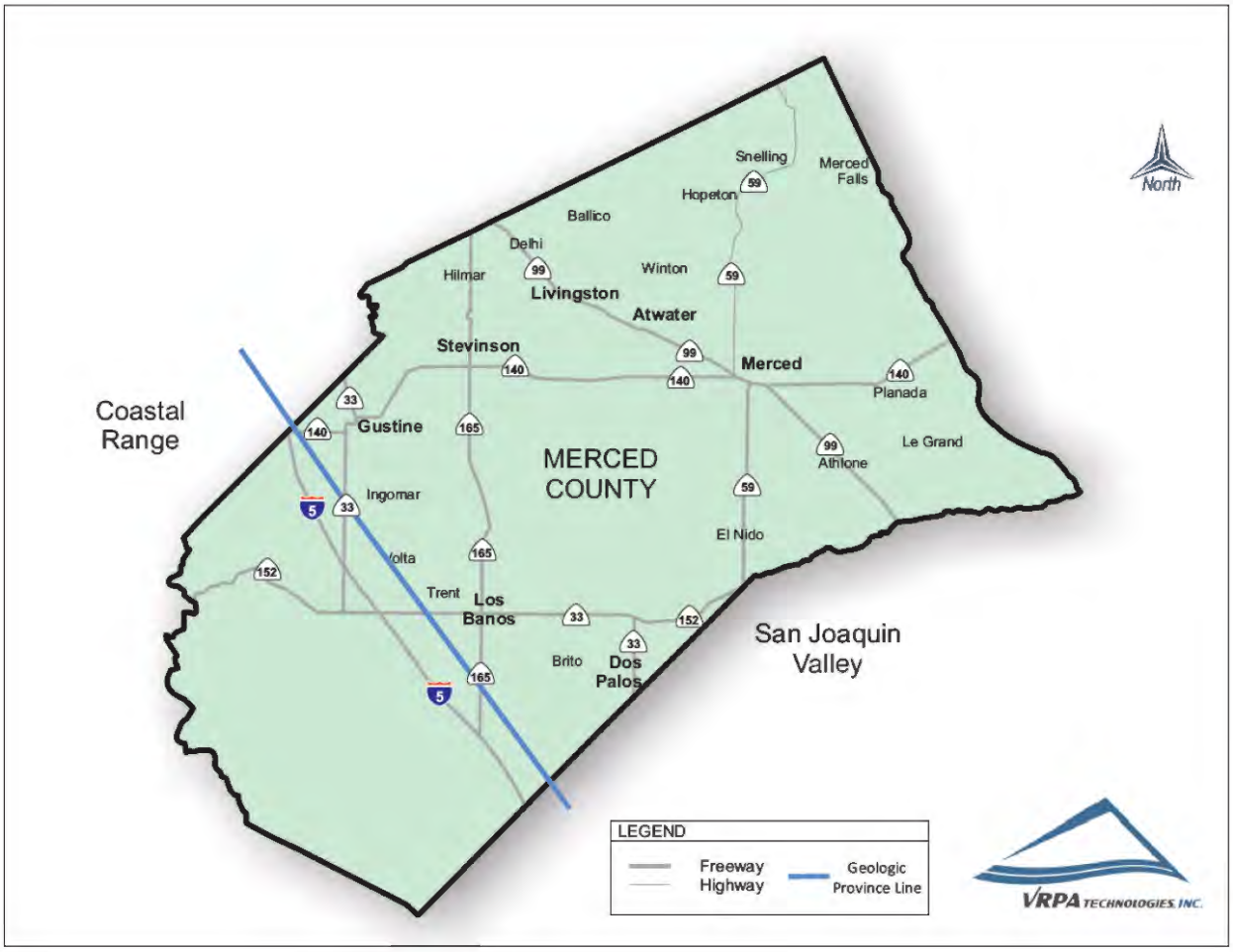
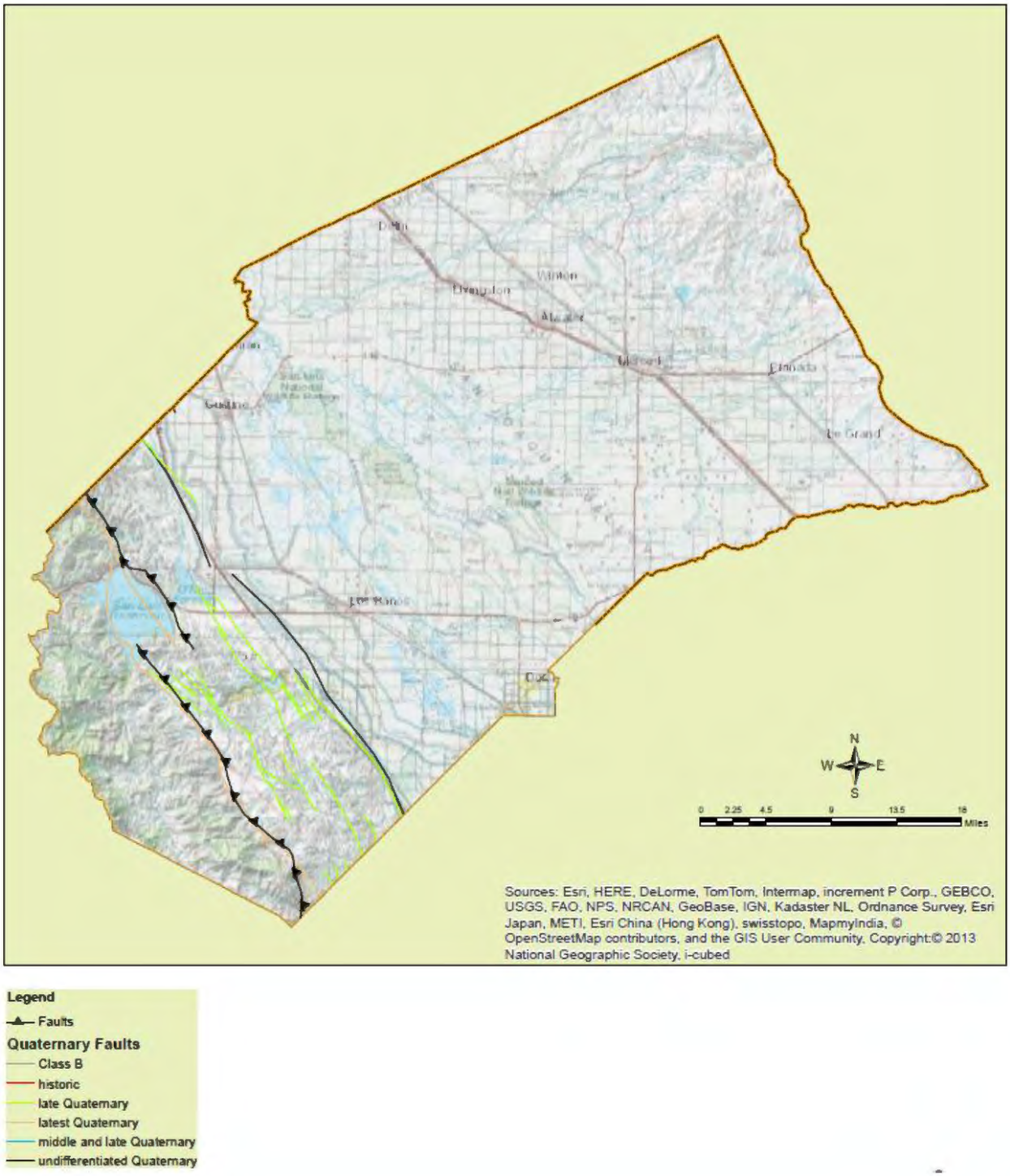


Figure 3-11
MCAG Major Faults



The only active fault identified within the county's borders is the Ortigalita Fault. It is located in the western portion of the county along the Coast Range Mountains. Historically, the Ortigalita Fault has not been active; however, surface rupture occurred during the Holocene.

✓ **Ground Shaking**

Merced County is located near one of the more seismically active faults of California, the San Andreas Fault, and may, at any time, be subject to moderate to severe ground shaking. Ground-shaking hazards arise from stress that accumulates deep within the Earth. This stress, or elastic strain, becomes so great that the rock can no longer be contained as a single rock mass and breaks. Movement along a fracture zone occurs, releasing an enormous amount of energy. This movement may or may not produce a surface fault rupture.

At any given location, the amount of the resulting shaking motion caused by the sudden movement to a large extent depends on local ground conditions (including the degree of water saturation) and may be as severe ten miles from the fault as immediately adjacent to it. Local ground conditions that affect the intensity of the ground shaking include the magnitude of the earthquake, the distance from

the epicenter, the type of rock or sediment in the area, and the degree of water saturation. Since the valley portions of Merced County are composed of alluvial deposits, the intensity of ground shaking would be greater than the foothill or mountain areas in the County that are composed of rock.

Ground shaking is commonly described in terms of peak ground acceleration as a fraction of the acceleration of gravity (g), or by using the Modified Mercalli (MM) Intensity Scale. The MM Intensity Scale is a descriptive method with 12 intensity levels. Table 3-55 below illustrates MM intensity, ranging from level I (shaking not felt) to level XII (total damage). MM intensities ranging from IV to X could cause moderate to significant structural damage.

The California Geological Survey Probabilistic Seismic Hazard Assessment (PSHA) predicts earthquake shaking hazards by analyzing historical seismic activity and fault slip rates. All faults that pose a threat of seismic shaking are included in the PSHA. The Great Valley Fault System is the only fault system identified in Merced County by PSHA. It runs along the Coast Range Mountains.

TABLE 3-55
Modified Mercalli Intensity Scale

Scale	Description
I.	Not felt except by a very few under especially favorable conditions.
II.	Felt only by a few persons at rest, especially on upper floors of buildings.
III.	Felt quite noticeably by people indoors, especially on the upper floors of buildings. Many do not recognize it as an earthquake. Standing automobiles may rock slightly. Vibration similar to the passing of a truck. Duration can be estimated.
IV.	Felt indoors by many to all people, and outdoors by few people. Some awakened. Dishes, windows, and doors disturbed, and walls make cracking sounds. Chandeliers and indoor objects shake noticeably. The sensation is more like a heavy truck striking building.
V.	Felt inside by most or all, and outside. Dishes and windows may break and bells will ring. Vibrations are more like a large train passing close to a house. Possible slight damage to buildings. Liquids may spill out of glasses or open containers.
VI.	Felt by everyone, outside or inside; many frightened and run outdoors, walk unsteadily. Windows, dishes, glassware broken; books fall off shelves; some heavy furniture moved or overturned; a few instances of fallen plaster. Damage slight to moderate to poorly built or badly designed structures.
VII.	Difficult to stand. Furniture broken. Damage light in building of good design and construction; slight to moderate in ordinarily built structures; considerable damage in poorly built or badly designed structures; some chimneys broken or heavily damaged.
VIII.	Damage slight in structures of good design, considerable in normal buildings with a possible partial collapse. Damage great in poorly built structures. Brick buildings easily receive moderate to extremely heavy damage. Possible fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX.	General panic. Damage slight to moderate (possibly heavy) in well-designed structures. Well-designed structures thrown out of plumb. Damage moderate to great in substantial buildings, with a possible partial collapse. Some buildings may be shifted off foundations.
X.	Many well-built structures destroyed, collapsed, or moderately to severely damaged. Most other structures destroyed, possibly shifted off foundation. Large landslides.
XI.	Few, if any structures remain standing. Numerous landslides, cracks and deformation of the ground.
XII.	Total destruction – everything is destroyed. Lines of sight and level distorted. Objects thrown into the air. The ground moves in waves or ripples. Large amounts of rock move position. Landscape altered, or leveled by several meters.

Source: U.S. Geology Survey, National Earthquake Information Center Website

The Working Group on California Earthquake Probabilities generated a report showing a 93 percent probability of a magnitude 6.7 or greater earthquake and a 16 percent probability of a magnitude 7.5 or greater earthquake in Northern California over the next 30 years. It identifies the Hayward/Rodgers Creek, San Andreas, and Calaveras faults as the most likely to cause these high-magnitude earthquakes.

Identified faults must be considered in planning and land use activities, and those identified as active deserve special consideration. No structure, including roadway bridges, should be built astride an

active fault. Similarly, utilities that cross such faults must be designed to remain functional even after a fault has moved.

✓ **Ground Failure**

Merced County has diverse microenvironments and activities that are susceptible to ground failure. Factors that cause or contribute to ground failure include, but are not limited to, soil type and condition, bedrock condition, moisture, presence or absence of vegetation, ground slope, seismic activity, and human activities. Specific types of ground failure and provided local data are described below:

- Landslides – The severity of landslide problems depends on the local soil and bedrock conditions, including moisture content, slope, and vegetation. Human activities also tend to destabilize Earth materials, thereby increasing the likelihood of ground failure. Human-induced causes include the cutting of slopes for roadways, overloading slopes with artificial fill, extensive irrigation, poor drainage, excessive groundwater withdrawal, and the removal of stabilizing vegetation. Additional moisture injected into soils by water and sewer systems is often detrimental in unstable areas and can cause landslides to recur in previously stable areas. Small landslides are common in mountainous areas as loose material moves naturally down slope. The western portion of the county poses the highest risk of landslides due to higher elevations in the Coast Range and proximity to active faults.
- Land Subsidence – Land subsidence is occurring within the San Joaquin Valley. This type of ground failure can be aggravated by ground shaking and is most often caused by the withdrawal of large volumes of fluid from underground reservoirs. Other causes of subsidence include sinking tectonics, oil and gas extraction, and deficient alluvial deposits. Subsidence from any cause accelerates maintenance problems on roads, canals, and underground utilities, and contributes to drainage and flood problems. Seismic activities also aggravate subsidence areas. Groundwater overdraft in the Los Banos and El Nido areas has led to regional subsidence.
- Clay soils – Fine-grained, cohesive clay soils that expand when moisture is added tend to lose their ability to support structural foundations. Swollen soil usually occurs during the winter and spring rains, and can lead to heaving of highways and roadways, disruption of utility lines, cracked driveways and foundations, and doors and windows that will not open properly. Construction may aggravate the problem by adding moisture, and heaving may not occur on site for 6 months to a year.
- Liquefaction – Liquefaction occurs when ground shaking produced by earthquakes destabilizes or “liquefies” saturated soils. Liquefaction can occur in certain types of soil, such as loosely consolidated sands, alluvial deposits, or poorly engineered fill. Liquefaction usually occurs in areas

associated with a water table, within 30 feet of the ground surface. Liquefaction can affect roads, runways, and utility lines.

- Erosion – Erosion is the process whereby materials of the earth's crust are worn down, removed by weathering, and deposited in other places by the flow of water, wind, and seismic activity. Erosion usually occurs in Merced County during winter and spring rains and during windstorms. Erosion can be an ongoing, gradual process or a rapid process during wind and flood events. Areas in Merced County where erosion may pose a problem include those with one or more of the following: alluvial fans, urban drainage systems, seismic activity, steep slopes, and stripped vegetation from recent fires. Proper engineering, grading, construction, landscaping, drainage, and enforcement can reduce erosion-related losses.

Soils

Merced County is primarily composed of sandy alluvial soils, but soil composition varies throughout the region, as shown in Figure 3-12. Alluvium in low-lying areas dominates more than 60 percent of the region. Various mapping units are identified on the General Soil Map for the County, each named for the major soil series that occurs within it. A soil series is a group of soils that have similar characteristics and layers.

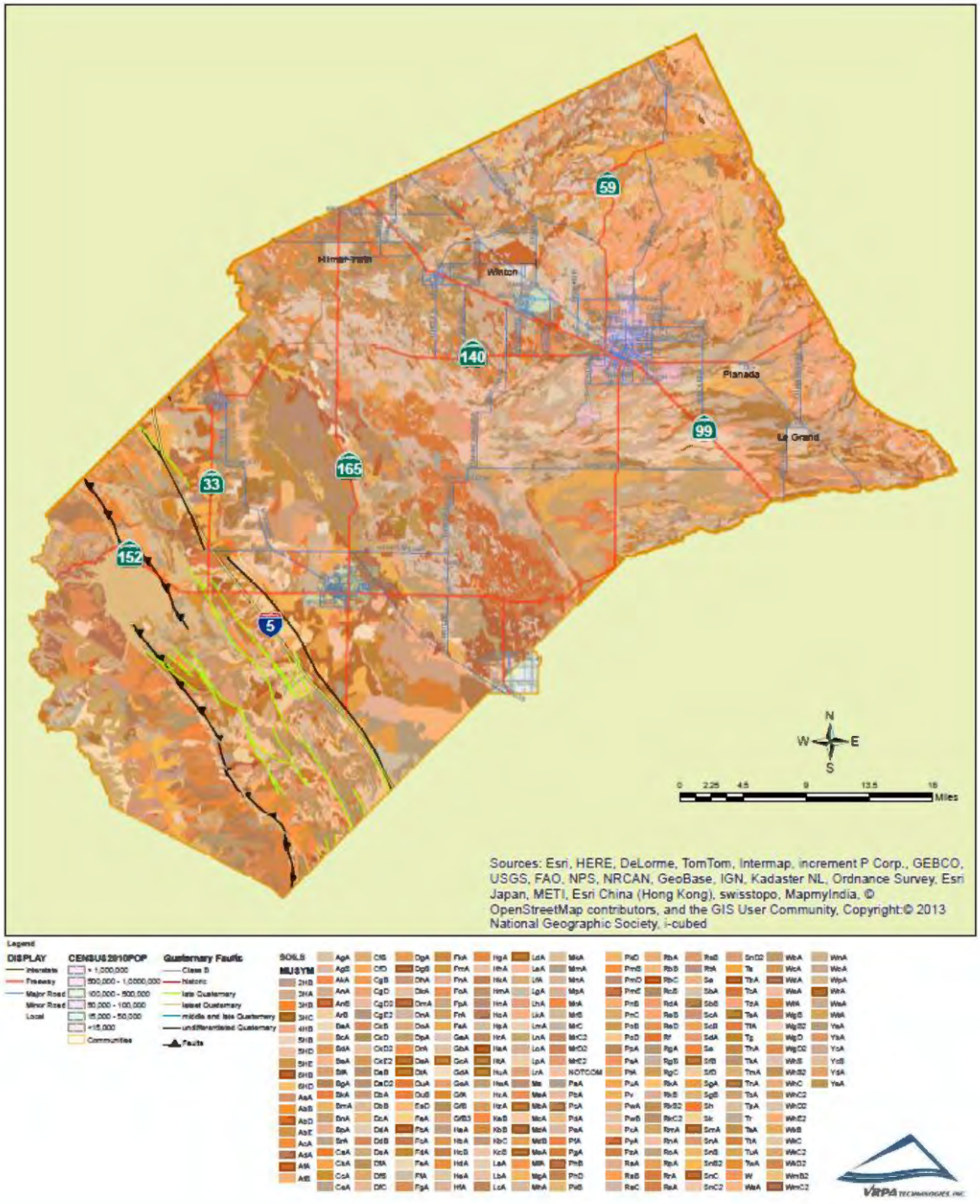
These mapping units are organized into eight major groups, based on soil characteristics and qualities, including slope. The soil groups, their associated geologic hazard risks, and their suitability for agricultural use are briefly described below.

- ✓ Group 1 areas are dominated by nearly level coarse to moderately fine textured alluvial soils. This group comprises 13 distinct soil associations and is used primarily for sheep grazing, cotton, and alfalfa production. Soil corrosiveness ranges widely, depending on the specific soil association.

- ✓ Group 2 areas are dominated by gently sloping to moderately steep slope areas and contain coarse to moderately fine textured alluvial soils. This group contains nine separate soil associations and is used predominantly for grazing, small grain, cotton, and alfalfa production, although some soils may support orchards. Shrink-swell and erosion hazards are moderate, as is soil corrosiveness.

- ✓ Group 3 areas consist of nearly level clayey soils. This group contains four soil associations and supports cotton, alfalfa, sugar beets, and other row crops. Shrink-swell potential for this soil group is severe.

Figure 3-12
MCAG Soil Composition



- ✓ Group 4 areas are dominated by nearly level soils with dense, very slowly to moderately slowly permeable subsoils or hardpan. This group contains four separate soil associations that support grain crops, cotton, and vineyards. The shrink-swell potential for this soil group is very high.

- ✓ Group 5 areas are dominated by sloping soils with dense, slowly to moderately permeable subsoils. This group consists of two soil associations that support range use and shallow-rooted crops. Shrink-swell potential ranges from low to high between the two soil associations.

- ✓ Group 6 areas consist primarily of coarse to moderately fine textured, gently sloping to very steep residual soils, and are found mainly above 2,500 feet. This group consists of seven soil associations that are best suited for rangeland, oil and timber production, and wildlife habitat. Shrink-swell potential and erosion hazard are generally severe.

- ✓ Group 7 areas are dominated by clayey soils on gently sloping to very steep slopes. This group contains seven soil associations that support citrus production, rangeland, and dryland crops. Shrink-swell and erosion potential are moderate to severe.

- ✓ Group 8 areas are dominated by very shallow soils, rock, or very coarse-textured soils. This group comprises four soil associations that are poorly suited for agricultural use and prone to flooding and severe erosion, posing a threat to construction sites.

As indicated above, Soil Groups 3, 4, 6, and 7 pose the greatest constraints on development or construction due to severe shrink-swell potential and the high corrosiveness of associated soils. Group 8 also has severe limitations due to the potential for flooding and erosion.

Mineral Resources

Sand and gravel are the primary mineral resources present in Merced County. There are also significant aggregate deposits concentrated along the San Joaquin River and its tributaries. The California Division of Mines and Geology has identified approximately 38 square miles of aggregate resource areas within Merced County. These resources contain an estimated 1.18 billion tons suitable for use in concrete production.

Mineral Resource Zone (MRZ) classifications are provided in accordance with the California State and Surface Mining and Reclamation Act (SMARA) of 1975 (Pub. Resources Code §2710-2796), described in further detail in the Regulatory Setting. MRZ-2 locations indicate the presence of or high likelihood of high-quality mineral resources.

MRZs are classified as follows:

- ✓ MRZ-1 – Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- ✓ MRZ-2 – Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists.
- ✓ MRZ-3 – Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- ✓ MRZ-4 – Areas where available information is inadequate for assignment into any other MRZ.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

This impact analysis examines each significance criterion individually and assesses how implementing the proposed RTP, including changes to the transportation network and land use patterns, may affect geology, seismicity, soils, and mineral resources. The analysis is programmatic and considers potential regional-level impacts, including land use and transportation.

By 2049, implementation of the proposed RTP will result in a land use pattern and transportation network that differ from existing conditions. Unless otherwise stated, "existing conditions" in the proposed RTP refer to conditions in the baseline.

The land use analysis requires assessing the projected growth (population, housing, and employment) for the region by 2049 and considering how that growth will affect geology, seismicity, soils, and mineral resources. A brief description of the region's geological and mineral resources, seismicity, and soil issues is provided above.

Criteria for Significance

- ✓ Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - ➢ Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area, or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
  - ➢ Strong seismic ground shaking.
  - ➢ Seismic-related ground failure, including liquefaction.
  - ➢ Landslides.

- ✓ Result in substantial soil erosion or the loss of topsoil.

- ✓ 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.

- ✓ 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.

- ✓ 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.

- ✓ 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.

- ✓ 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.

<u>Impact 3.9.1</u> – Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

ii) Strong seismic ground shaking.

iii) Seismic-related ground failure, including liquefaction.

iv) Landslides.

Seismic events can damage transportation infrastructure and land use development through ground shaking, liquefaction, surface rupture, and landslides. Projects located in areas near faults known to experience severe ground acceleration during earthquakes are particularly vulnerable to strong ground shaking and ground movement, including landslides. The potential for projects to be significantly affected by liquefaction would be higher in areas with shallow groundwater and unconsolidated soils, such as fill material and some alluvial soils. Property damage and public safety risks from seismic activity would be considered significant impacts in some cases.

Mitigation Measures

The specific impacts of seismic activity on damaged transportation infrastructure and other future land use development structures will be evaluated as part of the implementing agencies' project-level environmental review process for proposed individual transportation improvement projects and future land use development projects. Implementing agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG lacks land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **GSM 3.9.1-1** Implementing agencies will be responsible for ensuring that transportation improvement projects and future land use development projects are built to the seismic standards contained in the most recent edition of the Uniform Building Code (UBC).

- ✓ **GSM 3.9.1-2** Implementing agencies will ensure that transportation improvement projects and future land use development projects located within or across active fault zones comply with design requirements, published by the CGS, as well as local, regional, state, and federal design criteria for construction of projects in seismic areas.

- ✓ **GSM 3.9.1-3** Implementing agencies will guarantee that geotechnical analysis is conducted within construction areas to establish soil types and local faulting prior to the construction of transportation improvements, and future land use developments are subject to geotechnical analysis.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce damage to transportation infrastructure and other land use development structures from seismic activity, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact 3.9.2 – Result in substantial soil erosion or the loss of topsoil.

Some transportation improvement projects and future land use development require significant earthwork, increasing the potential for slope failure and long-term erosion. New land uses and transportation development included in the RTP and SCS could result in soil erosion or loss of topsoil due to newly exposed graded surfaces, excavation, stockpiling, or boring, which are necessary during development. Development may disturb previously undisturbed soils, and new developments may increase runoff, cause erosion, and potentially trigger slope failure. Earthwork can also alter unique geologic features. Transportation improvement projects and future land use development would be considered significant in some cases.

Several transportation improvement projects would involve substantial construction of new highway segments within previously undisturbed areas. Some of these projects could require significant earthwork or cuts into hillsides, which can become unstable over time. Road cuts can expose soils to erosion over the life of the Project, creating potential landslide and falling rock hazards. Engineered roadways can be undercut over time by stormwater drainage and wind erosion. Some areas would be more susceptible to erosion than others due to the naturally occurring soils with high erosion potential. Other improvement projects on steep grades or winding mountain passes would pose the greatest potential impacts. Regardless of the natural soil type, engineered soils can also erode due to poor construction methods and design features or a lack of maintenance. Appropriate construction methods, earthwork design, and road cut design can reduce this potential impact to a level below significance.

New roadways can also permanently alter unique geologic features, particularly in canyons, coastlines, and mountain passes. However, most improvement projects would occur in urbanized areas of the region or along existing transportation corridors. Nonetheless, new lanes may require earthwork that would affect existing natural geologic features.

Mitigation Measures

The specific impacts of project construction on slope failure and erosion will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG lacks land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **GSM 3.9.2-1** Implementing agencies will ensure that individual transportation improvement projects and future land use developments provide adequate slope drainage and appropriate landscaping to minimize the occurrence of slope instability and erosion.

- ✓ **GSM 3.9.2-2** Transportation improvement project and future land use development design features will include measures to reduce erosion from stormwater.

- ✓ **GSM 3.9.2-3** Road cuts will be designed to maximize the potential for revegetation.

- ✓ **GSM 3.9.2-4** Implementing agencies will ensure that transportation improvement projects and future land use developments avoid landslide areas and potentially unstable slopes wherever feasible.

- ✓ **GSM 3.9.2-5** Where practicable, transportation improvement projects and future land use development designs that would permanently alter unique geologic features will be avoided.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce slope failures and erosion caused by project construction, such impacts are likely to remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact 3.9.3 - 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.

Local geology can affect transportation infrastructure and the location for new development. Potentially significant impacts on property and public safety could result from subsidence and soil instability.

Subsidence has historically occurred within Merced County due to groundwater overdraft and petroleum extraction. Unconsolidated soils containing petroleum or groundwater often compress when the liquids are removed, causing the surface elevation to decrease. Improperly abandoned oil wells or underground hard rock mining can also cause localized subsidence.

Subsidence can also occur in areas with unconsolidated soils that have not historically shown elevation changes. Transportation infrastructure designs and future land use development must include appropriate reinforcement to minimize potential impacts of subsidence in areas where such activity has not been observed. Figure 3-13 and Figures 3-14 and 3-15 reflect future residential land use development associated with the SCS and soil type distribution throughout the county. As can be seen, most future land use development will be located within Alluvium Terrace soil areas, which are common on the Valley floor and can support transportation infrastructure and future development. Due to the generally more granular nature of the alluvium, it should be less likely to contain expansive clays.

Mitigation Measures

The specific impacts of subsidence and the presence of expansive soils will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG lacks land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **GSM 3.9.3-1** Implementing agencies will ensure that geotechnical investigations are conducted by a qualified geologist to identify the potential for subsidence and expansive soils.

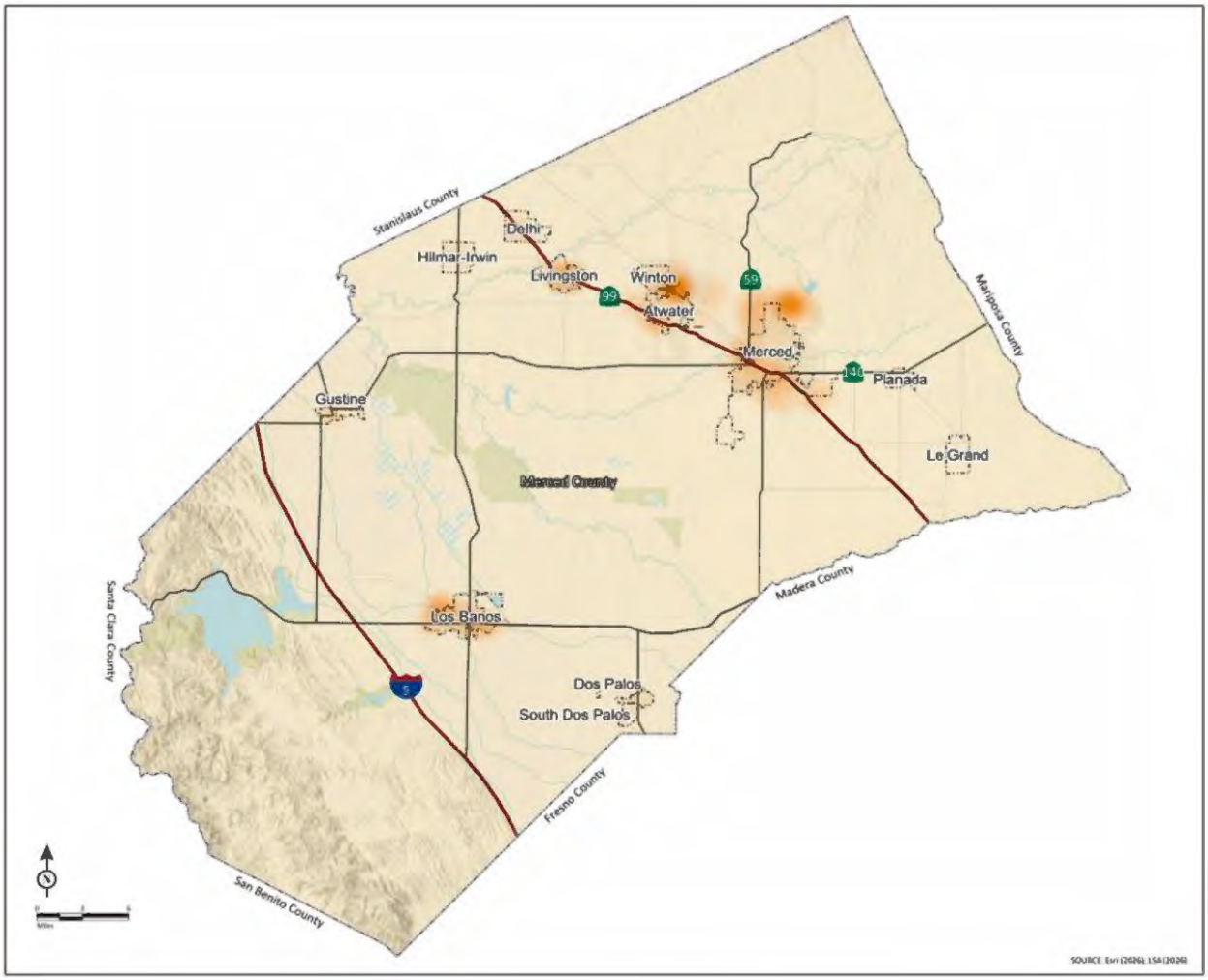
- ✓ **GSM 3.9.3-2** Implementing agencies should take corrective measures, such as structural reinforcement and replacing soil with engineered fill, which will be implemented in individual transportation improvement projects and future land use development site designs, where applicable.

- ✓ **GSM 3.9.3-3** Implementing agencies will ensure that, prior to preparing individual transportation improvement projects and future land use development site designs, new and abandoned wells are identified within construction areas to ensure the stability of nearby soils.

Significance After Mitigation

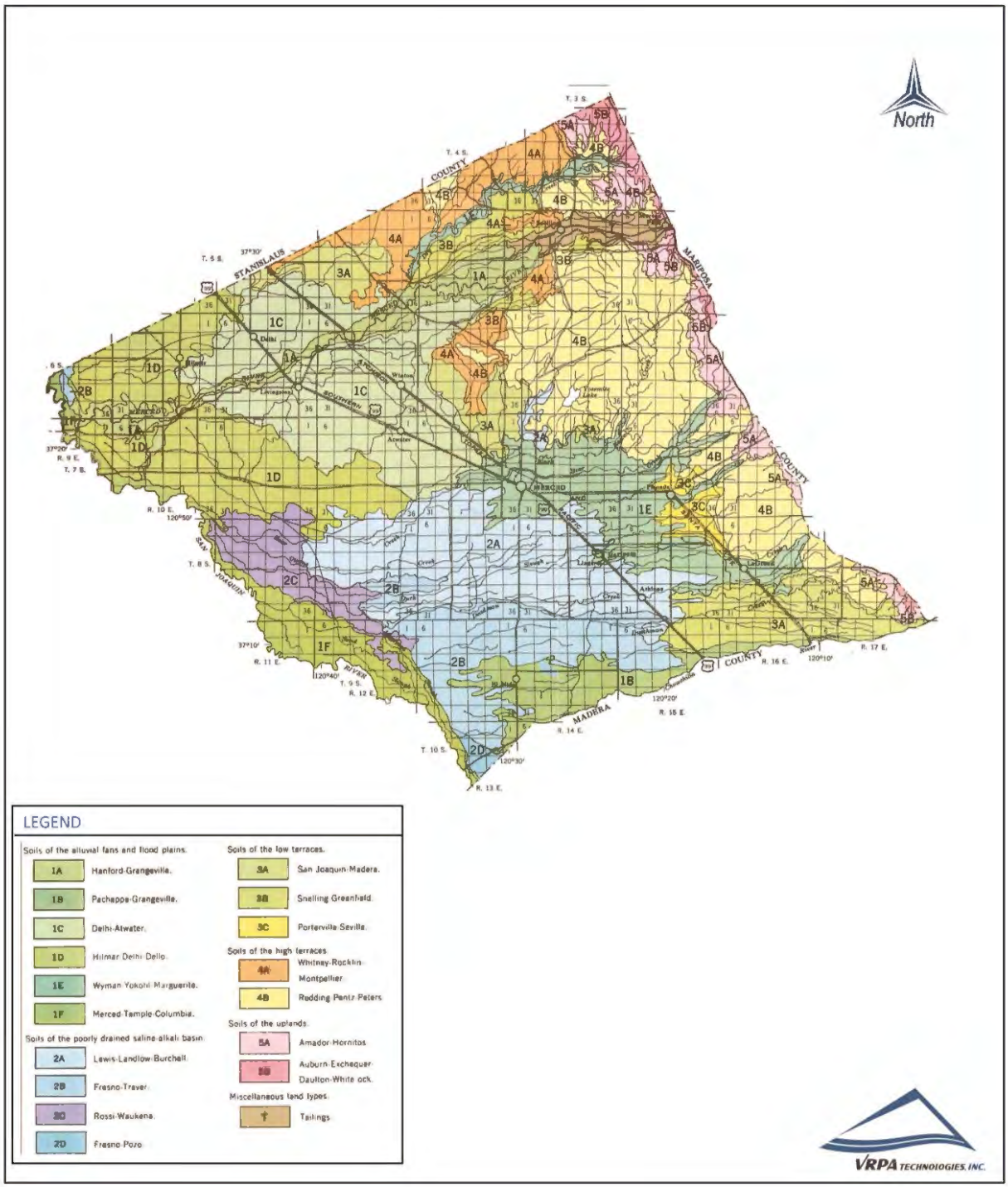
The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area.

FIGURE 3-13
Preferred Project (Scenario C) Residential Land Use Development



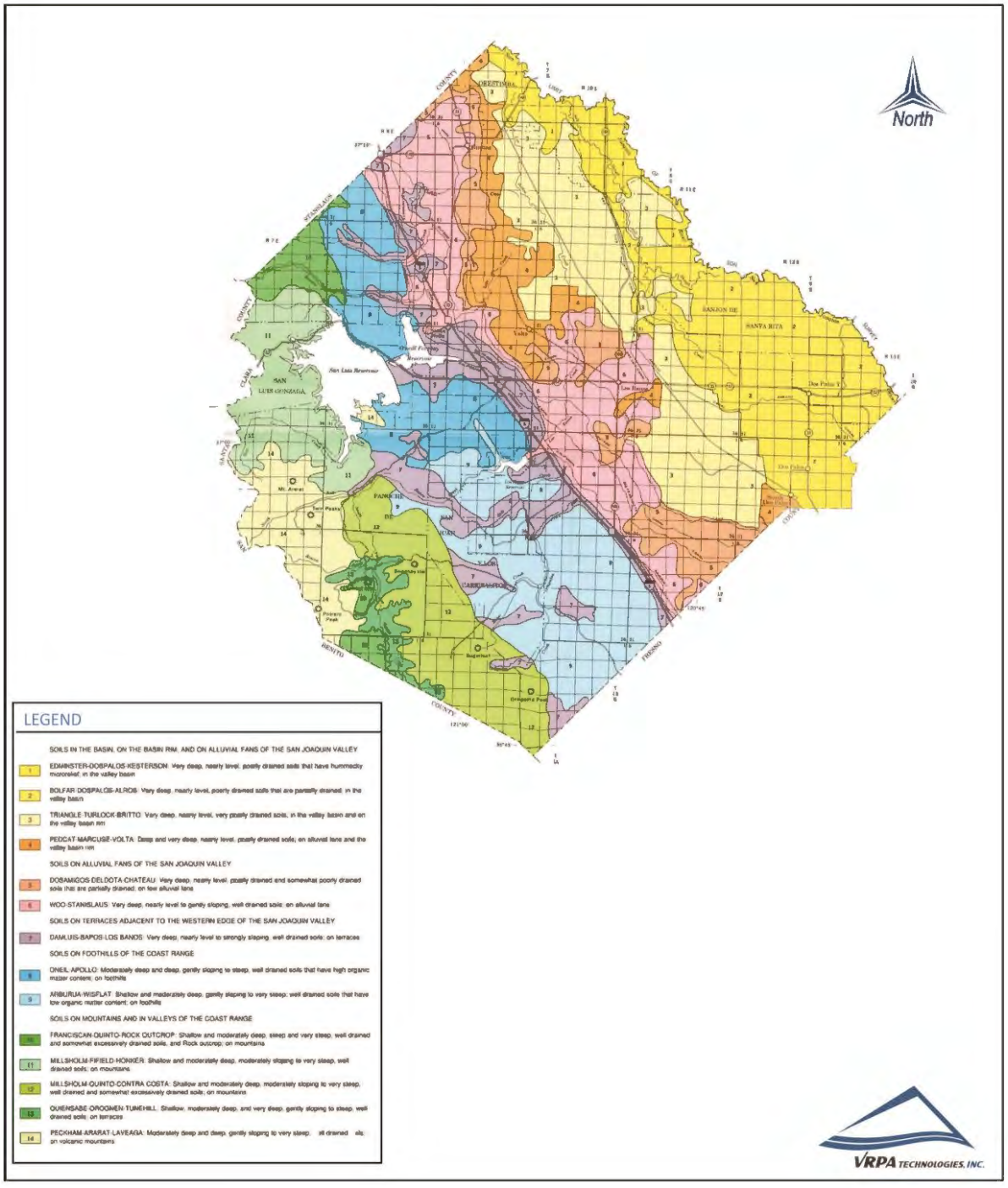
Source: MCAG

FIGURE 3-14
Eastern Merced County Soil Composition



Source: Natural Resources Conservation Service 1991, 2030 Merced County General Plan

FIGURE 3-15
Western Merced County Soil Composition



Source: Natural Resources Conservation Service 1991, 2030 Merced County General Plan

While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce subsidence and the presence of expansive soil**s,** it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact 3.9.4 – 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.

Local geology can affect transportation infrastructure and the location for new development. Potentially significant impacts to property and public safety could occur due to the presence of expansive soils.

Soils with high clay content can expand when wet, causing structural damage to surface improvements. These clay soils can occur in localized areas throughout Merced County, making it necessary to survey individual transportation improvement projects and future land use development areas extensively prior to construction. Each new transportation improvement project and future land use development location has the potential to contain expansive soils, although they are more likely to be encountered in lower drainage-basin areas. Expansive soils are generally removed during foundation work to avoid structural damage.

Figure 3-13 and Figures 3-14 and 3-15 reflect future land use development associated with the SCS and soil type distribution throughout the county. As can be seen, most future land use development will be located within Alluvium Terrace soil areas, which are common on the Valley floor and can support transportation infrastructure and future development. Due to the generally more granular nature of the alluvium, it should be less likely to contain expansive clays.

Mitigation Measures

The specific impacts of subsidence and the presence of expansive soils will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG lacks land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **GSM 3.9.4-1** Implementing agencies will ensure that geotechnical investigations are conducted by a qualified geologist to identify the potential for subsidence and expansive soils.

- ✓ **GSM 3.9.4-2** Implementing agencies should take corrective measures, such as structural reinforcement and replacing soil with engineered fill, which will be implemented in individual transportation improvement projects and future land use development site designs, where applicable.

- ✓ **GSM 3.9.4-3** Implementing agencies will ensure that, prior to preparing individual transportation improvement projects and future land use development site designs, new and abandoned wells are identified within construction areas to ensure the stability of nearby soils

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce impacts on property and public safety from expansive soils, it is likely that such impacts will remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact 3.9.5 - 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.

New development may be located in areas with soil that may not support septic tanks or alternative wastewater disposal systems, where sewers are unavailable.

Growth, development, and transportation project improvements will take place throughout the County in accordance with adopted general plans. Such developments and projects may be sited far from municipalities with sewer connections and, therefore, may require an on-site wastewater treatment system for disposal during project operation. If permanent facilities are constructed in remote locations, a septic tank or an alternative wastewater disposal system would have to be installed for operation. Based on the soil associations found within the County, soils there are expected to have some limitations for on-site wastewater disposal. A number of soils have slow permeability, a shallow duripan or hardpan, or high potential for flooding or ponding, preventing the soil from properly treating effluent. Because soils in extensive areas of the County appear to be unsuitable for supporting septic systems, impacts could be significant without appropriate project design and/or mitigation. It is unclear at this time how the implementation of the Proposed Project would result in the construction and operations of projects,

including the location, number, size, methods, and duration of construction activities. Because of the uncertainties inherent in this program-level assessment, the impacts of soils that cannot support alternative wastewater systems in the County cannot be accurately quantified. Project-level impacts would be addressed in future site-specific environmental analyses conducted when such projects are proposed by implementing agencies. However, because soil across extensive areas of the County appears unsuitable for supporting septic systems, this potential impact is considered significant.

Mitigation Measures

- ✓ **GSM 3.9.5-1** Implementing agencies shall conduct a geotechnical investigation, and a geotechnical report shall be prepared. The geotechnical report shall include a quantitative analysis to determine whether the on-site soils are suitable for an on-site wastewater treatment system. If it is determined that the soil cannot support a conventional on-site treatment system, non-conventional systems shall be analyzed. In many cases, these systems can reduce wastewater impacts from significant to less-than-significant levels. Implementation of these measures would reduce the importance of soils that cannot support traditional septic systems in areas where sewers are unavailable for wastewater disposal. In some cases, it will not be feasible to provide alternative wastewater disposal systems due to space constraints, lack of a service provider, and/or cost. Implementation and enforcement of conventional and non-conventional system measures would be within the responsibility and jurisdiction of the implementing agencies. For these reasons, the impacts of wastewater disposal would remain significant.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction for determining whether on-site soils are suitable for an on-site wastewater treatment system, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact 3.9.7 - Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Implementation of the proposed transportation improvements and future land use developments included in the 2026 RTP and SCS would include new transportation improvement projects and new residential, commercial, and other land uses, including infill development.

Local general plans, specific plans, and other land use plans include policies to protect existing and future mineral production and extraction activities from surrounding uses and require that future projects near mining activities have compatible land uses. In addition, compliance with the Surface Mining and Reclamation Act (SMARA) requirements for mineral resource sites and with notice requirements would further minimize impacts on locally important mineral resource sites. SMARA requires that companies obtain permits before conducting surface mining. The permit applications must describe the pre-mining environmental conditions and land use; the proposed mining and reclamation; how the mine will meet the performance standards; and how the land will be used after reclamation is complete. This information is intended to help the government determine whether to allow the mine and to set permit requirements that will protect the environment. Expansion or extension of the roadway network to implement proposed RTP and SCS projects would require additional land. Any improvements proposed in federal or state rights-of-way must obtain an encroachment permit from Caltrans and provide information on mineral resources to mitigate potential or known impacts. Therefore, the potential for an impact that would result in the loss of availability of a locally important mineral resource recovery site related to transportation improvement projects or future land use development from the implementation of the proposed RTP and SCS at the regional level is considered potentially significant for the reasons given below.

Transportation improvement projects or future land use development near locally important resources are regulated by local jurisdictions through policies incorporated into general plans, specific plans, and other land use plans; these policies protect mineral resource production and extraction activities. In addition, compliance with SMARA requirements for mineral resource sites and notice requirements would further minimize impacts to locally important mineral resource sites. Therefore, the potential for an impact that would result in the loss of availability of a locally important mineral resource recovery site related to transportation improvements from the implementation of the proposed RTP and SCS is considered significant for the reasons given below.

Mitigation Measures

The specific impacts resulting 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 will be evaluated as part of

the implementing agencies' project-level environmental review process regarding their proposed individual transportation improvement project and future land use development projects. Implementing agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG lacks land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **GSM 3.9.7-1** The implementing agency should protect against the loss of availability of a locally important mineral resource recovery site through policies incorporated into general plans, specific plans, and other land use plans. Such policies would protect mineral resource production and extraction activities.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce 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, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact 3.9.6 – 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.

Transportation improvements and future land use development associated with implementing the proposed RTP and SCS could reduce the availability of important designated mineral resources in the region by making certain mineral resources inaccessible for future extraction.

Local jurisdictions have policies to manage mineral resources through general plans and are required to respond to mineral resource recovery areas that have been designated MRZ-2 locations under SMARA, indicating that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists, thus reducing the impact to a designated mineral resource. However, local policies will not prevent the potential loss of availability of such mineral resources that would be of value to the region and the state's residents, because decisions to implement transportation improvement projects, permit uses and developments, or protect designated mineral resources are local.

Potential, but unproven mineral resource lands are designated as MRZ-3. These lands can be found along the San Joaquin River in Merced County, but they may not be of sufficient quality to produce concrete.

Mines and other mineral resources, such as major oil and natural gas fields, are located throughout Merced County. Transportation improvement projects and future land use development projects may be proposed along alignments or near areas that will affect mineral resource lands.

Therefore, the potential for a loss of availability of a designated mineral resource related to transportation improvement projects and future land use developments from the implementation of the proposed 2026 RTP and SCS at the regional level is considered significant.

Mitigation Measures

The specific impacts on the loss of availability of a designated mineral resource that would be of value to the region and the residents of the state will be evaluated as part of the implementation agencies' project-level environmental review process regarding their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG lacks land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **GSM 3.9.6-1** The implementing agency should protect against the loss of availability of a designated mineral resource through identification of locations with designated mineral resources and adoption and implementation of policies to conserve land that is most suitable for mineral resource extraction from development of incompatible uses.

- ✓ **GSM 3.9.6-2** Where possible, transportation improvement projects and future land use development sites will be designed by responsible agencies to limit potential impacts on mineral resource lands.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce mineral resource impacts, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation

strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact 3.9.8 - 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.

Implementation of the proposed transportation improvements and future land use developments in the 2026 RTP/SCS would include new transportation projects and new residential, commercial, and other land uses, such as infill development.

Local general plans, specific plans, and other land use plans include policies to protect existing and future mineral production and extraction activities from surrounding uses and require that future projects near mining activities have compatible land uses. In addition, compliance with the Surface Mining and Reclamation Act (SMARA) requirements for mineral resource sites and with notice requirements would further minimize impacts on locally important mineral resource sites. SMARA requires that companies obtain permits before conducting surface mining. The permit applications must describe the pre-mining environmental conditions and land use, the proposed mining and reclamation, how the mine will meet the performance standards, and how the land will be used after reclamation is complete. This information is intended to help the government determine whether to allow the mine and to set permit requirements that will protect the environment. Expanding or extending the roadway network to implement the proposed RTP/SCS projects would require additional land. Any improvements proposed in federal or state rights-of-way are required to obtain an encroachment permit from Caltrans and provide information on mineral resources to mitigate potential or known impacts. Therefore, the potential for an impact that results in the loss of availability of a locally important mineral resource recovery site related to transportation improvement projects or future land use development from the implementation of the proposed RTP/SCS at the regional level is considered potentially significant for the reasons given below.

Transportation improvement projects or future land use development near locally important resources are regulated by local jurisdictions through policies incorporated into general plans, specific plans, and other land use plans; these policies protect mineral resource production and extraction activities. In addition, compliance with SMARA requirements for mineral resource sites and notice requirements would further minimize impacts to locally important mineral resource sites. Therefore, the potential for an impact that results in the loss of availability of a locally important mineral resource recovery site related to transportation improvements from the implementation of the proposed RTP/SCS is considered potentially significant for the reasons given below.

Mitigation Measures

The specific impacts resulting 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 will be evaluated as part of the implementing agencies' project-level environmental review process regarding their proposed individual transportation improvement project and future land use development projects. Implementing agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **GSM 3.9.8-1** The implementing agency should protect against the loss of availability of a locally important mineral resource recovery site through policies incorporated into general plans, specific plans, and other land use plans. Such policies would protect mineral resource production and extraction activities.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce 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, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

3.10 HAZARDS AND HAZARDOUS MATERIALS

This section of the EIR provides an overview of hazards and hazardous-waste issues in Merced County. It also discusses potential impacts resulting from the implementation of the Project (2026 RTP/SCS) and appropriate mitigation measures to address known impacts.

Regulatory Setting

Numerous laws and regulations at all levels of government help minimize the potential impacts of the use and handling of hazardous materials. The most relevant federal, state, and local hazardous materials laws and regulations are summarized in this section.

Federal Agencies and Regulations

- ✓ **United States Environmental Protection Agency (EPA) -** The EPA is the primary federal agency charged with protecting human health and with safeguarding the natural environment: air, water, and land. EPA works to develop and enforce regulations that implement environmental laws enacted by Congress. EPA is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for issuing permits and for monitoring and enforcing compliance. Since 1970, the EPA has enacted numerous environmental laws, including the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), and the Toxic Substances Control Act (TSCA).

- ✓ **Resource Conservation and Recovery Act (RCRA) -** The 1976 Resource Conservation and Recovery Act (RCRA) is the principal federal law that regulates the generation, management, and transportation of waste. The RCRA gave the EPA authority to develop strict requirements for all aspects of hazardous waste management, including treatment, storage, and disposal. In addition, RCRA requires inspections, enforcement, and formal corrective action for facilities that do not comply with permit terms and other requirements. To achieve these goals, RCRA established three programs:

  - Subtitle D (Solid Waste Program): Encourages states to develop comprehensive plans to manage non-hazardous industrial solid waste and municipal solid waste, sets criteria for municipal solid waste landfills and other solid waste disposal facilities, and prohibits the open dumping of solid waste.
  - Subtitle C (Hazardous Waste Program): Establishes a system for controlling hazardous waste from the time it is generated until its ultimate disposal ("cradle to grave").

- Subtitle I (UST Program): The underground storage tank (UST) program regulates the design and operation of underground storage tanks containing hazardous substances and petroleum products.

A cornerstone of RCRA is the management of waste "from cradle to grave," in other words, from generation to transportation, treatment, storage, and ultimately disposal. To ensure this, the RCRA uses a manifest system, a data sheet that identifies each waste shipment. Identification from generators and transporters, and permits for Toxic Substance Disposal Facilities (TSDFs), are required to enable tracking of waste shipments, including special hazardous waste. The manifest will accompany the waste from the generating facility to the final disposal site, enabling "cradle to grave" tracking of the waste.

- ✓ **Hazardous Materials Transportation Act -** The U.S. Department of Transportation (DOT) regulates hazardous materials shipping at the federal level (49 CFR Parts 171-180). Congress passed the Hazardous Materials Transportation Act in 1975 to give authority to the Secretary of Transportation "to provide adequate protection against the risks to life and property inherent in transporting hazardous materials in commerce."

- ✓ **Research and Special Programs Administration (RSPA) -** The RSPA of DOT issues the hazardous materials regulations. The regulations cover the definition and classification of hazardous materials, communication of hazards to workers and the public, packaging and labeling requirements, operational rules for shippers, and training. They apply to interstate, intrastate, and foreign commerce by air, rail, ship, and motor vehicles, and also cover hazardous waste shipments. The Federal Highway Administration (FHWA) is responsible for the routing of hazardous materials on highways and for highway safety permits. The U.S. Coast Guard regulates bulk transport by vessel. The hazardous materials regulations include emergency response provisions, such as incident reporting requirements. Reports of major incidents go to the National Response Center, which, in turn, is linked to CHEMTREC, a service of the chemical manufacturing industry that provides details on most chemicals shipped in the U.S.

- ✓ **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) -** CERCLA (generally referred to as Superfund) was enacted by Congress on December 11, 1980. CERCLA established a trust fund to provide for toxic waste cleanup when no responsible party could be identified. Additionally, this Act gave EPA the power to identify the parties responsible for any release and to ensure their cooperation in the cleanup. The law authorizes two kinds of response actions:

  - Short-term Removals: Actions are taken to address releases or threatened releases that require a prompt response.

- Long-term Remedial Response: Actions are taken to permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life-threatening.

These actions can be conducted only at sites listed on EPA's National Priorities List (NPL). CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided guidelines and procedures for responding to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the NPL, the list of hazardous waste sites eligible for long-term remedial action financed by the federal Superfund program. CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

- ✓ **Superfund Amendments and Reauthorization Act (SARA) -**The Superfund Amendments and Reauthorization Act (SARA) of 1986 reauthorized CERCLA to continue cleanup activities around the country. Several site-specific amendments, definitions, clarifications, and technical requirements were added to the legislation, including additional enforcement authorities.

- ✓ **Emergency and Community Right to Know Act (EPCRA) -** Also known as Title III of SARA, EPCRA was enacted by Congress as the national legislation on community safety. This law was designed to help local communities protect public health, safety, and the environment from chemical hazards. EPCRA was passed in response to concerns regarding the environmental and safety hazards posed by the storage and handling of toxic chemicals. EPCRA establishes requirements for federal, state, and local governments, tribes, and industry regarding emergency planning and "Community Right-to-Know" reporting on hazardous and toxic chemicals. The Community Right-to-Know provisions help increase the public's knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. States and communities, working with facilities, can use the information to improve chemical safety and protect public health and the environment. To implement EPCRA, Congress required each state to appoint a State Emergency Response Commission (SERC). The SERCs were required to divide their states into Emergency Planning Districts and to name a Local Emergency Planning Committee for each district.

- ✓ **Toxic Substances Control Act (TSCA) -** The Toxic Substances Control Act (TSCA) of 1976 was enacted by Congress to give EPA the ability to track the 75,000 industrial chemicals currently produced or imported into the United States. EPA repeatedly screens these chemicals and may require reporting or testing for those that may pose environmental or human health hazards. EPA can ban the manufacture and import of those chemicals that pose an unreasonable risk.

- ✓ **Chemical Accident Prevention Provisions** - When Congress passed the Clean Air Act Amendments of 1990, it required the EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. These rules, which are built upon existing industry codes and standards, require companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program.

- ✓ **EPA Region 9, Preliminary Remediation Goals** - Region 9 is the Pacific Southwest Division of the EPA, which includes Arizona, California, Hawaii, Nevada, the Pacific Islands, and over 140 Tribal Nations. Preliminary Remediation Goals (PRGs) are tools for evaluating and cleaning up contaminated sites. PRGs for the Superfund/RCRA programs are risk-based concentrations derived from standardized equations that combine exposure assumptions with EPA toxicity data. They are considered protective for humans (including sensitive groups) throughout their lifetimes. However, PRGs are not always applicable to a particular site and do not address non-human health issues such as ecological impacts. Region 9's PRGs are viewed as agency guidelines rather than legally enforceable standards.

- ✓ **Federal Aviation Administration Functions** - The Federal Aviation Administration (FAA) has primary responsibility for the safety of civil aviation. The FAA's major functions regarding hazards include the following: (1) developing and operating a common system of air traffic control and navigation for both civil and military aircraft, (2) developing and implementing programs to control aircraft noise and other environmental effects of civil aviation, (3) regulating U.S. commercial space transportation, and (4) conducting reviews to determine that the safety of persons and property on the ground are protected.

- ✓ **Federal Response Plan** - The Federal Response Plan of 1999 is a signed agreement among 27 federal departments and agencies, including the American Red Cross, that: (1) provides the mechanism for coordinating delivery of federal assistance and resources to augment efforts of state and local governments overwhelmed by a major disaster or emergency; (2) supports implementation of the Robert T. Stafford Disaster Relief and Emergency Act, as well as individual agency statutory authorities; and (3) supplements other federal emergency operations plans developed to address specific hazards. The Federal Response Plan is implemented in anticipation of a significant event likely to require federal assistance, or in response to an actual event requiring federal assistance under a presidential declaration of a major disaster or emergency.

State Agencies and Regulations

The identification and cleanup, or remediation, of environmentally contaminated properties is regulated by several agencies in California, depending on the site's size and nature, its past uses, and whether soil or groundwater is impacted.

- ✓ **California Environmental Protection Agency (Cal/EPA) -** The Cal/EPA was created in 1991 by the Governor's Executive Order. The six agencies (Air Resources Board, Department of Pesticide Regulation, Department of Toxic Substances Control, Integrated Waste Management Board, Office of Environmental Health Hazard Assessment, and the State Water Resources Control Board) were placed within the Cal/EPA "umbrella" to create a cabinet-level voice for the protection of human health and the environment and to assure the coordinated deployment of state resources.

- ✓ **California Department of Toxic Substances Control (DTSC) -** In California, the DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code. Hazardous waste is defined by Section 25117 of Division 20 of the Health and Safety Code as:

  A waste or combination of waste, which, because of its quantity, concentration, physical, chemical, or infectious characteristics, may:

  - ➢ *Cause, or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating reversible illness; or*
  - ➢ *Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.*

  The DTSC regulates hazardous waste, cleans up existing contamination, and researches ways to reduce the hazardous waste produced in California. In addition, the DTSC develops legislation, coordinates with lawmakers, and responds to constituent complaints. The regulations specify what those who handle hazardous waste must do to comply with the law.

  Under RCRA, DTSC cleans up or oversees approximately 220 hazardous substance release sites at any given time and completes an average of 125 cleanups each year. Ensuring compliance through inspection and enforcement is an important part of effective hazardous waste regulation. DTSC conducts roughly 200 inspections a year. DTSC's Criminal Investigations Branch has the only law enforcement officers in the Cal/EPA. These peace officers, with the powers of arrest, search, and seizure, investigate alleged criminal violations of the Hazardous Waste Control Law. They work closely with district attorneys' offices, the federal Environmental Protection Agency, the Federal Bureau of Investigation, and law enforcement personnel in other states.

  The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires that any business that handles hazardous materials prepare a business plan, which must include the following:

- Details, including floor plans, of the facility and business conducted at the site.
- An inventory of hazardous materials that are handled or stored on site.
- An emergency response plan.
- A safety and emergency response training program for new employees with annual refresher courses.

✓ **Hazardous Transportation Materials Regulations -** Transportation and use of hazardous materials are the concern of several state and local agencies, including Caltrans, which tracks hazardous materials spills at the District level; the California Highway Patrol (CHP), whose Commercial Vehicle Section includes a Motor Carrier/Licensing & HazMat Regulations Unit; and the state Office of Emergency Services, which responds to hazardous materials emergencies in cooperation with local responders. In addition, state law has established Certified Uniform Program Agencies (CUPAs), often housed within local fire departments, to oversee hazardous materials storage, use, and disposal.

✓ **California Unified Program Agency (CUPA) -** In 1993, the CUPA was created by SB 1082 in order to simplify the process of regulating and managing hazardous materials and hazardous wastes. Rather than having numerous state and local agencies regulate a single business, SB 1082 consolidated the enforcement of several environmental regulations under the administration of a single local agency, called a CUPA. The CUPA can be a county, city, or JPA (Joint Powers Authority). Under SB 1082, the state required all counties to apply for CUPA status. To address the needs of cities, some of which already had strong environmental inspection programs, the law allowed cities to opt in to the CUPA program, provided they could demonstrate the minimum expertise and training required to implement the six program elements.

Each CUPA, whether housed in a Fire Department, Environmental Health Department, or some other department within the city or county, would consolidate six existing environmental regulation programs with the goal of reducing: 1) the number of regular inspections to each site by combining different inspections into a single visit, and 2) the amount each regulated business paid in inspection fees. The six programs include the following: 1) Hazardous Materials Business Plan/Emergency Response Plan; 2) Hazardous Waste/Tiered Permitting; 3) Underground Storage Tanks; 4) Aboveground Storage Tanks (SPCC only); 5) California Accidental Release Program; and 6) the Uniform Fire Code Hazardous Materials Management Plan. The CUPA designates a Participating Agency (PA) to administer one or more Unified Programs within its jurisdiction on the CUPA's behalf.

✓ **Government Code Section 65962.5(a), Cortese List -** The Hazardous Waste and Substance Sites Cortese List is a planning document used by the state, local agencies, and developers to comply with the CEQA requirements in providing information, January 2014 7345 Soitec Solar Development Program EIR 3.1.4-15, about the location of hazardous materials release sites. Government Code

Section 65962.5 requires the California Environmental Protection Agency (CalEPA) to update the Cortese List at least annually. DTSC is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional information on hazardous material releases for the Cortese List.

- ✓ **Hazardous Materials Business Plans** - Per Article 1 of Chapter 6.95 of the California Health and Safety Code (Sections 25500–25520) requires that any business that handles, stores, or disposes of a hazardous substance at a given threshold quantity must prepare a Hazardous Materials Business Plan (HMBP). HMBPs are intended to minimize hazards to human health and the environment from fires, explosions, or unplanned releases of hazardous substances into air, soil, or surface water. The HMBP must be carried out immediately whenever a fire, explosion, or unplanned chemical release occurs. An HMBP includes three sections: (1) an inventory of hazardous materials, including a site map, which details their location; (2) an emergency response plan; and (3) an employee-training program. HMBPs serve as a resource for employers and employees in managing emergencies at a given facility. They also help better prepare emergency response personnel for handling a wide range of emergencies that might occur at the facility.

  HMBPs are submitted to the Department of Environmental Health (DEH) Hazardous Materials Division (HMD). The plans must be resubmitted, reviewed, revised, or amended as necessary every 3 years. The HMBP must also be amended within 30 days whenever there are changes in the amount or location of stored hazardous chemicals on a site. The HMD conducts routine inspections at businesses required to submit business plans. The purpose of these inspections is to (1) ensure compliance with existing laws and regulations concerning HMBP requirements, (2) identify existing safety hazards that could cause or contribute to an accidental spill or release, and (3) suggest preventative measures designed to minimize the risk of a spill or release of hazardous materials. After the initial submission of an HMBP, the business must review and recertify it every year.

- ✓ **Risk Management Plans -** Article 2 of Chapter 6.95 of the California Health and Safety Code (Sections 25531–25543.3) requires the owner or operator of a stationary source with more than a threshold quantity of a regulated substance to prepare a Risk Management Plan (RMP). The state statutes and regulations combine federal and state program requirements for preventing accidental releases of listed substances into the atmosphere. The incorporation of federal and state requirements is designated as the California Accidental Release Prevention (CalARP) program. CalARP requires that an RMP include a hazard assessment program, an accidental release prevention program, and an emergency response plan. The RMP must be revised every 5 years or as necessary. The majority of facilities or businesses in the County that have prepared RMPs are ammonia refrigeration facilities and water treatment and wastewater treatment plants that handle chlorine gas.

- ✓ **Title 22 of the California Code of Regulations & Hazardous Waste Control Law, Chapter 6.5** - The DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste under RCRA and the California Hazardous Waste Control Law. Both laws impose "cradle to grave" regulatory systems for handling hazardous waste to protect human health and the environment. CalEPA has delegated some of its authority under the Hazardous Waste Control Law to county health departments and other Certified Unified Program Agencies.

- ✓ **Title 23 of the California Code of Regulations, Underground Storage Tank Act** - The UST monitoring and response program is required under Chapter 6.7 of the California Health and Safety Code and Title 23 of the California Code of Regulations (CCR). The program was developed to ensure that the facilities meet regulatory requirements for design, monitoring, maintenance, and emergency response in operating or owning USTs. The County DEH is the local administering agency for this program.

- ✓ **Title 27 of the CCR, Solid Waste -** Title 27 of the CCR contains a waste classification system that applies to solid wastes that cannot be discharged directly or indirectly to waters of the state and which therefore must be discharged to waste management sites for treatment, storage, or disposal. The California Integrated Waste Management Board and its certified Local Enforcement Agency regulate the operation, inspection, permitting, and oversight of maintenance activities at active and closed solid waste management sites and operations.

- ✓ **California Human Health Screening Levels -** The California Human Health Screening Levels—CHHSLs or "Chisels"—are concentrations of 54 hazardous chemicals in soil or soil gas that CalEPA considers to be below thresholds of concern for risks to human health. The CHHSLs were developed by the Office of Environmental Health Hazard Assessment on behalf of CalEPA. The CHHSLs were developed using standard exposure assumptions and chemical toxicity values published by the EPA and CalEPA. CHHSLs can be used to screen sites for potential human health concerns where hazardous chemicals have been released into soils. Under most circumstances, the presence of a chemical in soil, soil gas, or indoor air at concentrations below the corresponding CHHSL can be assumed not to pose a significant health risk to people who may live or work at the site. There are separate CHHSLs for residential and commercial/industrial sites.

- ✓ **Senate Bill 1889, Accidental Release Prevention Law/California Accidental Release Prevention Program -** Senate Bill (SB) 1889 required California to implement a new federally mandated program governing the accidental airborne release of chemicals promulgated under Section 112 of the Clean Air Act. Effective January 1, 1997, CalARP replaced the previous California Risk Management and Prevention Program and incorporated the mandatory federal requirements. CalARP addresses facilities that contain specified hazardous materials, known as "regulated substances," that, if

released accidentally, could result in adverse off-site consequences. CalARP defines regulated substances as chemicals that pose a threat to public health and safety or the environment due to their high toxicity, flammability, or explosivity.

- ✓ **California Fire Code -** The California Fire Code (CFC) is Chapter 9 of Title 24 of the California Code of Regulations. It was created by the California Building Standards Commission and is based on the International Fire Code created by the International Code Council. It 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 CFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The CFC and the California Building Code use a hazard classification system to determine which 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 CFC employs a permit system based on hazard classification. The CFC is updated every 3 years.

- ✓ **California Emergency Services Act -** The California Emergency Services Act was adopted to establish the state's roles and responsibilities during human-made or natural emergencies that result in conditions of disaster and/or extreme peril to life, property, or the resources of the state. This act is intended to protect health and safety by preserving the lives and property of the state's people.

- ✓ **California Natural Disaster Assistance Act -** The California Natural Disaster Assistance Act (NDAA) provides financial aid to local agencies to assist in the permanent restoration of public real property, other than facilities used solely for recreational purposes, when such real property has been damaged or destroyed by a natural disaster. The NDAA is activated after the following occurs: (1) a local declaration of emergency; or (2) Cal EMA gives concurrence with the local declaration, or the governor issues a Proclamation of a State Emergency. Once the NDAA is activated, local government is eligible for certain types of assistance, depending upon the specific declaration or proclamation issued.

- ✓ **State Fire Regulations -** State fire regulations are set forth in Section 13000 et seq. of the California Health and Safety Code, which include regulations concerning building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training. The state fire marshal enforces these regulations and building standards in all state-owned, state-occupied, and state-institutional buildings throughout California.

Local

- ✓ **Madera-Mariposa-Merced Fire Unit Fire Management Plan.** The Madera-Mariposa-Merced 2009 Fire Plan aims to reduce wildfire costs and losses within the unit and outlines the process to achieve this goal. The plan identifies and prioritizes target areas that will receive the majority of pre-fire management activities.

- ✓ **Merced County Airport Land Use Compatibility Plan.** The Merced County Airport Land Use Commission has the authority to review public agency decisions regarding new land uses near airports and determine whether actions are contrary to the best interests of the airport and adjacent areas. The Merced County Airport Land Use Compatibility Plan was last prepared and adopted by the ALUC on June 21, 2012.

Environmental Setting

Natural Occurrences of Asbestos (NOA) in California

California Asbestos Regulations

In California, concerns about potential public exposure to NOA have led to guidance documents and various regulations. In 1986, asbestos was identified as a toxic air contaminant by the California Air Resources Board (CARB). In 1990, the CARB issued an Airborne Toxic Control Measure (ATCM) that prohibited the use of serpentine aggregate for surfacing if its asbestos content was 5 percent or more. These concerns over potential health issues associated with exposure to NOA led to new regulations and guidance regarding NOA:

- ✓ In July 2000, the CARB adopted amendments to the existing ATCM 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. These amendments took effect on November 13, 2001.

- ✓ In July 2001, the CARB adopted a new ATCM for construction, grading, quarrying, and surface mining operations in areas with serpentine or ultramafic rocks. This ATCM became effective on November 19, 2002.

- ✓ In October 2000, the Governor's Office of Planning and Research issued a memorandum providing guidance to Lead Agencies in analyzing the impacts of naturally occurring asbestos on the environment through the California Environmental Quality Act (CEQA) review process.

- ✓ In November 2000, the California Department of Real Estate added a section to subdivision forms that included questions related to NOA on property proposed for development.

- ✓ In 2004, as part of its school-site review program, the California Department of Toxic Substances Control's School Property Evaluation and Cleanup Division released interim guidance on evaluating NOA at school sites.

In addition to these requirements, some counties have also adopted ordinances or requirements regarding the use of asbestos-containing materials for surfacing or pertaining to excavation and grading activities in areas likely to contain NOA. (U.S. Department of the Interior, U.S. Geologic Survey, 2011)

Figure 3-16 shows reported historic asbestos mines, historic asbestos prospects, and other natural occurrences of asbestos in Merced County. While Figure 3-16 remains a useful screening tool, additional localized studies and site-specific investigations may provide more detailed information regarding naturally occurring asbestos conditions.

Table 3-56 shows the summary of asbestos-related features in the 58 counties of California, including the presence of ultramafic rocks or serpentinite, reported natural occurrences of asbestos, and reported fibrous amphibole.

Hazardous Waste Management and Transportation

As in many parts of California, individual cities and counties have prepared Integrated Hazardous Waste Management Plans. It is the responsibility of each jurisdiction, under the provisions of the hazardous waste management plan, to enforce planning decisions or designations regarding the transport and treatment of hazardous waste, as well as the siting of hazardous waste treatment facilities.

Waste management generally falls into four categories: source reduction, recycling, treatment, and residual disposal. Waste management locations typically accommodate all of these activities on-site. Recycling, treatment, and disposal can also occur off-site. However, they would require additional intermediate support not only for storage but also for the transport of the waste.

Public exposure to hazardous materials is elevated because these materials are transported primarily on highways and local roads. This concern affects national and local governments regarding the safe transport of hazardous materials and the potential harm hazardous waste can cause to people and the environment.

FIGURE 3-16
Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in Merced County

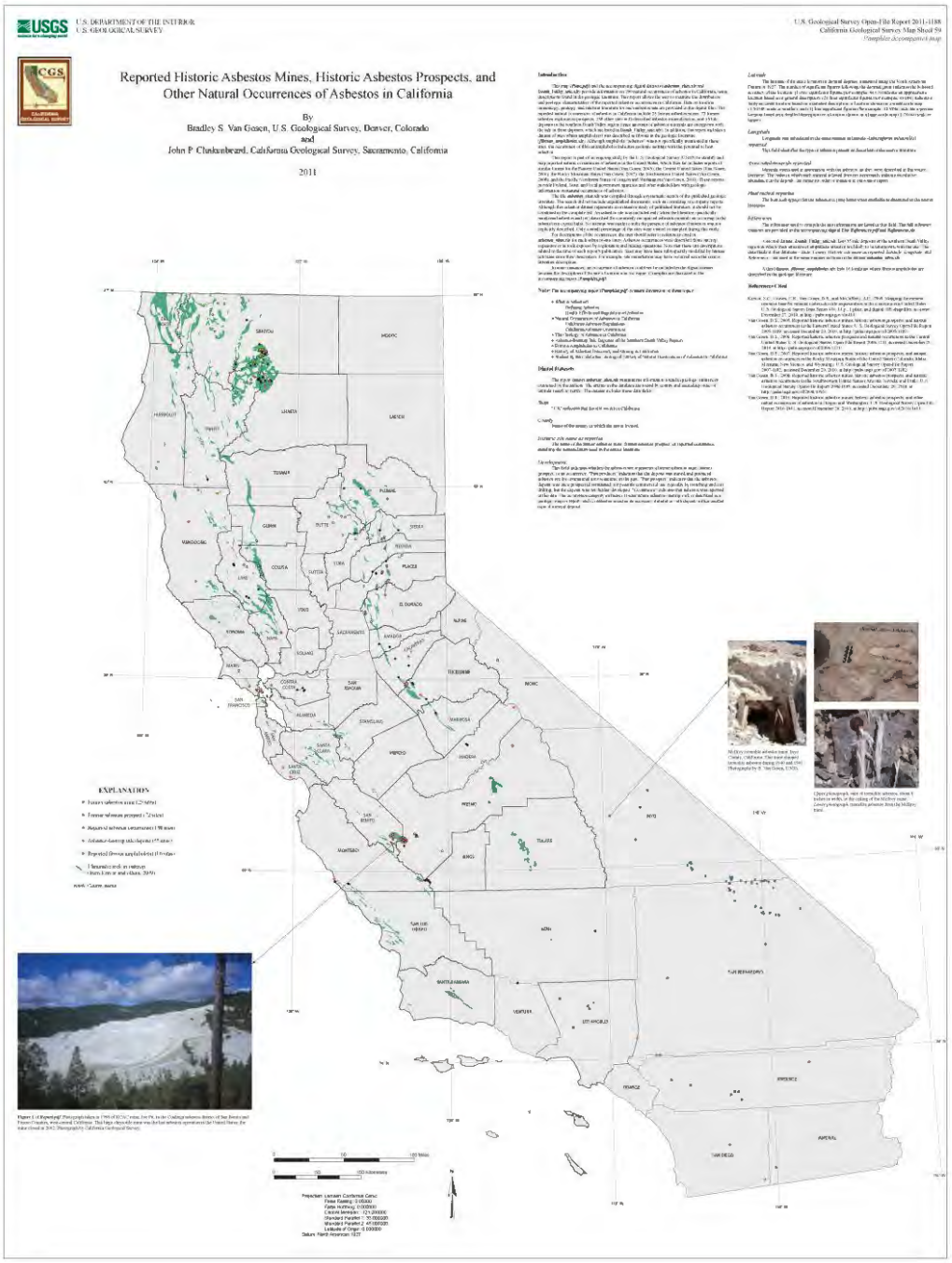


TABLE 3-56
Asbestos Featured in 58 counties of California

County	Ultramafic Rocks Or Serpentinite[1]	Asbestos[2]	Asbestos (Nonspecific Location In County)[3]	Fibrous Amphibole[4]
Alameda	X	X		
Alpine				
Amador	X	X		
Butte	X	X		
Calaveras	X	X		X
Colusa	X	X		
Contra Costa	X	X		
Del Norte	X	X		
El Dorado	X	X		
Fresno	X	X		X
Glenn	X	X		
Humboldt	X			
Imperial	U	X		
Inyo	U	X		
Kern	X	X		
Kings	X	X		
Lake	X	X		
Lassen				
Los Angeles	X	X		
Madera	U	X		X
Marin	X	X		X
Mariposa	X	X		
Mendocino	X	X		X
Merced	X		X	
Modoc				
Mono	U	X		
Monterey	X	X		X
Napa	X	X		
Nevada	X	X		
Orange	U			
Placer	X	X		
Plumas	X	X		

County	Ultramafic Rocks Or Serpentinite[1]	Asbestos[2]	Asbestos (Non Specific Location In County)[3]	Fibrous Amphibole[4]
Riverside	U	X		X
Sacramento			X	
San Benito	X	X		X
San Bernardino	U	X		X
San Diego	U	X		X
San Francisco	X	X		
San Joaquin	U			
San Luis Obispo	X		X	
San Mateo	X			
Santa Barbara	X		X	
Santa Clara	X	X		
Santa Cruz				X
Shasta	X	X		
Sierra	X	X		
Siskiyou	X	X		
Solano	X			
Sonoma	X	X		
Stanislaus	X			
Sutter				
Tehama	X			
Trinity	X	X		
Tulare	X	X		
Tuolumne	X	X		X
Ventura				
Yolo	X	X		
Yuba	X	X		
Totals	**51**	**41**	**4**	**12**

"X" represents counties in which ultramafic rocks or serpentinite are shown on the accompanying map; "U" represents counties with occurrences too small to show.

[1] Ultramafic rocks or serpentinite identified on geologic maps or mentioned in the literature.
[2] Counties with locatable asbestos occurrences reported in the literature.
[3] Counties with asbestos occurrences reported in the literature, but with locations not specific enough to show on the accompanying map. These occurrences are not listed in ***asbestos_sites.xls*** or ***Death Valley_talc.xls***.
[4] Occurrences listed in ***fibrous_amphiboles.xls***.

Local governments can regulate the transport of hazardous materials and waste in one of two ways. First, they may prohibit or limit the transport of hazardous materials and waste. Local governments are generally not responsible for regulating hazardous waste transport on state and interstate highways; however, they are explicitly responsible for regulating it on local streets. Under AB 1861 (Campbell 1985),

local governments can regulate hazardous material and waste transport on local roads, considering the following guidelines:

- ✓ The road is appreciably less safe than reasonable alternatives as determined using the Federal Highway Administration's "Guidelines for Applying Criteria to Designate Routes for Transporting Hazardous Materials."
- ✓ The local regulation is not preempted by federal law.
- ✓ The local regulation does not limit necessary access to businesses requiring the services of hazardous materials transporters.
- ✓ The local regulation allows hazardous materials transporters access to service facilities that are within one-half mile of a state or interstate highway.
- ✓ Neighboring jurisdictions agree that the regulation is not incompatible with through transportation.
- ✓ The regulated road is posted.
- ✓ The California Highway Patrol (CHP) is notified of the regulations and includes the restricted road in its published list of restricted highways.

The CHP supports local governments' responsibility for regulating the transport of hazardous materials on local roads. As such, the CHP has issued regulations requiring trucking companies and drivers who carry explosives to follow routes prescribed or established by local authorities. Further, the CHP requires that:

> *Where routes are not prescribed by the local authority, every driver of a vehicle transporting explosives will avoid, so far as practicable, and, where feasible, by prearrangement of routes, driving into or through congested thoroughfares, places where crowds are assembled, streetcar tracks, tunnels, viaducts, and dangerous crossings.*

The second way local governments can regulate transportation is by conducting a transportation risk analysis to inform the siting of hazardous waste facilities. The Integrated Waste Management Plan (IWMP) identifies the adopted commercial hazardous materials shipping routes within each county. For a county system of routes, the IWMP designates a number of State Routes (SR) and US highways. Although local laws may regulate various aspects of hazardous waste transportation on city and county roads, movement typically involves long-distance travel on state and interstate highways.

Response Procedures for Hazardous Materials Spills

Emergency response programs will address either of the following two scenarios:

- ✓ Responding to a release of hazardous materials into the environment.

- ✓ Implementing AB2185, AB2187, and AB3777 and local emergency response/disclosure ordinances.

Hazardous material releases, typically spills or gas vapor releases, pose potentially serious health threats and therefore require special attention. Specially trained and equipped crews are assigned to respond to these situations and handle the unique challenges posed by hazardous materials.

State-mandated disclosure and emergency response programs (AB 2185, AB 2187, and AB 3777) require local users of hazardous materials to submit emergency response plans and hazardous material inventory lists to a local agency. The local agency is responsible for developing an emergency response plan for the area.

Hazardous Waste Sites

Hazardous waste may be liquid, solid, or sludge. The waste is considered hazardous if it has any of the following four characteristics: ignitable, reactive, corrosive, or toxic. The wastes may be the by-products of manufacturing processes or simply unwanted commercial products. Hazardous waste generators in Merced County include industries, businesses, public and private institutions, and households. Because the Valley portion of the County is largely agricultural, the use and storage of pesticides is prominent.

County Department of Health Services (DHS) classifies waste into three categories: “large quantity,” or those who produce 1,000 kilograms or more per month; “small quantity”, or those producing between 100 and 1,000 kilograms per month, including businesses, farms and households; and “household wastes”, which includes solvents, pesticides, and miscellaneous wastes, such as car batteries, tires, cleaners, fertilizer and paints. According to the Merced County General Plan, in 2011 there were approximately 27 closed disposal sites, 343 leaking underground storage tank (LUST) clean-up sites, 17 military sites (associated with Castle Air Force Base), 94 active spill leak clean-up sites, 83 leaking underground fuel tanks (LUFT) sites, 38 permitted underground storage tank (UST) facilities, and 36 sites classified as “other” sites.

Hazardous wastes are transported through Merced County by truck and rail. Caltrans has established nine hazardous materials classifications, all of which may be through-transported on Interstate 5. In addition, the County contains six hazardous waste transportation routes (SRs 33, 59, 99, 140, 152, and 165) that are subject to certain restrictions. Therefore, thousands of tons of hazardous waste are transported via state highways and County roadways, posing a potential risk of accidental spills.

There are sites where soil or groundwater has been contaminated with hazardous materials. EnviroStor is used by the Department of Toxic Substances Control to track permitting, enforcement, and cleanup activities at hazardous waste facilities and sites with known or suspected contamination. According to

EnviroStor, there are three (3) active, inactive-action-required, and inactive-needs-evaluation sites within Merced County. Table 3-57 identifies representative sites within Merced County based on EnviroStor and other sources.

TABLE 3-57
Representative Hazardous Waste Sites in Merced County - 2026

Site	Community	General Site Type
Castle Air Force Base Cleanup Area	Atwater	Former military installation/groundwater and soil remediation
Yosemite Park Landfill	Merced area	Closed solid waste disposal facility
Former Agricultural Chemical Handling Facilities	Countywide	Pesticide and fertilizer contamination investigation sites
Former Service Stations and Petroleum Release Sites	Countywide	Leaking Underground Storage Tank (LUST) sites
Former Industrial and Manufacturing Facilities	Merced, Atwater, Livingston	Hazardous materials investigation and cleanup sites
Railroad-Related Properties	Merced	Fuel and hazardous materials investigation sites
Former Dry-Cleaning Facilities	Merced County communities	Solvent contamination sites
Landfills and Disposal Facilities Identified in EnviroStor	Countywide	Hazardous materials and waste disposal sites
Merced Regional Airport Area Sites	Merced	Petroleum and industrial materials investigation sites
Former Automotive and Maintenance Facilities	Countywide	Petroleum hydrocarbon and solvent contamination sites
Agricultural Burn Dump and Disposal Areas	Rural Merced County	Historic disposal and debris sites
Former Chemical Storage and Distribution Facilities	Countywide	Hazardous materials storage and release sites

Source: *California Department of Toxic Substances Control (DTSC) EnviroStor database; State Water Resources Control Board GeoTracker database; CalEPA Cortese List; Merced County CUPA records; accessed 2026.*

Merced County contains a variety of hazardous materials sites identified through federal, state, and local environmental databases. These include leaking underground storage tank sites, former military facilities, industrial and agricultural chemical handling facilities, landfills, dry-cleaning facilities, and properties undergoing investigation or remediation for soil and groundwater contamination. Site inventories are updated periodically as investigations, remediation, and regulatory closures occur. Therefore, current database reviews should be conducted during project-level environmental analysis to identify hazardous materials conditions in the vicinity of proposed projects.

Environmental Impacts, Mitigation Measures, and Significance after Mitigation

Methodology

The impact assessment for hazardous materials transport focuses on the potential effects the RTP might have on hazardous material use and transport within the County. The assessment is not site or project-specific but is a regional analysis.

Criteria for Significance

The proposed Project could create a potentially significant impact if the following conditions are present:

- ✓ Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- ✓ 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;
- ✓ Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- ✓ Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or environment;
- ✓ 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 for people residing or working in the project area;
- ✓ For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;
- ✓ Impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; and/or

- ✓ Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Impact 3.10.1 - Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

The 2026 RTP/SCS includes projects that may involve the transportation, use, and/or disposal of hazardous materials, particularly the proposed freight rail improvements and other goods movement capacity enhancements, which may result in transport of hazardous goods as well as the use of equipment that contains or uses routine hazardous materials (e.g., diesel fueled equipment), or the transportation of excavated soil and/or groundwater containing contaminants from areas that are identified as being contaminated.

It is anticipated that these activities would result in a less-than-significant hazard to the public and/or the environment because they are subject to numerous laws, regulations, and health and safety standards set forth by federal, state, and local authorities that govern the proper handling of such materials and their containers. These include the EPA, the Occupational Safety and Health Administration (OSHA), USDOT, and the Food and Drug Administration (FDA) for the federal government. State agencies, including the Health and Welfare Agency (HWA), under which the DTSC operates, have parallel, and in some cases more stringent, rules governing the use of hazardous materials.

USDOT requires the use of hazardous waste manifests to ensure that hazardous waste is strictly monitored and tracked from generation through ultimate disposal. To operate in California, all hazardous waste transporters must be registered with the DTSC. Unless specifically exempted, hazardous waste transporters must comply with the California Highway Patrol Regulations, the California State Fire Marshal Regulations, and the United States Department of Transportation Regulations.

In addition, the construction and maintenance of transportation facilities included in the 2026 RTP/SCS would involve the use of hazardous materials, including solvents, paints, and other architectural coatings. The use and storage of these materials will be regulated by local fire departments, CUPAs, and the California Division of Occupational Safety and Health. Materials left over from construction projects can likely be reused on other projects. For materials that cannot be reused, disposal would be regulated by the DTSC under state and federal hazardous waste regulations.

The following mitigation measure is included to ensure compliance with applicable regulations.

Mitigation Measures

- ✓ **HM 3.10.1-1** The implementation agency and project sponsors shall comply with all applicable laws, regulations, and health and safety standards set forth by federal, state, and local authorities that regulate the proper handling of such materials and their containers to the routine transport, use, and disposal of hazardous materials does not create a significant hazard to the public or the environment.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the creation of significant hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials, such impacts may remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact 3.10.2 - 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.

The implementation of the 2026 RTP/SCS could pose a hazard to the public or the environment through reasonably foreseeable upset and accident conditions that could result in the release of hazardous materials during transportation. Implementation of the 2026 RTP/SCS would facilitate the movement of goods, including hazardous materials, through the region. Transportation of goods in general and of hazardous materials can thus be expected to increase substantially with the implementation of the 2026 RTP/SCS.

The 2026 RTP/SCS transportation improvements and future land use development will increase density and population and include a variety of land uses, ranging from residential to commercial or industrial, that will increase the potential for upset or accident conditions resulting in the release of hazardous materials into the environment. Specific parcel-level land uses are unknown, but future land use development will generally increase the number of land uses that require the use, storage, and transport

of hazardous materials. Such land uses could include residential, dry-cleaning, gas stations, service stations, industrial, and agricultural uses.

Businesses that store large quantities of hazardous materials (e.g., gas storage facilities, chemical warehouses) and accidents involving the transport, pumping, pouring, emptying, injecting, spilling, or disposing of hazardous materials could release them into the environment. The severity of potential effects varies with the activity conducted and the concentration and type of waste present. The possible adverse effects on the public or the environment from these and other activities are addressed through federal, state, and local regulations and monitoring, as discussed below.

Established by the EPA with additional requirements specific to the State of California, CalARP applies to a wide variety of facilities that contain regulated substances. CalARP aims to prevent the accidental release of hazardous materials into the environment through proper storage, containment, and handling. The USDOT enforces the HMTA by regulating the transportation of hazardous materials by truck and rail and by governing every aspect of their movement, from packaging to labeling and shipping. Cal EMA administers the Emergency Response Plan for hazardous materials incidents. Additionally, roadway improvements in the RTP/SCS will enhance road safety, thereby reducing the risk of accidents involving hazardous materials.

Transportation improvements in the 2026 RTP/SCS involve expanding the transportation system, potentially increasing capacity for transporting hazardous materials. For example, gas or oil spilling from vehicle accidents or a tanker overturning on a highway could release hazardous materials. Transportation improvements that expand the transportation system and extend it to new areas expose more adjoining land uses to the risk of disruption from roadways, highways, or railroads. These impacts are addressed through CalARP, which manages risks associated with accidental release. To prevent or minimize the accidental release of hazardous materials into the environment, CalARP requires precautions such as proper material securing and appropriate container design. California Vehicle Code Section 31303 outlines general routing and parking restrictions (Table 10.3) for hazardous material and hazardous waste shipments; the CHP also publishes a list of restricted or prohibited highways. Roadway improvements in the proposed RTP/SCS will enhance road safety, thereby reducing the risk of accidents involving hazardous materials.

Given the large volume of materials currently transported through the region and those projected to be transported, some of which are and will continue to be hazardous, the risk of an upset resulting from accident or human interference is significant.

Mitigation Measures

- ✓ **HM 3.10.2-1** Implementing agencies shall encourage the USDOT, the Office of Emergency Services, and Caltrans to continue to conduct driver safety training programs and encourage the private sector to continue conducting driver safety training.

- ✓ **HM 3.10.2-2** Implementing agencies shall encourage the USDOT and the CHP to continue to enforce speed limits and existing regulations governing goods movement and hazardous materials transportation.

- ✓ **HM 3.10.2-3** The implementing agencies and project sponsors shall comply with all applicable laws, regulations, and health and safety standards set forth by federal, state, and local authorities that regulate the proper handling of such materials and their containers to the routine transport, use, and disposal of hazardous materials does not create a significant hazard to the public or the environment.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the creation of 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, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact 3.10.3 – Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Increased development within Merced County will increase population and density in the RTP/SCS region. As discussed previously, the implementation of the 2026 RTP/SCS could pose a hazard to the public or the environment through reasonably foreseeable upset and accident conditions that could result in the release of hazardous materials during transportation.

According to the Merced County Office of Education, there are 20 school districts in Merced County that serve over 58,000 TK-12 students. There are just over 110 schools in the County, including elementary, middle, and high schools, as well as colleges and charter schools. There are a number of schools that are within one-quarter mile of a state highway facility. Transportation of hazardous materials on these state highways could affect these schools in the event of a release or accident. Transportation of hazardous materials and other activities are subject to numerous laws, regulations, and health and safety standards set forth by federal, state, and local authorities that regulate the proper handling of such materials and their containers. These include the EPA, the Occupational Safety and Health Administration (OSHA), USDOT, and the Food and Drug Administration (FDA) for the federal government. State agencies, including the Health and Welfare Agency (HWA), under which the DTSC operates, have parallel, and in some cases more stringent, rules governing the use of hazardous materials.

Due to the strict and numerous regulations governing the use of hazardous materials, impacts are expected to be less than significant.

The following mitigation measure is included to ensure compliance with applicable regulations.

Mitigation Measures

- ✓ **HM 3.10.3-1** The implementing agencies shall comply with all applicable laws, regulations, and health and safety standards set forth by federal, state, and local authorities that regulate the proper handling of such materials and their containers, so that the routine transport, use, and disposal of hazardous materials does not create a significant hazard to the public or the environment.

Significance After Mitigation

The mitigation measure would ensure appropriate steps are taken to minimize any hazard to the public or the environment. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementing and monitoring the above mitigation measures will provide the framework and direction to avoid or reduce emissions of hazardous materials within one-quarter mile of a school, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact 3.10.4 – Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or environment.

The implementation of the 2026 RTP/SCS could pose a hazard to the public or the environment by disturbing contaminated property during the construction of new transportation facilities, future land use developments, or the expansion of existing transportation facilities or land use developments. Construction of the projects in the 2026 RTP/SCS could involve work through or next to sites contaminated by past use or disposal of hazardous materials. In the two decades since federal and state laws were adopted to provide for the remediation of these sites, it is likely that the majority of contaminated sites have been identified or are readily identifiable from existing information. Given the intensity of past land use in the region, there are substantial numbers of contaminated sites, and it is likely that most improvement and future land use development projects will have to address this issue.

Because of the large number of contaminated sites and the risks associated with encountering and cleaning them up, this impact is considered significant.

Mitigation Measures

- ✓ **HM 3.10.4-1** Prior to approval of any improvement project or future land use development project, the project implementation agency shall consult all known databases of contaminated sites and undertake a standard Phase 1 Environmental Site Assessment in the process of planning, environmental clearance, and construction for projects included in the 2026 RTP/SCS. If contamination is found, the implementing agency shall coordinate clean-up and/or maintenance activities.

- ✓ **HM 3.10.4-2** Where contaminated sites are identified, the project implementation agency shall develop appropriate mitigation measures to assure that worker and public exposure is minimized to an acceptable level and to prevent any further environmental contamination as a result of construction.

- ✓ **HM 3.10.4-3** Local agencies should contact the Chevron Environmental Management Company (CEMC) to determine whether an improvement or future land use development project may be in the vicinity of the Tidewater Oil Company or Standard Oil Company historical pipeline alignments.

Significance After Mitigation

The mitigation measure would ensure that contaminated properties are identified and that appropriate steps are taken to minimize human exposure and prevent further environmental contamination. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce disturbance to contaminated property during the construction of new transportation or future land use developments, or the expansion of existing transportation facilities or land use developments, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact 3.10.5 - 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.

Transportation improvements and future land use development associated with implementing the proposed RTP/SCS could pose a safety hazard within the airport plan area. Regional development could increase the number of land uses and developments within an airport plan area and within airport hazard zones, creating hazards from tall structures, glare-producing objects, bird- and wildlife-attractants, radio waves from communication centers, or other features that could interfere with take-off or landing procedures.

Implementing agencies are responsible for analyzing compliance with Airport Land Use Commission (ALUC) plans as part of their land use approval authority. Legislation passed in the 1994 ALUP Handbook requires that, when preparing an environmental impact report for any project situated within an airport influence area, as defined in an ALUC compatibility plan, lead agencies shall use the California Airport Land Use Planning Handbook as a technical resource for airport noise and safety compatibility issues.

Military airfields are required to adopt ALUC studies to evaluate compatible land uses in their vicinity. Hazards associated with development in the proximity of military airports would be reduced through California PRC Section 21098. The FAA also evaluates projects located within 2 miles of a public-use airport and other projects that may pose a hazard to people residing or working in the project area due to height, visual hazards, or wildlife attraction.

Mitigation Measures

- ✓ **HM 3.10.5-1** Implementing agencies should comply with ALUC plans as a part of their land use approval authority through policies incorporated into general plans, specific plans, and other land use plans. Such policies would provide protection 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, and would result in a safety hazard for people residing or working in the project area.

Significance After Mitigation

If implementing agencies adopt this mitigation measure, impacts resulting in 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, that result in a safety hazard for people residing or working in the project area would be reduced to less than a significant level. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce safety hazards for people residing or working in the project area 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, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact 3.10.6- Impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Public service standards, performance measures, and related policies are usually set in city and county general plans. For fire, police, and emergency services, these standards are measured by response times or service ratios. Existing facilities would likely need additional personnel and equipment to maintain adequate service levels with increased demand. In some areas, depending on the level of development, constructing new facilities may be necessary to maintain adequate response times, capital capacity, equipment, and personnel.

Historically, local jurisdictions have accommodated increases in demand by constructing new facilities and leveraging existing facilities, equipment, and personnel. Future increases in demand will likely be handled in the same manner. The timing, siting, and project-specific details of individual development projects will

necessitate increasing service in existing service areas or expanding service to new areas. In most cases, local jurisdictions will not grant building permits until public services are in place to serve the new development. The 2026 RTP/SCS land use allocation assumes increases in public service facilities and infrastructure as the population grows. However, because public services are regulated at the local level, local jurisdictions have different goals, standards, and policies for their provision.

Emergency response and evacuation plans are designed by the Office of Emergency Services for the Merced region to address potential emergencies (e.g., fires, floods, earthquakes). These plans cover all the land within the region, including both incorporated and unincorporated areas. These plans provide a process for evacuating people from danger, preventing or minimizing loss of life and property.

Mitigation Measures

- ✓ **HM 3.10.6-1** Implementing agencies should adhere to all emergency plans as a part of their land use approval authority through policies incorporated into general plans, specific plans, and other land use plans. Such policies would provide protection for a project that impairs the implementation of, or physically interferes with, an adopted emergency response or evacuation plan.

Significance After Mitigation

If implementing agencies adopt this mitigation measure, impacts that result in a project impairing the implementation of, or physically interfering with, an adopted emergency response or evacuation plan would be reduced to a less-than-significant level. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impaired implementation of, or physical interference with, an adopted emergency response or evacuation plan, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

People and property can sustain significant damage from wildfires because they can spread quickly across large areas. The 2026 RTP/SCS could pose a hazard if it results in loss, injury, or death, and damage to property adjacent to wildlands where there are intermixed residences with wildlands.

Regional development can include different land uses, ranging from residential to commercial and industrial, to provide more goods and services to the region. Regional development could increase the number of structures adjacent to wild lands. The threat of wildfires from the development of areas within CALFIRE's responsibility, which include non-federal lands in unincorporated areas with watershed value, is addressed through compliance with Title 14 of the C.C.R., Division 1.5, to minimize exposing people and structures to loss, injury, or death and damage. Title 14 sets forth the minimum development standards for emergency access, fuel modification, setback, signage, and water supply, which help prevent damage to structures or people by reducing wildfire hazards.

In addition, wildfire prevention is a shared responsibility between federal, state, and local agencies. Federal lands fall under Federal Responsibility Areas, and all incorporated areas and other unincorporated lands are classified as Local Responsibility Areas. The 2026 RTP/SCS projects involve expanding the transportation system, which may increase the risk of adverse wildfire impacts. Transportation improvements that expand the system and extend it to new areas expose more urban-adjoining land uses to wildfire-related risks.

Transportation improvements, especially capacity improvements, generally enhance the transportation network, enabling more efficient movement of people during a wildfire evacuation. The threat of wildfires from transportation improvements within CAL FIRE's responsibility, which include non-federal lands in unincorporated areas with watershed value, is addressed through compliance with Title 14 of the C.C.R., Division 1.5, to minimize exposing people and structures to loss, injury, or death and damage. Title 14 sets forth the minimum development standards for emergency access, fuel modification, setback, signage, and water supply, which help prevent damage to structures or people by reducing wildfire hazards. In addition, wildfire prevention is a shared responsibility between federal, state, and local agencies. Federal lands fall under Federal Responsibility Areas, and all incorporated areas and other unincorporated lands are classified as Local Responsibility Areas.

Mitigation Measures

- ✓ **HM 3.10.7-1** Implementing agencies should analyze and adhere to all safety and compatibility issues as a part of their design and construction of transportation facilities and their land use approval authority through policies incorporated into general plans, specific plans, and other land use plans. Such policies would provide protection for a project located within wildland areas.

Significance After Mitigation

If the implementing agency adopts this mitigation measure, impacts on a project in the vicinity of a private airstrip that pose a safety hazard to people residing or working in the project area would be reduced to a

level below significance. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands, it is probable that such impacts could remain significant and unavoidable. As a program-level document, it is not feasible to evaluate all project-specific circumstances. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

3.11 HYDROLOGY & WATER QUALITY

Issues related to surface-water resources, flooding, ground-water resources, storm water runoff, and water quality are addressed in this section. In addition, the impacts of the 2026 RTP/SCS have been reflected, and appropriate mitigation measures have been identified to lessen them. Further discussion of water supply can be found in the Public Utilities, Other Utilities, and Services Systems section.

Water is one of the most critical issues facing the San Joaquin Valley. Numerous challenges—both longstanding and emerging—continue to affect the reliability, quantity, quality, and management of water resources needed to support agricultural production, urban development, and environmental resources throughout the region. Since 2017, California has experienced several significant drought-related events, including the following:

- ✓ **April 2017**
  Governor Jerry Brown ended the statewide drought emergency that had been in effect since 2014, while maintaining drought emergency declarations in Fresno, Kings, Tulare, and Tuolumne Counties due to ongoing groundwater and drinking water supply concerns.

- ✓ **April–May 2021**
  Governor Gavin Newsom began issuing new drought emergency proclamations in response to severe drought conditions. The declarations initially applied to a limited number of counties and were subsequently expanded.

- ✓ **May 2021**
  The drought emergency was expanded to include 39 additional counties, including Merced County. Governor Newsom announced the expansion during a visit to Merced County.

- ✓ **July 2021**
  The drought emergency was expanded to 50 counties as drought conditions worsened throughout California.

- ✓ **October 2021**
  Governor Newsom expanded the drought emergency to all 58 California counties, establishing a statewide drought emergency.

- ✓ **March 2023**
  Following record winter storms and one of the largest Sierra Nevada snowpacks on record, Governor Newsom eased several statewide drought restrictions and ended the voluntary statewide

15-percent water conservation request. However, many drought-response measures remained in effect to support groundwater and ecosystem recovery.

- ✓ **September 2024**
  Governor Newsom terminated drought emergency declarations in 19 counties where hydrologic conditions had substantially improved. Drought emergency provisions remained in effect in portions of California, including areas affected by long-term groundwater depletion and water-supply reliability concerns.

- ✓ **2023–2025**
  Multiple wet years significantly improved statewide reservoir storage, snowpack conditions, and surface water supplies. Despite these improvements, groundwater sustainability remains a major concern throughout the San Joaquin Valley, including the Merced, Chowchilla, and Delta-Mendota Subbasins, where local Groundwater Sustainability Agencies continue implementation of Sustainable Groundwater Management Act (SGMA) requirements.

- ✓ **Ongoing**
  Water conservation, groundwater recharge, demand management, and drought resilience planning continue throughout the San Joaquin Valley as local agencies work toward achieving long-term groundwater sustainability and improving water supply reliability under changing climate conditions.

The Southwest is already the driest and hottest region in the United States, and although California has ended the drought state of emergency in most of the counties, water reporting requirements and prohibitions on wasteful practices continue.

Implementation of **SGMA**, rather than short-term drought declarations, is now one of the most important factors affecting long-term water availability, land use patterns, agricultural production, and future growth throughout Merced County and the San Joaquin Valley.

Regulatory Setting

The statutes that govern the activities under the project that may affect water quality are the federal CWA (33 U.S.C. 1251 et seq.) and the Porter–Cologne Water Quality Control Act (Porter-Cologne) (California Water Code, Section 13000 et seq.). These acts provide the basis for water quality regulation in the project area.

The California Legislature has assigned the primary responsibility for administering and enforcing statutes that protect and enhance water quality to the SWRCB and its nine RWQCBs. The SWRCB provides state-

level coordination of the water quality control program by establishing statewide policies and plans to implement state and federal regulations. The nine RWQCBs throughout California adopt and implement water quality control plans that recognize the unique characteristics of each region with regard to natural water quality, actual and potential beneficial uses, and water quality problems. The RWQCB adopts and implements a Basin Plan that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan (California Water Code, Sections 13240–13247).

Water resources in the County are regulated by the federal, state, and local agencies as follows;

Federal Regulations

- ✓ **Clean Water Act (CWA) -** Enacted by Congress in 1972, the Clean Water Act mandates cooperative efforts by federal, state, and local governments to implement its pollution control measures. This law was the first comprehensive national clean water legislation to protect our nation's waters. In an effort to address pollution and poor water quality, the law uses a framework of standards, technical tools, and financial assistance. The law is intended to improve the quality of the nation's waters.

  The National Pollutant Discharge Elimination System (NPDES) was established by the Clean Water Act to regulate discharges into "navigable waters" of the United States. This is accomplished by using pollutant thresholds and operational conditions for industrial facilities and wastewater treatment plants. The Act also established Storm Water Management Plans and municipal authority for non-point source NPDES permits in communities with populations greater than 100,000 to control urban storm water runoff.

  These plans ensure the best management practices to reduce pollutant loads. Water quality thresholds called Total Maximum Daily Loads were also developed for pollutants and other stressors affecting water quality. Finally, in an effort to ensure that actions are consistent with the state's water quality requirements, Section 401 of the Clean Water Act grants states the authority to review federal permits or licenses that will result in a discharge or disruption of wetlands and other waters under state jurisdiction.

- ✓ **Safe Drinking Water Act -** The Safe Drinking Water Act (SDWA) ensures the quality of Americans' drinking water. The law requires actions to protect drinking water and its sources—rivers, lakes, reservoirs, springs, and groundwater wells—and applies to public water systems serving 25 or more people. It authorizes the EPA to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants. In addition, it oversees the states, municipalities, and water suppliers that implement the standards.

EPA standards are set as Maximum Contaminant Levels (MCLs) for each chemical or microbe. The MCL is the concentration not expected to produce adverse health effects after a lifetime of exposure, based on toxicity data and risk assessment principles. EPA's goal in setting MCLs is to ensure that even small violations, over time, do not pose a significant risk to public health. National Primary Drinking Water Regulations (NPDWRs, or primary standards) are legally enforceable standards that limit contaminant levels in drinking water supplied by public water systems.

Secondary standards are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards for water systems, but does not require compliance. However, states may choose to adopt them as enforceable standards.

- ✓ **Clean Water Rule: Definition of Water of the United States (WOTUS Rule) –** The EPA and the Corps of Engineers published the WOTUS Rule (40 CFR Parts 110, 112, 116, et al., and 33 CFR Part 328) in 2015 to announce the extent to which wetlands and other water features are protected under the Clean Water Act. The final rule addresses the following:

  - Clearly defines and protects tributaries that impact the health of downstream waters
  - Provides certainty in how far safeguards extend to nearby bodies of waters
  - Protects the nation's regional water treasures
  - Focuses on streams, not ditches
  - Maintains the status of waters within Municipal Separate Storm Sewer Systems
  - Reduces the use of case-specific analysis of water

Federal Agencies

- ✓ **U.S. Army Corps of Engineers -** The Corps of Engineers regulates placement of dredged or fill material in waters of the United States and regulates work in navigable waters of the United States.

- ✓ **U.S. Environmental Protection Agency (EPA**) - The U.S. Environmental Protection Agency is the federal agency responsible for water quality management and administration of the federal Clean Water Act (CWA). In California, the EPA has delegated most of the administration of the CWA to the State Water Resources Control Board (SWRCB).

- ✓ **The Safe Drinking Water Act (SDWA) of 1974** (42 U.S.C. § 300(f) et seq.) is the principal federal law protecting drinking water quality. It empowers the U.S. EPA to set drinking water quality standards and to oversee water providers that implement them. It includes provisions to protect surface waters

and wetlands and support drinking water quality. The California Department of Public Health Division of Drinking Water and Environmental Management is delegated implementation authority for well water permits, potable water monitoring, septic and sewer systems, hazardous materials and waste, and underground storage tanks and solid waste disposal facilities.

- ✓ **U.S. Fish and Wildlife Service (USFWS) -** The U. S. Fish and Wildlife Service (USFWS) administers the Federal Endangered Species Act (FESA) and designates critical habitat for endangered species to carry out its mission to conserve, protect, and enhance the nation's fish and wildlife and their habitats for the continuing benefit of people. Critical habitat areas cannot be disturbed without permission from the USFWS or other federal agencies, depending on land ownership. The USFWS also manages a system of land and waters for the conservation of wildlife and associated ecosystems. These National Wildlife Refuges are primarily managed to preserve and protect unique or important resources and ecosystems.

- ✓ **The Federal Emergency Management Agency (FEMA*)* -** The U.S. Congress passed the National Flood Insurance Act in 1968 and the Flood Disaster Protection Act in 1973 in order to restrict certain types of development on floodplains and provide for a national flood insurance program. The purpose of these programs is to reduce the need for large, publicly funded flood-control structures and disaster relief.

  FEMA classifies flood hazard zones as follows:
  - ➢ Zone A – Areas of 100-year flood. Base flood elevations and flood hazard factors are not determined.
  - ➢ Zone B – Areas between the limits of the 100-year flood and 500-year flood; or certain areas subject to the 100-year flooding with an average depth of less than one foot; or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood.
  - ➢ Zone C – Areas of minimal flooding not requiring flood insurance.

- ✓ **The U.S. Bureau of Reclamation (USBR*)* -** The USBR operates the Colorado River project, an extensive network of dams, canals, and related facilities. USBR serves as the Watermaster, overseeing contentious water-rights issues and running drought-protection programs.

- ✓ **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** – Commonly known as the federal "Superfund" law, CERCLA was enacted in 1980 to address the cleanup of sites contaminated by hazardous substances and to protect public health and the environment. CERCLA authorizes the U.S. Environmental Protection Agency (EPA) to identify, investigate, and remediate contaminated properties, establish liability for responsible parties, and oversee the cleanup of

hazardous waste sites. The law created the National Priorities List (NPL), which identifies the nation's most seriously contaminated sites requiring long-term remedial action. CERCLA also establishes reporting requirements for releases of hazardous substances and authorizes emergency response actions when necessary.

State Regulations

- ✓ **Safe, Clean, and Reliable Drinking Water Supply Act of 2010 (the Water Bond) -** Signed into law by the California legislature in 2009, a reexamination of the Water Bond's provisions appeared on the November 2014 General Election ballot. The approved measure enacted the Water Quality, Supply, and Infrastructure Improvement Act of 2014, replacing the 2010 Water Bond and creating savings for local governments on water projects. A measure (Proposition 68) passed on the June 2018 ballot authorizing state and local parks, environmental protection and restoration projects, water infrastructure projects, and flood protection projects.

- ✓ **Sustainable Groundwater Management Act (SGMA) –** Governor Brown signed the Sustainable Groundwater Management Act in 2014. The legislation allows local agencies to tailor groundwater suitability plans to meet the region's specific economic and environmental needs. The Act, for the first time in the State's history, provides a framework for sustainable, local groundwater management. Senate Bill (SB) 13, signed in 2015, further outlines technical requirements for groundwater sustainability agency formation, the process for State Water Board jurisdiction, and guidelines for basins designated as high- or medium-priority.

- ✓ **Construction General Permit** - For stormwater discharges associated with construction activity in the State of California, the SWRCB has adopted the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (i.e., Construction General Permit) in order to avoid and minimize water quality impacts attributable to such activities. The Construction General Permit applies to all projects where construction activity disturbs 1.0 or more acres of soil. Construction activity subject to this permit includes clearing, grading, and ground disturbances, such as stockpiling and excavation. The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Program (SWPPP), which includes specifying best management practices (BMPs) designed to prevent pollutants from entering stormwater and to prevent all erosion products from moving off-site into receiving waters. Routine inspection of all BMPs is required under the Construction General Permit. In addition, the SWPPP must include a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the Section 303(d) list for sediment (none of the project sites do). For construction sites not subject to Phase I or II municipal permits, the Construction General permit also establishes post-construction hydromodification requirements.

- ✓ **Industrial General Permit (SWRCB Industrial General Permit Order** - The Industrial Storm Water General Permit Order 97-03-DWQ (General Industrial Permit) is an NPDES permit that regulates discharges associated with 10 broad categories of industrial activities.

- ✓ **Dredge/Fill Activities and Waste Discharge Requirements** - Actions that involve, or are expected to involve, discharge of waste are subject to water quality certification under Section 401 of the CWA (e.g., if a federal permit is being sought or granted) and/or waste discharge requirements (WDRs) under the Porter–Cologne Act. Chapter 4, Article 4 of the Porter–Cologne Act (California Water Code, Sections 13260, 13274), states that persons discharging or proposing to discharge waste that could affect the quality of waters of the state (other than into a community sewer system) shall file a Report of Waste Discharge with the applicable RWQCB. For discharges directly to surface water (waters of the United States), an NPDES permit is required, which is issued under both state and federal law; for other types of discharges, such as waste discharges to land (e.g., spoils disposal and storage), erosion from soil disturbance, or discharges to waters of the state (such as isolated wetlands), WDRs are required and are issued exclusively under state law. WDRs typically require many of the same BMPs and pollution control technologies as required by NPDES-derived permits. Further, the WDRs' application process is generally the same as for CWA Section 401 water quality certification, though in this case, it does not matter whether the particular project is subject to federal regulation.

- ✓ **State Maximum Contaminant Levels** - As part of the California Safe Drinking Water Act, the State Department of Health Services (DHS) sets primary and secondary standards for drinking water supplies. The DHS-set maximum contaminant levels (MCLs) are at least as stringent as federal MCLs.

State Agencies

- ✓ **California State Water Resource Control Board (SWRCB) -** The SWRCB was established through the California Porter Cologne Water Quality Act of 1969. It is the primary State agency responsible for water quality management issues in California.

- ✓ **Regional Water Quality Control Board (RWQCB) – Central Valley Region -** The Regional Water Quality Control Board is responsible for implementing policies of the SWRCB, such as ensuring compliance with discharge thresholds and operating standards. The County is located within the RWQCB's Central Valley Region.

- ✓ **California Department of Fish and Wildlife (CDFW) -** The mandate of the California Department of Fish and Wildlife is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. In particular, CDFW is required under the California Endangered Species Act, the California Native Plant Protection Act, the California Environmental Quality Act, and the Natural Community Conservation

Planning Act to conserve species through listing, habitat acquisition and protection, review of local land use planning, multi-species conservation planning, stewardship, recovery, research, and education. The CDFW protects rare, threatened, and endangered species by managing habitat in legally designated ecological reserves or wildlife areas.

- ✓ **California Fish and Wildlife Code -** Under Sections 1600–1616 of the California Fish and Wildlife Code, CDFW regulates projects that affect the flow, channel, or banks of rivers, streams, and lakes. Projects that involve construction near or across a river, stream, or lake must comply with these regulations. Section 1602 requires public agencies and private individuals, respectively, to notify and enter into a streambed or lakebed alteration agreement with CDFW before beginning construction of a project that will: divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake; or use materials from a streambed. Section 1602 contains additional prohibitions against the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake.

- ✓ **Delta Water Agency -** The Delta Water Agency was established in 1965 for the maintenance of agricultural water quality throughout the Delta. In 1973, the agency was replaced by the following three agencies: North, Central, and South Delta Water Agencies.

- ✓ **Delta Protection Commission -** The Delta Protection Commission was established by the Delta Protection Act of 1992 to develop a long-term resource management plan for the Delta Primary Zone. The goals of the regional plan are to protect, maintain, and, where possible, enhance and restore the overall quality of the delta environment, including but not limited to agriculture, wildlife habitat, and recreational activities.

- ✓ **The Department of Water Resources (DWR) -** The DWR is responsible for the planning, construction, and operation of State Water Project (SWP) facilities, including the California Aqueduct, and sets conditions on the use of SWP facilities. In addition, DWR is responsible for statewide water planning, evaluating urban water management plans, overseeing dam safety and flood control, and transferring certain water rights permits (e.g., pre-1914).

- ✓ **The California Department of Public Health (DPH) -** DPH implements the SDWA. In addition, it oversees the operational permitting and regulatory oversight of public water systems. DPH requires public water systems to perform routine monitoring for regulated contaminants that may be present in their drinking water supply. To meet water quality standards and comply with regulations, a water system with a contaminant exceeding an MCL must notify the public and either remove the source from service or initiate a process and schedule to install treatment to remove the contaminant. Health violations occur when the contaminant level exceeds the maximum contaminant level (MCL) or when

water is not properly treated. In California, compliance is usually determined at the wellhead or the surface water intake. Monitoring violations involve failure to conduct or report, in a timely fashion, the results of required monitoring.

In addition, DPH conducts water source assessments, oversees water recycling projects, permits water treatment devices, certifies water system employees, promotes water system security, and administers grants under the State Revolving Fund and State bonds for water system improvements.

- ✓ **The California Water Plan -** The California Water Plan provides a framework for water managers, legislators, and the public to consider options and make decisions regarding California's water future. The plan, updated every five years, presents basic data on California's water resources, including water supply evaluations and assessments of agricultural, urban, and environmental water uses, to quantify the gap between water supplies and uses. The plan also identifies and evaluates existing and proposed statewide demand management and water supply augmentation programs and projects to address the State's water needs (DWR, n.d.a).

- ✓ **The California Department of Toxic Substances Control (DTSC) -** DTSC is responsible for oversight of hazardous substances and remediation of contaminated sites, including, in some cases, water sources.

- ✓ **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 to the applicable and numerical water quality standards, and implementation procedures.

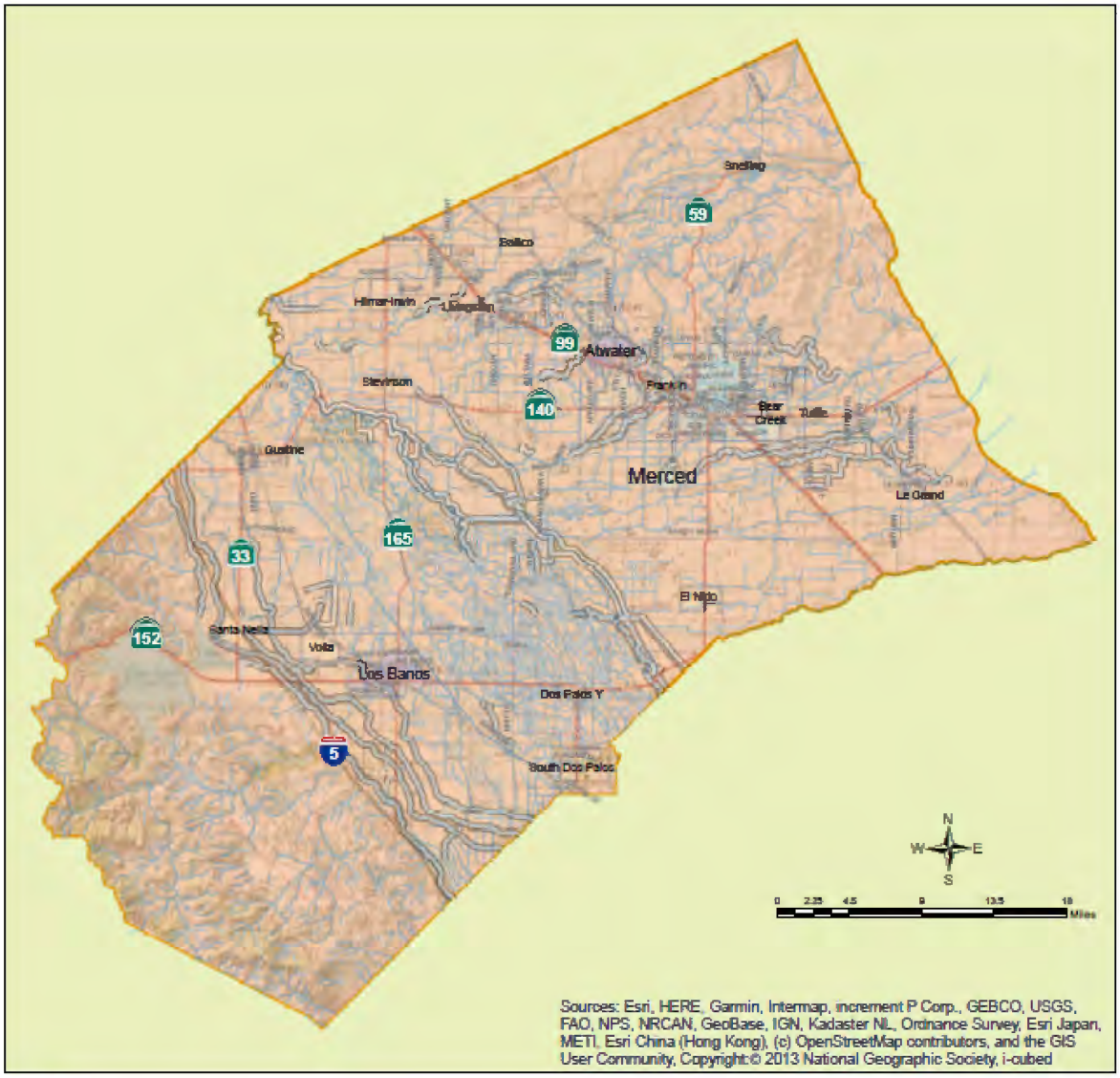
  The Porter-Cologne Water Quality Control Act authorizes the state boards to adopt, review, and revise policies for all waters of the state (including both surface and ground waters) and directs the regional boards to develop Basin Plans. The act also authorizes state boards to adopt Water Quality Control Plans. In the event of inconsistencies among state and regional board plans, the more stringent provisions apply.

- ✓ **California Emergency Management Agency -** Dam Inundation Mapping - Dam owners must submit flood routing information, land surveys to delineate the floodplain, and a technical report to support a dam failure inundation map to the California Emergency Management Agency. The purpose of the program is to provide decision support for emergency preparedness planning, mitigation, response to, and recovery from potential damage to life and property caused by dam-inundation flood waves. Based on approved inundation maps or delineated areas, cities and counties with territory within the mapped areas must adopt emergency procedures for the evacuation and control of populated areas below the dams. The technical study must include information on dam specifications, physical

conditions affected by the dam, including downstream areas and floodwater routing, and areas that could be affected by a dam failure. The requirements of the technical study can also include modeling worst-case breaching parameters and identifying the downstream hazard potential from partial or complete dam failure.

- ✓ **SGMA Groundwater Management -** On September 16, 2014, Governor Brown signed into law a three-bill legislative package, composed of AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley), collectively known as the Sustainable Groundwater Management Act (SGMA). For the first time in its history, California has a framework for sustainable groundwater management - "management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results." SGMA requires governments and water agencies of high- and medium-priority basins to halt overdraft and bring groundwater basins to balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically over-drafted basins, which will be in 2040. For the remaining high and medium-priority basins, 2042 is the deadline. In his signing statement, the governor emphasized that "groundwater management in California is best accomplished locally." Through the Sustainable Groundwater Management Program, DWR provides ongoing support to local agencies through guidance, financial, and technical assistance. SGMA empowers local agencies to form Groundwater Sustainability Agencies (GSAs) to manage basins sustainably and requires those GSAs to adopt Groundwater Sustainability Plans (GSPs) for California's crucial groundwater basins.

FIGURE 3-17
Hydrologic Regions in Merced County



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Environmental Setting

Hydrology

✓ **Drainage Patterns**

Merced County is housed in the central portion of the large San Joaquin River hydrologic region. In the San Joaquin region, the area drains into the San Joaquin River, which flows into counties north and south of Merced County as far as the San Joaquin and Fresno Counties. In this region, the coastal foothills are drained by small creeks that flow eastward toward the Fresno Slough on the Valley floor (see Figure 3-17).

✓ **Surface Waters**

There are numerous surface water sources in the area, including lakes, rivers, and streams. In addition, there are numerous creeks and canals. A number of wetland and vernal pool areas also exist (reference Figure 3-18). A majority of surface water is collected and stored in major reservoirs and lakes, including the Burns, Los Banos, and San Luis reservoirs, as well as Lake Yosemite and O'Neil Forebay.

The San Joaquin River flows from southeast to northwest in Merced County. The Merced River flows from the Sierra Nevada through the northern portion of the County. The Chowchilla River also flows along the County's southern border. The San Joaquin River's approximate mean annual run-off is 6 million acre-feet (an acre-foot is 325,851 gallons).

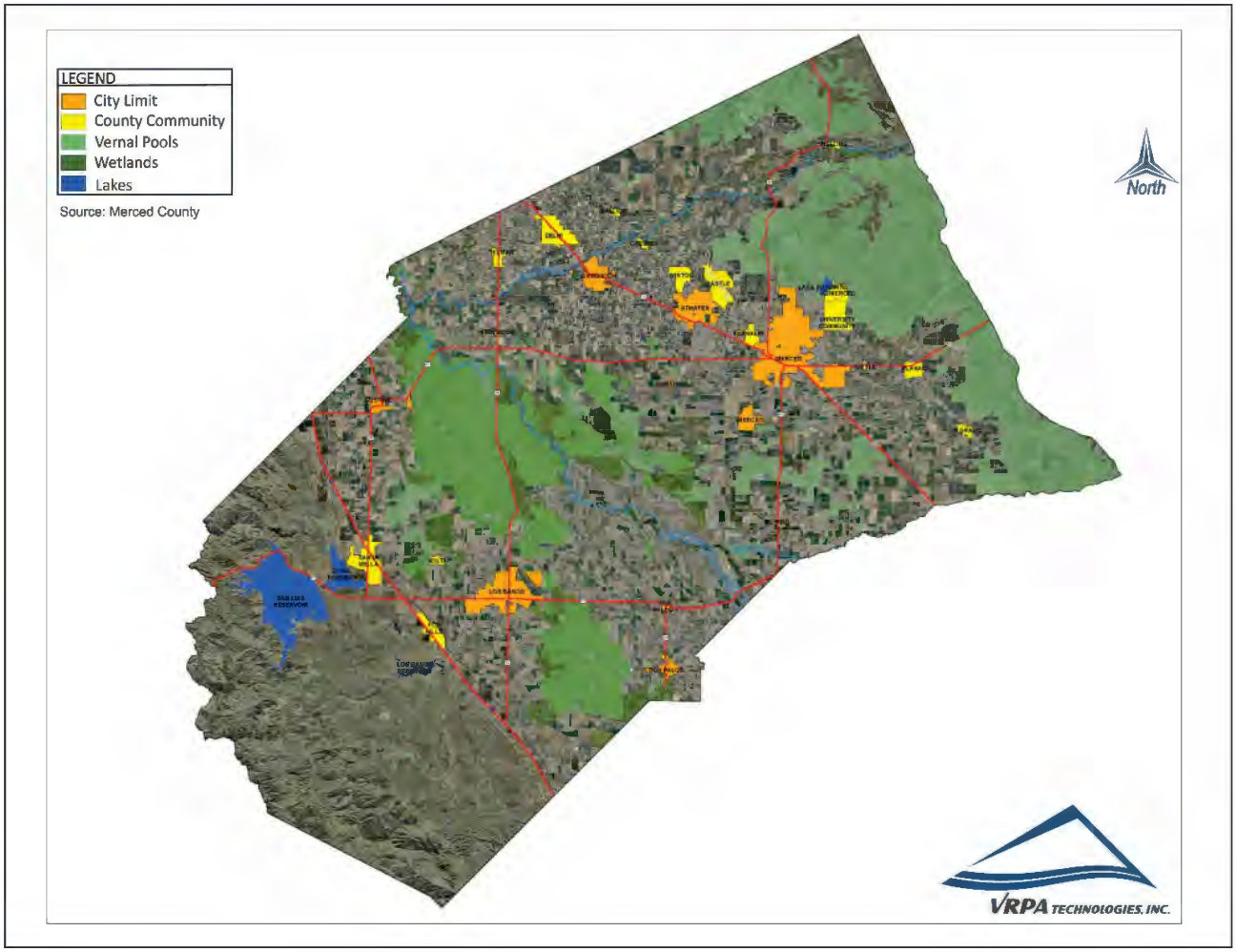
Vernal pools are an important surface-water feature. These pools collect seasonal rainfall, which typically provides habitat for plants and animals, including rare or endangered species. These water bodies are small and usually underlain by semi-impermeable soils, which restrict percolation into the underlying water table, resulting in pools that often persist from winter to summer.

California has lost a greater proportion of its original wetlands than any other state. In Merced County, wetlands are primarily along the Merced and San Joaquin River floodplains. As such, wetland protection is a challenge here, as it is across the rest of the country. The regulation of wetlands falls mainly with the U.S. Army Corps of Engineers, through the authority of Section 404 of the Clean Water Act. Wetlands as a biological resource habitat are discussed further in Sections 3-6 of this EIR - Biotic Resources. The San Joaquin River and the Merced River are the only two navigable rivers for recreation purposes in Merced County. There are no waterways navigable by commercial vessels.

✓ **Flooding**

Rainfall contributing to Merced County can range between ten and twelve inches of precipitation along the Valley floor annually on average, while the mountainous areas can receive up to 35 inches per year. Flooding in Merced County can result from natural phenomena such as heavy rains, excessive snowmelt, and runoff; man-made structural problems such as dam or levee failure; or any combination thereof. Flooding usually occurs in late fall and winter due to rainfall and in late spring to early summer due to snowmelt.

FIGURE 3-18
Wetlands and Vernal Pools in Merced County



The principal impacts of flooding include damage to permanent structures, relocation of movable objects, loss of human life, and damage to infrastructure and soil conditions. After the initial damage from floodwaters, standing water often causes secondary destruction, ruining crops, further undermining infrastructure, and contaminating water wells.

Flooding generally occurs when soil and vegetation cannot absorb excess moisture, and water runs off the land in quantities that exceed what stream channels can carry or natural ponds or man-made reservoirs can hold. Periodic floods occur naturally on many rivers, forming areas known as floodplains. These river floods usually result from heavy rain, sometimes combined with melting snow, causing rivers to overflow their banks. Floods in the mountain region are typically confined to narrow valleys, where peak flows from streams or rivers rise quickly and reach high velocities. A flood that rises and falls rapidly with little or no advance warning is called a flash flood. Flash floods usually result from intense rainfall over a relatively small area.

Flooding occasionally occurs on streets and roads in urbanized areas where stormwater is diverted into man-made drainage systems. Stormwater cannot permeate and percolate into the soil in urbanized areas where significant surface areas are covered by impervious surfaces and is therefore diverted into a storm drainage system. Storm drainage systems can include street gutters, underground storm drains, retention/detention basins, pumping stations, and open channels. In some areas, these drainage systems are occasionally overloaded with stormwater drainage, or the drains become clogged with leaves or other debris, impeding stormwater drainage from transportation facilities. The storm drainage system's ability to accommodate water flows is also largely determined by ground permeability and infrastructure capacity. In the metropolitan area, local cities and counties are responsible for maintaining and upgrading drainage facilities to accommodate increased water volumes.

A system of reservoirs serves as a large-scale flood control basin. Strategic management of reservoir releases and the use of canals serve to minimize the likelihood of flooding by rerouting water around populated areas. However, substantial flooding can result from dam failure.

According to the California Department of Water Resources, there are six (6) dams in service within the County, and four (4) of which could cause substantial flooding in Merced County, including Castle Dam and Lake Yosemite Dam. Dam failure could result from earthquakes, erosion, improper siting, rapidly rising floodwaters, and structural and design flaws, causing potential loss of life and damage to infrastructure.

Levees that are subject to erosion, rodent activity, and encroachment require continuous maintenance. In addition, erosion and sedimentation from agricultural land uses increase sediment flows, reducing the capacity of streams and drainage channels and inducing local flooding.

Merced County has historically been vulnerable to flooding due to the network of rivers that run through the Valley, partial levee failures, and the adjacent low-lying terrain. Accordingly, the U.S. Department of Housing and Urban Development (HUD) has designated portions of Merced County as special Flood Hazard areas. In compliance with the Federal Flood Insurance Program, HUD has provided Merced County with a series of Flood Boundary Maps. These maps, which delineate major areas of flooding throughout the County, are on file in the Merced County Department of Public Works and are hereby incorporated by reference.

According to the Merced County 2030 General Plan, approximately 27 percent of the County lies within the regulatory Federal Emergency Management Agency (FEMA) 100-year floodplain. A 100-year flood is defined as a flood event with a 1% chance of occurring in any given year and is, more or less, a statistical probability. Many low-lying areas near rivers in Merced lie within the 100-year floodplain. This type of flood is determined to inform land use planning and protect property and human safety. FEMA generally determines areas subject to flooding and the 100-year flood hazard.

Local flooding is a concern in Merced County, driven by reduced channel capacity, low elevations, and partial or total levee failures. Such flooding has historically occurred in areas adjacent to Bear and Black Rascal Creeks during smaller storm events, resulting in road closures, evacuations, and damage to residential property.

✓ **Groundwater Resources**

In addition to surface water systems, groundwater is a significant water resource. Groundwater is water that is stored underground, typically between saturated soil and rock. Because of their capacity to store usable water in a manner that is perennially secure from loss or evaporation, groundwater reservoirs are a significant water resource. Most groundwater reservoirs store far more water than flows through them annually. However, only the flow-through volume is renewable. A groundwater resource can contain several aquifers, or water-bearing zones. An aquifer refers to a rock formation that is water-bearing. Infiltration of rainfall and seepage from streams, canals, ditches, and underflow that enter the valley from tributary stream canyons recharge groundwater reservoirs. Significant areas of groundwater recharge occur along river channels, where porous soils and gravel contribute substantially to aquifer recharge. Other areas away from river floodplains are characterized by semi-consolidated gravels with low recharge capacity or, more often, by clay or hardpan soils, which allow only minimal groundwater recharge.

Merced County relies on groundwater as a source for municipal and domestic supply, industrial use, and agricultural use. Set within the lower topography of the San Joaquin River Basin, Merced houses the Merced, Turlock, Chowchilla, and Delta Mendota Subbasins. Groundwater is sensitive to contaminants, with sensitivity varying regionally and depending on groundwater depth, soil type, and soil permeability. Runoff from agricultural irrigation and animal facilities is of particular concern for groundwater contamination in areas with shallow, sandy, highly permeable soils.

Water Supply and Quality

Water is an important resource for Merced County. It is necessary for crop production in one of the largest agricultural-producing regions in the state/nation, as well as for meeting the needs of its approximately 269,000 inhabitants.

Water quality is generally determined by the concentrations of harmful trace elements and salinity.

The following information from the Merced County General Plan includes a review of the capacity and capabilities of the existing water supply, wastewater, and solid waste utility systems that may be affected by implementing the 2030 General Plan, on which the 2026 RTP/SCS is based. This section from the County General Plan discusses and reflects existing water usage and distribution, wastewater collection and treatment, and landfill capacity in the County. According to the General Plan, existing and future utility and service system conditions were compiled and analyzed based on CEQA assessment criteria and include a review of applicable regulations, requirements, plans, and policies from the following State and County sources:

- ✓ State Water Resources Control Board
- ✓ California Department of Public Health
- ✓ California Department of Water Resources
- ✓ CalRecycle (formerly Integrated Waste Management Board)
- ✓ Merced County Division of Environmental Health
- ✓ Merced County Public Works Department
- ✓ 2000 Merced County General Plan

✓ **Surface Water**

Merced County is located in the state's Regional Water Quality Control system and is marked by an abundance of surface water resources. Surface water systems in Merced County are generally characterized by a series of reservoirs and diversion dams that collect and store snowmelt in the upper elevations of the Sierra and flow along the San Joaquin River and the Merced River. Lake Yosemite and other lakes and reservoirs within the Valley have been developed over the years by private entities and several local irrigation and water districts. Water stored in reservoirs is typically used to

generate hydropower and then released into natural rivers. Most of the water is then captured in lower-elevation reservoirs in the foothills and stored for transmission through irrigation canals. These facilities are owned and operated by several public agencies and local irrigation and water districts. The water supply, however, varies by area and season. Many communities within the San Joaquin Valley must supplement natural surface water with water diverted from other sources.

Water "banking" also occurs in San Joaquin Valley communities to preserve water for future use. Several local water agencies and irrigation districts have adopted measures such as supplementing groundwater with surface water, maintaining recharge basins, and emphasizing conservation practices to preserve water.

According to the County of Merced, surface water in Merced County varies regionally, with high-quality water originating in the Sierra Nevada and deteriorating as it travels through the Valley, increasing the input of pollutants from agricultural runoff. A wide variety of pesticides pollute the San Joaquin River and its tributaries, with some at levels high enough to adversely affect aquatic organisms. Accordingly, conventional water treatment processes are used. However, bacterial counts and parasite cyst loads are emerging concerns. The streams contain large volumes of sediment and erosion of contaminated soils containing organochlorine insecticides. Levels of nitrate and ammonia exceed criteria in some of the tributaries, but not yet in the main leg of the San Joaquin River.

Tables 3-58 through 3-62 provide technical information from the Merced County General Plan on agricultural water demand, urban water demand, large public water systems, groundwater basin characteristics, and additional water-demand facilities.

Naturally occurring high concentrations of salt and selenium in marine rocks have reached the surface waters of the western San Joaquin Valley. Water supply contamination is a concern when elevated selenium levels reach deeper groundwater systems. The Lower Merced River has historically been affected by dredging and mining operations that have stripped areas of native vegetation and left dredger tailings levees that constrict the river and impede natural flow. A number of water bodies are, or have been, listed as impaired pursuant to Section 303(d) of the Clean Water Act. These water bodies in Merced County include several reaches of the San Joaquin and Merced Rivers, as well as the Grasslands Marsh and Mud Slough.

TABLE 3-58
Merced County Agricultural Water Demands

Irrigation Districts	Area Served (acres)	Consumers	Existing Water Demands (ac-ft per year)	Comments
Balliol-Cortez Water District (CWD)	---	---	—	District strictly formed to address declining ground water levels; it does not provide irrigation services.
Centinella Water District (CWD)	840	---	---	The CWD is located on the northern end of the San Luis Reservoir, and receives Central Valley Project (CVP) water via the Delta-Mendota Canal under an interim contact with the US Bureau of Reclamation (USBR). The water is conveyed to landowners via privately held canals and pipelines. Land within the district is designed as mitigation habitat.
Central California Irrigation District (CWD)	143,400	560	510,000	Covers western Fresno and Stanislaus countires in addition to western Merced County.
Chowchilla Water District (CWD)	85,000	400	133,187	CWD has righta to approximately 43,000 afy of water from the Buchanan Dam , which is operated and maintained by the United States Army Corps of Engineers. In addition, the Districts has appropriative rights issued by the State Water Resources Control Board to divert water from the Chowchilla River.Futher, the district has contracted with USBR to receive CVP surface waters from the Madera Canal Varies,with an average annual supply of approximately 90,187 afy.
Del Puerto Water District	47,400	---	75,312	Reorganzied in 1995, the Del Puerto Water District covers a 50 mile length strip of land on both sides of the Delta-Mendota Canal. Under a long term contract with USBR, it supplies CVP water via turnouts on the Delta Mendota Canal and privately held conveyance systems.
Eagle Field Water District	1,325	2	3,539	Recieves irrigation water from the CVP via two turnouts on the Delta-Mendota Canal under an interim contact with the USBR.Ground water wells are used to supplement CVP supply in dry years.
East Side Water District (EWD)	54,000	---	---	Formed specifically to address declining groundwater levels: EWD is not a service provider.
Grassland water District	51,537	145	varies	Distributes annual allotment of 180,000 acres-feet from USBR for wildlife habitat and wetland use.
Laguna Water District	417	1	400	Annual CVP allotment from USBR is 800 afy.
Merced Irrigation District	163,812	2,223	500,000	Out of 163,812 acres in MID , 116,000 acres are irrigated. The water source is the Merced River. Between 1994 and 2007, MID diversions have ranged between 430,000-571,000 afy and averaged about 500,000 afy.
Merquin Irrigation District	6,000	100	18,211	MCWD purchase purchases water from Stevinson Water District.
Pacheco Water District	4,999	13	12,000	The annual CVP allotment from USBR is 10,080 afy but the production capacity of PWD facilities is 15,000 afy. Supplemental water is purchased
San Luis Water District	66,449	605	90,000	The annual CVP allotment from USBR is 125, 080 afy. SLWD also serves approximately 325 M&I customers. Historical use of CVP water for M&I is 1,065 afy. 38,287 of 66,440 acres are currently rrigated.
Stevinson Water District	3,628	2	26,400	SWD obtain water from the Merced River. MCWD a customer of SWD.
Turlock Irrigation District (TID)	150,000	4,900	6,000,000	TID supplies irrigation water to agricultural customers in Stanislaus and Merced counties and muncipal water to the town of La Grange. Approximately 45,000 acres are within Merced County. The water source is Tuolumne River, supplemented by groundwater in dry years.
Turner Island Water District	7,520	4	21,000	TIWD obtians water from the Eastside Canal, Henry Miller Reclamation District, and wells.

TABLE 3-59
Existing and Projected Urban Water Demands in Merced County

City/Community	Existing Water Demands (arce-feet per year)	Year Basis for existing Demands	Projected Water Demands (acre-feet per year)	Year Basis for Projected Demands
Eastern Merced County				
Artwater	10,734	2006	23,569	buildout (2020)
Livingston	7,730	2006	19,156	2030
Merced	24,166	2008	44,420	2030
Franklin-Beachwood	-	2004	1.974	buildout
Le Grant	336	2007	1,027	buildout
Planada	1,228	2007	1,308	buildout
Winton	1,748	2007	2,787	buildout
Celeste	-	-	116	buildout
Cressy	-	-	498	buildout
El Nido	-	-	147	buildout
Stevinson	-	-	165	buildout
Tuttle	-	-	128	buildout
Total Projected Demands (Eastern Merced County)			93,500	
Western Merced County				
Dos Palos (includes Midway, North Dos Palos,South Dos palos	1,344	2007	6,769	buildout (2025)
Gustine	1,371	2001	4,226	2020
Los Banos	9,522	2007	21,284	2030
Santa Nella	549	2007	4,794	buildout
Fox Hills	0	-	1,594	buildout
The Village of Laguna San Luis	0	-	11,146	buildout
Volta	-	-	707	buildout
Dos Palos Y	-	-	365	buildout
Total Projected Demands (Western Merced County)			**50,000**	
Northern Merced County				
Delhi	1,866	2006	3,448	2025
Hilmar	1,905	2007	2,963	buildout
Balico	-	-	411	buildout
Snelling	-	-	731	buildout
Total Projected Demands (Northern Merced County)			7,600	
Total Projected Demands (rounded)			**154,000**	

TABLE 3-60
Merced County Large Public Water Systems (>200 service connections)

Municipal Water Systems	Community Water Systems
City of Atwater - Services approximately 27,400 residents and the Castle Commerce Center via 11 groundwater wells and 3 storage tanks. Well depths range from 178 to 670 feet. No surface contracts.The City of Atwater also treats and discharges roughly 4,500 afy of reclaimed municipal and industrial effluent for agricultural purpose.	Planada- The Planada Community Services District (Planada CSD) Provides domestic water to approximately 4,500 residents through 1,227 connections.Five groudwater wells with dephs ranging from 296 to 370 feet.Planada also discharge around 6,000 afy of treated effluent for agriculture.
City of Merced - Domestic water to approximately 74,000 residents including the unicorporated community of Celeste and U.C. Merced. 22 Groundwater wells and surface water deliveries from MID at a rate of 100 afy. Well depths range from 98 to 833 feet.The city utilizes approximately 8,700 afy of reclaimed wastewater to irrigate cropland and wetland areas.	Le Grand - Le Grand Community Services Discrict (LGCSD) provides potable water to approximatley 1,800 connections in the unincorpoated community. Three groundwater wells with depths ranging from 340 to 416 feet. Le Grand also treats and discharges around 6,000 afy of treated effluent for agriculture.
City of Livingston - Domestic water to approximately12,400 residents. 8 groundwater wells and 1 storage tank. Well depths range from 300 to 350 feet. No surface water contracts. Livingston also dischrages around 6,000 afy of treated effluent for agriculture.	Meadowbrook(Franklin/Beachwood) - Unincorporated community receives water through privately held Meadowbrook Water Company. Four groundwater wells with depths ranging from 100 to 358 feet.
	Winton – Winton Water and Sanitary District provideswater to approximately 10,613 customers through 2,982 connections from three groundwater Wells with depths ranging from 285 to 935 feet. Winton's discharges are included in the City of Atwater's 4,500 afy of treated reclaimed municipal and industrial effluent used for agricultural irrigation.
Western Merced County (Delta- Mendota Groundwater Basin)	
City of Los Banos - Provides water to approximately 35,980 residents via 13 groundwater wells, and 100,000 gallon and 5.0 million gallon storage tanks. Well depths range from 180 to 310 feet. There are no current surface water contracts, however there is the potential to purchase water from the California Aqueduct through the State Water Project.	Santa Nella – The Santa Nella County Water District (SNCWD) treats water from the San Luis Water District to service its 500 connections to the unincorporated community. The SNCWD has one groundwater well that is used to blend with treated surface water and service commercial customers along State Route 33.
City of Dos Palos – Provides water to 5,010 residents from surface water obtained via the State Water Project's California Aqueduct, both within the City and in surrounding unincorporated communities through a Joint Powers Authority.	
City of Gustine – Supplies approximately 5,400 residents via 4 groundwater wells and a 750,000 gallon storage tank. Well depths range from 200 to 250 feet.	
Northern Merced County (Turlock Groundwater Basin)	
	Delhi – The Delhi County Water District (Delhi CWD) supplies approximately 8,000 residents in the unincorporated community of Delhi. Source water is 5 groundwater wells ranging in depth from 200 to 425 feet.
	Hilmar – The Hilmar County Water District (Hilmar CWD) services approximately 4,900 residents in the unincorporated community of Hilmar. Source water is supplied via 3 groundwater wells, a storage tank and pump station. Well depths range from 125 to 305 feet.

TABLE 3-61
Characteristics of Groundwater Basins in Merced County

Basin	Well Yields, typicals (gallons per minute)	Wells Dephs, (feet)	TDS and Groundwater Zones (milligrams per liter)	Annual Urban Extraction(acre-feet per year)	Annual Agricultural Extraction(acre-feet per years)
Turlock	1,000- 2,000	50 - 350	• TypicalTDSrangeof200-500mg/L • Unconfined, semi-confined, and confined	65,000	387,000
Merced	1,500-1,900	100-800	• TypicalTDSrangeof200-400mg/L • Unconfined and confined within lower consolidated rocks	54,000	492,000
Chowchilla	750-2,000	100-800	• TypicalTDSrangeof120-390mg/L • Increases in TDS significant near the San Joaquin River • Unconfined to confined	6,000	249,000
Delta-Mendota	800-2,000	400-600	• TypicalTDSrangeof700-1,000mg/L • Significant variations in water quality between the upper and lower zones • Unconfined and confined	17,000	491,000
Total				**142,000**	**1,619,000**

TABLE 3-62
Additional Merced County Water Supply Facilities

Name	Description
Eastern Merced County (Merced and Chowchilla Groundwater Basins)	
Other Rural Centers	Cressy, El Nido, Stevinson, and Tuttle utilize groundwater via private wells.
Western Merced County (Delta-Mendota Groundwater Basins)	
Midway	The Midway Community Services District (Midway CSD) services 186 customers in the unincorporated community via water obtained in a Joint Powers Authority (JPA) with the City of Dos Palos. A JPA is an agreement between two or more agencies to act collectively to provide a public service to each of the agencies.
North Dos Palos	The North Dos Palos Water District (NDPWD) services 50 connections in the vicinity of State Route 33 and Carmellia Avenue via water obtained in a JPA with the City of Dos Palos.
South Dos Palos	The South Dos Palos County Water District (SDPCWD) services 255 connections with water obtained in a JPA with the City of Dos Palos.
Fox Hills	The San Luis Water District (SLWD) is slated to provide water from the Central Valley Project (CVP) for subsequent treatment to service approximately 3,460 approved residential lots in the unincorporated community of Fox Hills.
Other Incorporated Communities	Volta and Dos Palos "Y" are unincorporated communities that utilize groundwater through various private, industrial and low capacity wells.
Villages of Laguna San Luis	The Villages of Laguna San Luis will coordinate with the San Luis Water District (SLWD) for an increase of Central Valley Project (CVP) allocations, and water purchase and transfer through the San Joaquin River Exchange Contractors Water Authority to serve the projected 15,895 dwelling units in the community. Through a transfer and utilization agreement with SLWD, recycled water would be provided from the Villages wastewater treatment plant for agricultural uses in exchange for CVP water supplies from SLWD.
Northern Merced County (Turlock Groundwater Basin)	
Ballico	The Ballico Community Services District (Ballico CSD) was reported to provide domestic water service to 50 dwellings in 1983.
Snelling	The community relies on low capacity individual groundwater wells.

✓ **Groundwater**

Use of groundwater has caused serious overdraft in some areas of the County and has constrained water supplies. The California Department of Water Resources, in Bulletin 118, Interim Update 2016, identifies the Merced, Chowchilla, and Delta Mendota Basins, which include most of Merced County, as being in critical overdraft. Overdraft can lead to numerous issues, such as increased extraction costs, land subsidence, water quality degradation, and environmental impacts. In reaction to drought conditions, nearly all communities in the region have introduced water conservation programs.

The groundwater situation in the Valley is ideal; high clay content and other impervious sediments in the soils, sometimes known as "Corcoran Clay," combined with a low water table, make it difficult for contaminants to reach the groundwater supply. Groundwater naturally contains pollutants, which occur when water contacts rocks and soils and dissolves solids. However, human activities further impact water quality by affecting the quantity and quality of water that eventually percolates back into the soil and recharges groundwater sources. High concentrations of dissolved solids create objectionable odors, taste, and staining. The quality of groundwater in Merced County is affected by three main factors: agricultural, industrial, and urban pollution, including stormwater runoff. As with surface water contamination, stormwater that washes over transportation facilities carries urban pollutants. When these untreated effluents percolate into the soil, some contaminants are filtered out before reaching the groundwater aquifer. Reductions in permeable surfaces limit percolation and associated filtration that treat these contaminants.

Groundwater in some localized areas contains elevated levels of dibromochloropropane (DBCP) and ethylene dibromide (EDB), organic solvents trichloroethylene (TCE) and tetrachloroethylene (PCE), inorganic arsenic, iron, manganese, and nitrate in the county's groundwater. TDS is also a concern, and nitrate levels often exceed drinking water standards. Pesticides and volatile organic compounds (VOCs) are often detected, though in most locations, concentrations have yet to exceed drinking water standards.

✓ **Storm Water Runoff**

Stormwater runoff in the urbanized portions of Merced County is diverted into storm drain systems that funnel it into the surface water network. Surface water drainage is augmented by natural drainage patterns in non-urban areas. The quality of stormwater runoff affects the quality of the surface water it eventually flows into. Untreated pollutants such as suspended solids, pathogens, oil and grease, air pollutants, pesticides, fertilizers, and animal wastes are carried in stormwater as it passes over transportation facilities. In 1987, the federal government created the National Pollutant Discharge Elimination System (NPDES) to address this problem. The NPDES authorizes state water

quality agencies to issue permits to cities and counties to develop, implement, and enforce runoff management programs. Therefore, local jurisdictions are responsible for regulating harmful constituents in stormwater runoff, including nonpoint-source pollutants, and for developing methods to contain and treat runoff.

Methodology

Regulatory information and recommended mitigation measures were obtained from state-recommended best management practices for stormwater management.

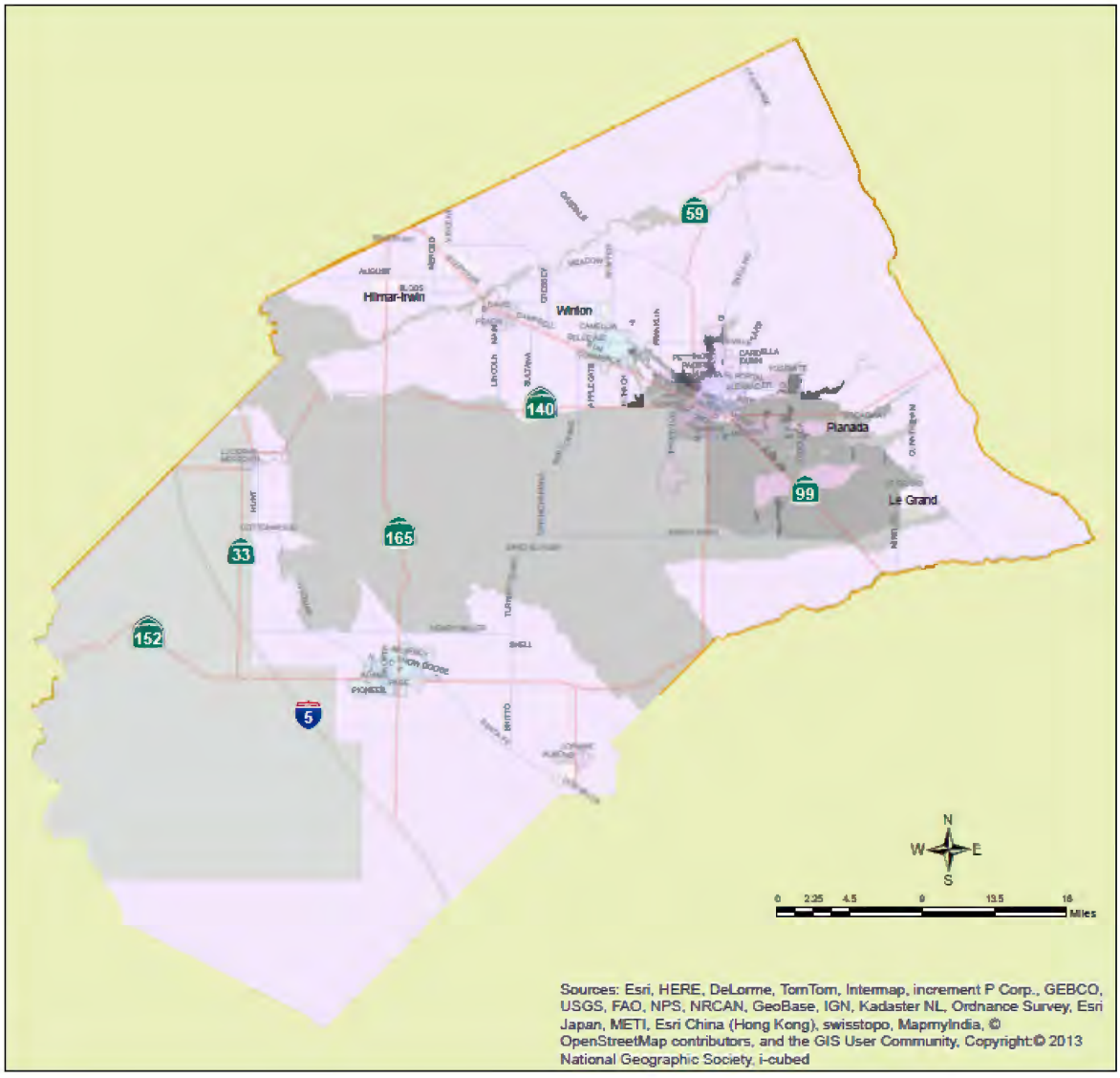
Environmental Impacts, Mitigation Measures, and Significance After Mitigation

To determine the actual potential for significant impacts on hydrology and water resources resulting from the implementation of the 2026 RTP/SCS, transportation project, and future development project-specific studies would be necessary. However, some general impacts can be identified based on the nature of individual transportation improvements and future land use development. Projects and future land use development in watersheds, adjacent to impaired water bodies, or in flood-hazard areas are most likely to affect water resources. Construction of the proposed projects and future land use development could affect water quality by increasing the area of paved surfaces. Water quality can be affected by stormwater runoff that flows over paved surfaces before reaching a major creek, river, or other water body.

Floodplains are areas that are periodically inundated during high flows in nearby streams or by high water levels in ponds or lakes. Natural floodplains provide wildlife and plant habitat, open space, and groundwater recharge. Project and future development construction could affect these uses if not mitigated.

A proposed individual improvement project or future development project would be likely to have a greater impact on water resources in areas where proposed improvements are directly adjacent to or cross a drainage facility or water body, and in areas where projects are located in 100-year flood hazard areas, than projects further from drainage facilities, water bodies, or 100-year flood hazard areas (reference Figure 3-19).

FIGURE 3-19
FEMA 100-Year Flood Zone Areas in Merced County



Legend

DISPLAY	CENSUS2010POP	FLD_ZONE
Interstate	> 1,000,000	0.2 Pct Annual Chance Flood Hazard
Freeway	500,000 - 1,0000,000	Zone A
Major Road	100,000 - 500,000	Zone AO
Minor Road	50,000 - 100,000	Zone AH
Local	15,000 - 50,000	Zone AE
	<15,000	D
	Communities	X

Water (Area)

Criteria for Significance

CEQA Guidelines establish that a significant impact would be expected to occur if the Project were:

- ✓ Violate the Regional Water Quality Control Board water quality standards or waste discharge requirements.
- ✓ Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
- ✓ Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
- ✓ Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
- ✓ Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- ✓ Otherwise, substantially degrade water quality.
- ✓ Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- ✓ Place within a 100-year flood hazard area structures that would impede or redirect flood flows.
- ✓ Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.
- ✓ Inundation by seiche, tsunami, or mudflow.
- ✓ Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan

Short-Term Impacts

Short-term impacts are temporary and generally related to construction activities. Construction activities undertaken to implement transportation improvements and future development could include excavation, soil stockpiling, boring, and grading. Soil erosion is likely during construction and could directly affect the water quality of local drainage systems, which may discharge into surface water systems. Soils can contain nitrogen and phosphorus, which, when carried into water bodies, can trigger algal blooms.

Extensive algal blooms can reduce water clarity, deplete dissolved oxygen, and create unpleasant odors. Excessive sediment deposition in stream channels can blanket fauna and clog streambeds, degrading

aquatic habitat. Increased turbidity from suspended sediments can also reduce photosynthesis, which produces the food supply and aquatic habitat. Additionally, sediment from individual improvement projects and on-site erosion from new development could accumulate in downstream drainage facilities, interfering with streamflow and exacerbating downstream flooding. Construction impacts could affect local storm-drain catch basins, culverts, flood-control channels, streams, and rivers, depending on the specific improvement project and the new development location. Most runoff in urban areas is eventually directed to either a storm drain or a water body.

Long-Term Impacts

Increases in the amount of nonpoint-source pollutants generated regionally could occur. In general, they would be attributed to increases in impervious surface area associated with new development and paving, combined with increased overall regional traffic. These nonpoint source pollutants include oil and grease, petroleum hydrocarbons, metals, and possibly nutrients. The paving required for highway projects and the construction of future land use development could significantly affect the amount of surface water that filters into the ground. Pollutants in the runoff from proposed transportation facilities and future development could affect groundwater basins.

Impact HW 3.11.1 – Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Local surface water quality would be affected by increased urban runoff and construction runoff. Increasing the impervious surface area would increase urban runoff, thereby transporting greater quantities of contaminants to receiving waters. Construction activities can increase pollutant loads in stormwater. In addition, road cut erosion can increase long-term siltation in local receiving waters.

Mitigation Measures

The specific impacts on hydrology and water quality will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **HW 3.11.1-1** Improvement projects and new development will include upgrades to storm water drainage facilities to accommodate increased runoff volumes. These upgrades may include the construction of detention basins or other structures that delay peak flows and reduce flow velocity.

- ✓ **HW 3.11.1-2** Transportation network improvements and future land use developments will comply with local, state, and federal floodplain regulations. Proposed transportation improvements and applicable new developments will be engineered by responsible agencies to accommodate storm drainage flow.

- ✓ **HW 3.11.1-3** Responsible agencies should ensure that operational best management practices for street cleaning, litter control, and catch basin cleaning are provided to prevent water quality degradation. Responsible agencies implementing projects requiring continuous water removal facilities should provide monitoring systems, including long-term administrative procedures, to ensure proper operation throughout the life of the Project.

- ✓ **HW 3.11.1-4** Responsible agencies should ensure that new facilities include water quality control features such as drainage channels, detention basins, and vegetated buffers to prevent pollution of adjacent water resources by runoff.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce violations of the Regional Water Quality Control Board water quality standards or waste discharge requirements, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact HW 3.11.2 – Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

The installation of transportation infrastructure, the expansion of project facilities, and the construction of new developments could encounter groundwater. Individual projects and future land use developments may require dewatering during construction and throughout the life of a project. The process of dewatering involves removing water (groundwater or surface water) from a construction site using pumping or evaporation. The dewatered effluent must be discharged at another location, potentially affecting groundwater. In addition, individual projects under the RTP/SCS could affect

groundwater recharge by increasing paved surface area. The paving required for highway projects and the construction of future land use developments could significantly affect the amount of surface water that infiltrates the ground. Pollutants in the runoff from proposed transportation facilities and future development could affect groundwater basins.

Mitigation Measures

The specific impacts on hydrology and water quality will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **HW 3.11.2-1** Transportation network improvements and future land use developments will comply with local, state, and federal floodplain regulations. Proposed transportation improvements and applicable new developments will be engineered by responsible agencies to accommodate storm drainage flow. Responsible agencies should ensure that operational best management practices for street cleaning, litter control, and catch basin cleaning are provided to prevent water quality degradation. Responsible agencies implementing projects requiring continuous water removal facilities should provide monitoring systems, including long-term administrative procedures, to ensure proper operation throughout the life of the Project.

- ✓ **HW 3.11.2-2** Local agencies shall form Groundwater Sustainability Agencies (GSAs) in accordance with the collection of State legislation [AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley)] known as the Sustainable Groundwater Management Act (SGMA), as applicable, to manage high and medium priority basin sustainably and requires those GSAs to adopt Groundwater Sustainability Plans (GSPs) for crucial groundwater basins in California.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on groundwater supplies or recharge activities, such impacts are likely to remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine

appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact HW 3.11.3 – 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: i) result in a substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows?

Construction activities for the individual RTP and SCS projects may involve soil disturbance, excavation, cutting/filling, stockpiling, and grading. Consequently, erosion and sedimentation could increase, affecting water quality and pollutants in the water. In addition, road cut erosion can increase long-term siltation in local receiving waters. During site grading, trenching, and other construction activities, bare soil areas are exposed to erosive forces during rainfall. They are much more likely to erode than vegetated areas because they lack the dispersion, infiltration, and retention provided by vegetation cover. The extent of potential impacts depends on soil erosion potential, type of construction practice, size of the disturbed area, timing of rainfall, and topography and proximity to drainage channels.

Before construction activities can begin, a project applicant must submit a Storm Water Pollution Prevention Plan (SWPPP) and Standard Urban Stormwater Mitigation Plans that will be used in the planned project construction. The applicant must receive approval and submit a Notice of Intent prior to initiating construction. Each individual project in the 2026 RTP/SCS is expected to adopt Best Management Practices (BMPs) appropriate to local conditions and the proposed construction techniques to reduce pollution runoff.

The Project could increase flooding hazards. The installation of impervious surfaces increases stormwater runoff volumes and peak flow rates. This can create flooding hazards in local receiving waters and drainage systems. The Plan could also alter existing drainage patterns or substantially increase the rate or amount of surface runoff, resulting in flooding or producing or contributing runoff that would exceed the capacity of existing or planned storm water drainage systems.

Stormwater runoff is influenced by rainfall intensity, ground surface permeability, watershed size and shape, and physical barriers. The introduction of impermeable surfaces greatly reduces natural infiltration, increasing runoff volume. In addition, paved surfaces and drainage conduits can accelerate runoff velocity, concentrating peak flows in downstream areas more quickly than under natural conditions. Significant increases in runoff and peak flows can overwhelm drainage systems and alter

downstream flood elevations. Increased runoff velocity can promote scouring of existing drainage facilities, reducing system reliability and safety.

The proposed transportation plan may result in projects located adjacent to or within the following regulated streams under Board jurisdiction pursuant to Title 23, California Code of Regulations (23 CCR), Section 112:

Stream	County - Limits
Bear Creek	Merced
Black Rascal Creek	Merced
Canal Creek	Merced
Chowchilla Canal Bypass	Merced, Madera, and Mariposa
Chowchilla River	Merced, Madera, and Mariposa, to Buchanan Dam
Duck Slough	Merced
Eastside Bypass	Merced and Madera
Edendale Creek	Merced
El Capitan Canal	Merced
Fahrens Creek	Merced
Lower San Joaquin River Flood Control Project	Fresno, Madera, and Merced
Mariposa Bypass	Merced
Mariposa Creek	Merced
Merced River	Merced
Miles Creek	Merced
Owens Creek	Merced

The Board enforces its regulations governing the construction, maintenance, and protection of adopted flood-control plans that protect public lands from floods. Adopted flood control plans include federal and state facilities under the State Plan of Flood Control, regulated streams, and designated floodways. The geographic extent of Board jurisdiction includes the Central Valley, and all tributaries and distributaries of the Sacramento and San Joaquin Rivers, and the Tulare and Buena Vista basins (23 CCR, Section 2). A Board permit is required prior to working in the Board's jurisdiction for the following:

- ✓ Placement, construction, reconstruction, removal, or abandonment of any landscaping, culvert, bridge, conduit, fence, projection, fill, embankment, building, structure, obstruction, encroachment, excavation, the planting, or removal of vegetation, and any repair or maintenance that involves cutting into the levee (23 CCR Section 6);

- ✓ Existing structures that predate permitting, or where it is necessary to establish the conditions normally imposed by permitting. The circumstances include those in which responsibility for the encroachment has not been clearly established, or in which ownership and use have been revised (23 CCR Section 6).
- ✓ Vegetation plantings require submission of detailed design drawings; identification of vegetation type; plant and tree names (both common and scientific); quantities of each type of plant and tree; spacing and irrigation method; a vegetative management plan for maintenance to prevent the interference with flood control operations, levee maintenance, inspection, and flood fight procedures (23 CCR Section 131).

Other local, federal, and State agency permits may be required and are the applicant's responsibility to obtain.

Board permit application forms and the complete 23 CCR regulations are available on the following website: http://www.cvfpb.ca.gov/. Maps of the Board's jurisdiction, including all tributaries and distributaries of the Sacramento and San Joaquin Rivers, and Board-designated floodways, are also available on the Department of Water Resources website at **http://gis.bam.wate.ca.gov/bam/**.

Additional Considerations Related to Potential Impacts of Vegetation and Hydraulics

The accumulation and establishment of unmanaged woody vegetation may negatively impact channel capacity and increase the potential for levee overtopping or other failures. When vegetation develops and becomes habitat for wildlife, maintenance to initial baseline conditions typically becomes more difficult as the removal of vegetative growth may be subject to federal and State resource agency requirements for on-site mitigation. The proposed project should include mitigation measures to avoid decreasing floodway channel capacity. Adverse hydraulic impacts of the proposed encroachment could impede or reroute flood flows and/or increase sediment accumulation. The proposed project should include mitigation measures for channel and levee improvements and maintenance to prevent and/or reduce hydraulic impacts. If possible, off-site mitigation outside the Board's jurisdiction should be used to offset vegetation removed at the project location.

The projected growth in MCAG County would result in an incremental reduction in the amount of natural soil surfaces available for infiltration of rainfall and runoff between now and 2042, potentially generating additional runoff during storm events. In addition, the increase in impervious surfaces, along with increased surface water runoff, could increase non-point source pollutant discharge in stormwater and non-stormwater in the plan area. Growth alone does not necessarily result in the exceedance of stormwater drainage capacity or in polluted runoff. It is the siting and design of new development, in relation to existing development, that determine whether adequate stormwater drainage exists or will exist, and whether appropriate measures are taken to limit or reduce polluted runoff. New development

could add additional sources of runoff. However, in portions of MCAG County that are already built out, such increases would either be accommodated by existing infrastructure or, under local ordinances and state regulations, project proponents would be required to make infrastructure improvements. In rural or less-developed areas, new housing and employment developments may require additional stormwater drainage infrastructure and control measures to limit polluted runoff. However, local stormwater management plans and policies, and State Water Board requirements, which implement federal Clean Water Act requirements, will mitigate these potential impacts.

A portion of the transportation projects included in the 2026 RTP and SCS could occur within the 100-year flood hazard area, thus increasing the potential to obstruct or exacerbate floodwaters. The construction of projects involving support structures in the floodway could obstruct floodwaters at some locations. Placement of structures within a floodplain can displace floodwaters and alter the base flood elevation level upstream and in neighboring areas. Likewise, floodwater can cause scour, resulting in erosion and sedimentation downstream of structures. Drainage areas could be altered by highway corridors, where floodwaters could be detained by medians and roadside ditches. Proposed bridge supports could block debris in waterways, creating obstructions and further elevating upstream flood levels. The 2026 RTP and SCS could alter existing drainage patterns or substantially increase the rate or amount of surface runoff, resulting in flooding or producing or contributing runoff that exceeds the capacity of existing or planned storm water drainage systems.

Natural desert conditions promote runoff that can cause flash flooding. In those areas of MCAG County where soils have naturally low permeability and are prone to rapid saturation, high rainfall volumes remain on the surface as runoff. When impervious surfaces, such as highways, are placed within these areas of an existing floodplain, the public is exposed to the hazards of flash flooding. Placing new structures within an existing floodplain can impede floodwaters, altering flood risks both upstream and downstream. The flooding risks associated with projects in flood zones can be mitigated through appropriate design and alignment considerations.

Mitigation Measures

The specific impacts on hydrology and water quality will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **HW 3.11.3-1** Prior to construction within the vicinity of a watercourse, the project sponsor can and should obtain all necessary regulatory permits and authorizations from the U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW), California Coastal Commission, and local jurisdictions, and should comply with all conditions issued by applicable agencies. Required permit approvals and certifications may include, but not be limited to, the following:

  - U.S. Army Corps of Engineers (Corps): Section 404. Permit approval from the Corps should be obtained for the placement of dredge or fill material in Waters of the U.S., if any, within the interior of the project site, pursuant to Section 404 of the federal Clean Water Act.
  - Regional Water Quality Control Board (RWQCB): Section 401 Water Quality Certification. Certification that the project will not violate state water quality standards is required before the Corps can issue a 404 permit, above.
  - California Department of Fish and Wildlife (CDFW): Section 1602 Lake and Streambed Alteration Agreement. Work that will alter the bed or bank of a stream requires authorization from CDFW.

  A qualified environmental consultant can and should be retained and paid for by the project sponsor to make site visits as necessary, and as a follow-up, submit to the Lead Agency a letter certifying that all required conditions have been instituted during the grading activities.

- ✓ **HW 3.11.3-2** Project sponsors can and should comply with the State-wide construction storm water discharge permit requirements, including preparation of Storm Water Pollution Prevention Plans for transportation improvement construction projects. Roadway construction projects can and should comply with the Caltrans stormwater discharge permit. BMPs can and should be identified and implemented to manage site erosion, wash water runoff, and spill control.

- ✓ **HW 3.11.3-3** Project sponsors can and should implement BMPs to reduce erosion, sedimentation, and water quality impacts during construction to the maximum extent practicable. Plans demonstrating BMPs should be submitted to the lead agency for review and approval. At a minimum, the project sponsor can and should provide filter materials deemed acceptable to the lead agency at nearby catch basins to prevent any debris and dirt from flowing into the local storm drain system and creeks.

- ✓ **HW 3.11.3-4** Project sponsors can and should submit an erosion and sedimentation control plan for review and approval by the appropriate government agency. All work should incorporate all applicable BMPs for the construction industry, including BMPs for dust, erosion, and water quality. The measures should include, but are not limited to, the following:

- On sloped properties, the downhill end of the construction area must be protected with silt fencing (such as sandbags, filter fabric, silt curtains, etc.) and hay bales oriented parallel to the contours of the slope (at a constant elevation) to prevent erosion into the street, gutters, and storm drains.
- In accordance with an approved erosion control plan, the project sponsor should implement mechanical and vegetative measures to reduce erosion and sedimentation, including appropriate seasonal maintenance. One hundred percent (100%) degradable erosion-control fabric should be installed on all graded slopes to protect and stabilize them during construction and prior to the establishment of permanent vegetation. All graded areas should be temporarily protected from erosion by seeding with fast-growing annual species. All bare slopes must be covered with staked tarps when rain is occurring or is expected.
- Minimize the removal of natural vegetation or ground cover from the site to reduce the potential for erosion and sedimentation. Maximize the replanting of the area with native vegetation as soon as possible.
- Install filter materials acceptable to the appropriate agency at the storm drain inlets nearest to the project site prior to the start of the wet weather season; site dewatering activities; street washing activities; saw cutting asphalt or concrete; and to retain any debris flowing into the storm drain system. Filter materials should be maintained and/or replaced as necessary to ensure effectiveness and prevent street flooding.
- Ensure that concrete/granite supply trucks or concrete/plaster finishing operations do not discharge wash water into water courses, street gutters, or storm drains.
- Direct and locate tool and equipment cleaning so that wash water does not discharge onto the street, into gutters, or into storm drains.
- Create a contained and covered area on the site for storage of bags of cement, paints, flammables, oils, fertilizers, pesticides, or any other materials used on the project site that have the potential to be discharged to the storm drain system by wind or in the event of a material spill. No hazardous waste material should be stored on-site.
- Gather all construction debris regularly and place it in a dumpster or other container that is emptied or removed weekly (or at another interval approved by the lead agency). When appropriate, use tarps on the ground to collect fallen debris or splatters that could contribute to stormwater pollution.
- Remove all dirt, gravel, refuse, and green waste from the sidewalk, street pavement, and storm drain system adjoining the project site. During wet weather, avoid driving vehicles off paved areas and other outdoor work.
- As appropriate, broom-sweep the street pavement adjoining the project site daily. Caked-on mud or dirt should be scraped from these areas before sweeping. At the end of each workday, the entire site must be cleaned and secured against potential erosion, dumping, or discharge to the street, gutter, and/or storm drains.

- All erosion and sedimentation control measures implemented during construction activities, as well as construction site and materials management, should be in strict accordance with the control standards listed in the latest edition of the Erosion and Sediment Control Field Manual published by the RWQCB.
- All erosion and sedimentation control measures should be monitored regularly by the project sponsor. If the measures are insufficient to control sedimentation and erosion, the project sponsor should immediately develop and implement additional, more effective measures.

✓ **HW 3.11.3-5** Prior to construction, and when a potential drainage issue is known, a drainage study should be conducted by responsible agencies for new capacity-increasing projects and new land use developments, where applicable. Drainage systems should be designed to maximize the use of detention basins, vegetated areas, and velocity dissipaters to reduce peak flows where possible. Transportation and new development improvements will comply with federal, state, and local regulations regarding stormwater management. State-owned freeways must comply with the Storm Water Discharge NPDES permit for Caltrans facilities.

✓ **HW 3.11.3-6** Responsible agencies should ensure that new facilities include water quality control features such as drainage channels, detention basins, and vegetated buffers to prevent pollution of adjacent water resources by runoff.

✓ **HW 3.11.3-7** Project sponsors can and should ensure that new facilities include structural water quality control features such as drainage channels, detention basins, oil and grease traps, filter systems, and vegetated buffers to prevent pollution of adjacent water resources by polluted runoff where required by applicable urban storm water runoff discharge permits.

✓ **HW 3.11.3-8** Drainage of roadway runoff can and should comply with Caltrans' storm water discharge permit. Wherever possible, roadways can and should be designed to convey storm water through vegetated median strips that provide detention capacity and allow for infiltration before reaching culverts.

✓ **HW 3.11.3-9** Project sponsors can and should ensure projects mitigate for changes to the volume of runoff, where any downstream receiving water body has not been designed and maintained to accommodate the increase in flow velocity, rate, and volume without impacting the water's beneficial uses. Pre-project flow velocities, rates, and volumes must not be exceeded. This applies not only to increases in stormwater runoff from the project site but also to hydrologic changes induced by floodplain encroachment. Projects should not cause or contribute to conditions that degrade the physical integrity or ecological function of any downstream receiving waters.

- ✓ **HW 3.11.3-10** Impacts can and should be reduced to the extent possible by providing culverts and facilities that do not increase the flow velocity, rate, or volume, and/or acquiring sufficient storm drain easements that accommodate an appropriately vegetated earthen drainage channel.

- ✓ **HW 3.11.3-11** Project sponsors of improvement projects on existing facilities can and should include upgrades to stormwater drainage facilities to accommodate any increased runoff volumes. These upgrades may include constructing detention basins or structures that delay peak flows and reduce flow velocities, as well as expanding and restoring wetlands and riparian buffer areas. System designs can and should be completed to eliminate increases in peak flow rates from current levels.

- ✓ **HW 3.11.3-12** Local jurisdictions can and should encourage Low Impact Development and incorporation of natural spaces that reduce, treat, infiltrate, and manage stormwater runoff flows in all new developments, where practical and feasible.

- ✓ **HW 3.11.3-13** Prior to construction, and when a potential drainage issue is known, a drainage study should be conducted by responsible agencies for new capacity-increasing projects and new land use developments, where applicable. Drainage systems should be designed to maximize the use of detention basins, vegetated areas, and velocity dissipaters to reduce peak flows where possible.

- ✓ **HW 3.11.3-14** Transportation and new development improvements will comply with federal, state, and local regulations regarding stormwater management. State-owned freeways must comply with the Storm Water Discharge NPDES permit for Caltrans facilities

- ✓ **HW 3.11.3-15** Responsible agencies should ensure that new facilities include water quality control features such as drainage channels, detention basins, and vegetated buffers to prevent pollution of adjacent water resources by runoff.

- ✓ **HW 3.11.3-16** Letters of Map Revision (LOMR) will be prepared and submitted to FEMA (when applicable) by responsible agencies where construction would occur within 100-year floodplains. The LOMR will include revised local base flood elevations for projects constructed within flood-prone areas.

- ✓ **HW 3.11.3-17** MCAG will encourage implementing and local agencies to the extent feasible and appropriate, to prevent development in flood hazard areas that do not have appropriate protections.

- ✓ **HW 3.11.3-18** MCAG will encourage implementing and local agencies to conduct or require project-specific hydrology studies for projects proposed to be constructed within floodplains to demonstrate compliance with applicable federal, state, and local agency flood-control regulations. These studies

should identify project design features or mitigation measures that reduce impacts on floodplains or flood flows, ensuring the project is consistent with federal, state, and local regulations and laws governing development in the floodplain.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on existing drainage patterns, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact HW 3.11.4 – In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

The projected growth in MCAG County would increase impervious surfaces. Potential runoff contaminants include sediment, pesticides, herbicides, fertilizers, oil and grease, nutrients, metals, bacteria, and trash, which could degrade the quality of receiving waters. During the dry season, these contaminants can accumulate on impervious surfaces and then be transported into stormwater drainage systems after the first rainfall event.

New development could add additional sources of runoff. However, in portions of MCAG County that are already developed, such increases would either be accommodated by existing infrastructure or, under local ordinances and state regulations, require project proponents to make infrastructure improvements. In rural and less-developed areas of the region, new housing and employment developments may require additional stormwater drainage infrastructure and control measures to limit polluted runoff. However, adherence to local and state regulations would ensure that development would not otherwise substantially degrade water quality. Therefore, the land use impacts associated with implementing the 2026 RTP/SCS at the program level are considered less than significant. No mitigation is required.

Transportation projects where Caltrans is the lead agency are covered by the Caltrans Stormwater Program. This permit regulates all stormwater discharges from Caltrans-owned conveyances, maintenance facilities, and construction activities. Caltrans also has a Storm Water Management Plan that outlines the procedures and practices used to reduce or eliminate pollutant discharges to storm drainage

systems and receiving waters. Transportation projects where local agencies are the lead agency are subject to local and state regulations for construction and non-construction runoff prevention. Construction-related measures are described in the mitigation section below. Adherence to local and state regulations would ensure that development would not otherwise substantially degrade water quality.

MCAG County is outside the areas of California at risk for tsunamis, as mapped by the California Department of Conservation, so tsunami impacts are not analyzed. The 2026 RTP/SCS would have no impact on tsunami inundation. Large enclosed or partially enclosed water bodies are susceptible to seiche. Seiches can be caused by several factors, including tsunamis, earthquakes, and winds. No state or federal regulations exist related to seiches. Given the absence of tsunamis and low level of earthquake risk in MCAG County, there is a low probability of seiche occurrence in the plan area. While the probability of seiches remains low, the impact of the 2026 RTP/SCS is less than significant. Any development constructed adjacent to unstable slopes would be susceptible to mudflows. Current state and local design standards require slope stabilization to reduce the risk of mudflows. When water rapidly accumulates in the ground, during heavy rainfall or rapid snowmelt, mudflows can develop. No state or federal mapping of mudflows exists. At the program level, the 2026 RTP/SCS would not significantly increase the exposure of people and structures to seiches, tsunamis, or mudflows. Therefore, the land use and transportation impacts associated with the implementation of the RTP/SCS at the regional level are considered less than significant. No mitigation is required.

Mitigation Measures

The specific impacts on hydrology and water quality will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **HW 3.11.4-1** Improvement projects along existing facilities and future land use developments will include upgrades to stormwater drainage facilities to accommodate increased runoff volumes. These upgrades may include the construction of detention basins or other structures that delay peak flows and reduce flow velocity.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the potential for substantial water quality degradation, such impacts may remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact HW 3.11.5 – Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Water quality within Merced County is regulated through a variety of federal, State, regional, and local programs, including the Basin Plan administered by the California Regional Water Quality Control Board, Central Valley Region. Groundwater resources within the County are also subject to the requirements of the Sustainable Groundwater Management Act (SGMA), which requires local Groundwater Sustainability Agencies (GSAs) to implement Groundwater Sustainability Plans (GSPs) to achieve long-term groundwater sustainability within the Merced, Chowchilla, and Delta-Mendota Subbasins.

Implementation of the 2026 RTP/SCS would primarily involve transportation improvements and land use strategies that are subject to federal, State, and local regulations governing water quality and groundwater management. Future transportation projects implemented under the RTP/SCS would be required to comply with applicable National Pollutant Discharge Elimination System (NPDES) requirements, municipal stormwater permits, Basin Plan objectives, and other water quality regulations. In addition, future development facilitated by the RTP/SCS would remain subject to SGMA requirements and applicable Groundwater Sustainability Plans adopted by local Groundwater Sustainability Agencies.
The RTP/SCS does not propose actions that would directly conflict with or obstruct implementation of adopted water quality control plans or groundwater sustainability plans. Furthermore, future projects would undergo project-specific environmental review and permitting, as appropriate, to ensure consistency with applicable water quality and groundwater management requirements.

Therefore, impacts related to conflicts with or obstruction of water quality control plans or sustainable groundwater management plans would be less than significant.

This conclusion is consistent with the approach being used in recent California RTP/SCS PEIRs, where SGMA implementation and local GSP compliance are recognized as ongoing regulatory mechanisms that help avoid conflicts with groundwater sustainability objectives.

Mitigation Measures

- ✓ Not required.

Significance After Mitigation

- ✓ Not applicable.

3.12 LAND USE, PLANNING, AND RECREATION

This section of the EIR contains an overview of land use regulations in Merced County. It discusses existing land uses and potential impacts that may result from implementation of the Project (2026 RTP and SCS). This section also discusses the potential impacts on existing neighborhood and regional parks or other recreational facilities. City and county governments provide the most direct regulation of land use and development in the County, but federal and state governments also participate in land use regulation and planning. The following paragraphs provide definitions of relevant land use regulations.

Regulatory Setting

Federal Regulations

- ✓ **National Environmental Policy Act (NEPA) -** The National Environmental Policy Act (NEPA) provides general information on the effects of federally funded projects. The act was implemented by regulations included in the Code of Federal Regulations (40CFR6). The code requires careful consideration concerning the environmental impacts of federal actions or plans, including projects that receive federal funds. The regulations address impacts on land uses and conflicts with state, regional, or local plans and policies, among others. They also require that projects subject to NEPA review seek to avoid or minimize adverse effects of proposed actions and to restore and enhance environmental quality as much as possible.

- ✓ **United States Department of Transportation Act of 1966, Section 4(f) -** Section 4(f) of the United States Department of Transportation Act requires a comprehensive evaluation of all environmental impacts resulting from federal-aid transportation projects administered by the Federal Highway Administration, Federal Transit Administration, and Federal Aviation Administration that involve the use—or interference with use—of several types of land: public park lands, recreation areas, and publicly or privately owned historic properties of federal, state, or local significance. The Section 4(f) evaluation 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, in which case the project must include all possible planning to minimize harm to any park, recreation, wildlife and waterfowl refuge, or historic site that would result from the use of such lands. If there is a feasible and prudent alternative, a proposed project using Section 4(f) lands cannot be approved by the Secretary. 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.

- ✓ **Tribal Sovereignty -** There are several tribal sovereign lands in Merced County including Big Sandy Rancheria - Mono Indians, Cold Springs Rancheria - Mono Indians, and Table Mountain Rancheria -

Kechiye Yokutch Indians. The federal government considers tribal nations as "domestic dependent nations" and therefore they possess limited sovereignty compared to foreign nations. The relationship between tribal nations and state governments varies by state. But in California, the State has limited criminal and civil judicial authority of activity in these lands. In general, development projects on tribal land are not subject to state and local environmental regulations. However, some development activities may be subject to CEQA environmental review.

- ✓ **The Transfer Act of 1905 -** The Transfer Act transferred the management of forest reserves from the Department of the Interior to the Department to Agriculture, Bureau of Forestry, later renamed the United States Forest Service (USFS).

- ✓ **Wilderness Act of 1964 –** The Wilderness Act of 1964 provides for the protection and preservation of wilderness areas and facilitates the establishment of the National Wilderness Preservation System.

- ✓ **Federal Land Policy and Management Act (FLPMA)** -The FLPMA governs the way in which the public lands administered by the Bureau of Land Management are managed. The law was enacted in 1976 by the 94th Congress and is found in the United States Code under Title 43. The Federal Land Policy and Management Act phased out homesteading in the United States by repealing the pre-existing Homestead Acts.

- ✓ **Federal Highway Administration (FHWA) National Scenic Byways Program -** The FHWA National Scenic Byways Program, which was established in Title 23, Section 162 of the United States Code under the Intermodal Transportation Efficiency Act of 1991. The program is part of an effort that has been established to help recognize, preserve and enhance selected roads throughout the United States. As a component of the National Scenic Byways Program, the Bureau of Land Management (BLM) manages 54 BLM designated National Back Country Byways and approximately 60 National Scenic Byways cross into BLM lands. Additionally, the U.S. Forest Service (USFS) has also established a National Scenic Byways Program, which was established in 1995 under the Intermodal Transportation Efficiency Act of 1991 to indicate roadways of scenic importance that pass through national forests.

- ✓ **Fixing America's Surface Transportation Act (FAST Act) -** Signed into law in December 2015, the Fixing America's Surface Transportation (FAST) Act represents the first federal law in over a decade to provide long-term funding for surface transportation infrastructure planning and investment. The FAST Act provides over $305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs. The FAST Act builds on the previously enacted Moving Ahead for Progress in the 21st Century Act (Map-21), which assisted in addressing challenges facing

the U.S. transportation system and included provisions to make the Federal surface transportation system more streamlined, performance-based, and multimodal.

On September 30, 2021, the law authorizing the FAST Act, as extended for one year after 2020, had expired. Therefore, President Biden signed a measure voted by Congress to extend transportation funding programs for a month while Congress debated an a more comprehensive and extensive bill that invests in America's infrastructure.

- ✓ **Infrastructure Investment and Jobs Act 2021** – Following the temporary extension of the FAST Act in late 2021, Congress passed the Infrastructure Investment and Jobs Act, which President Biden signed into law on November 15, 2021. This $1.2 trillion federal statute focuses on access to clean water, reliable broadband internet, repairing roads and bridges with an emphasis on climate change resiliency, and concentrated investment in public transportation.

- ✓ **Clean Water Act of 1972 (CWA) and Endangered Species Act of 1973 (ESA)** - The Army Corps of Engineers, U.S. Fish and Wildlife Service (FWS), and U.S. Environmental Protection Agency (EPA), through enforcing the requirements of the CWA and ESA, have a significant influence on the location and yield of development in the region.

- ✓ **Federal Coastal Zone Management Act -** The Federal Coast Zone Management Act is administered by the National Oceania and Atmospheric Administration (NOAA) and provides for the management of the nation's coastal resources. The intention of the act is to "preserve, protect, develop, and where possible to restore or enhance the resources of the nation's coastal zone."

Federal Agencies

- ✓ **U.S. Bureau of Land Management (BLM) -** The U.S. Bureau of Land Management (BLM) manages large rural land areas, including land that is environmentally sensitive. The BLM governs uses that are allowed on land that it manages, striving to balance environmental protection and conservation goals with other uses, such as recreation and grazing.

- ✓ **U.S. Forest Service (USFS) -** The U.S. Forest Service (USFS) is responsible for the management and conservation of large areas of National Forest land. National forests are primarily managed for outdoor recreation uses (such as camping, hiking, fishing, hunting, skiing, and nature interpretation, among others) and for resource preservation by the USFS.

- ✓ **U.S. Fish and Wildlife Service (USFWS) -** The U.S. Fish and Wildlife Service (USFWS) administer the Federal Endangered Species Act (FESA), which designates critical habitat for endangered species. This

enables USFWS to carry out its mission to conserve, protect, and enhance the nation's fish and wildlife and their habitats for the continuing benefit of people. Critical habitat areas cannot be disturbed without permission from the USFWS and other federal agencies, depending on land ownership. The USFWS also manages a system of land and waters for the conservation of wildlife and associated ecosystems. These National Wildlife Refuges are primarily managed for the preservation and protection of unique or important resources and ecosystems.

- ✓ **U.S. Army Corps of Engineers (USACE) -** The U.S. Army Corps of Engineers (USACE) is responsible for administration of Section 404 of the Clean Water Act (CWA), which governs specified activities in waters of the United States, including wetlands. In this role, the USACE requires that permits be obtained for projects whose plans would place structures, including dredged or filled materials, within navigable waters or wetlands, or result in alteration of such areas.

- ✓ **U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) -** The Natural Resources Conservation Service (NRCS) maps soils and farmland uses to provide comprehensive information necessary for understanding, managing, conserving and sustaining the nation's limited soil resources. One of the NRCS' responsibilities is to manage the Farmland Protection Program, which provides funds to aid in the purchase of development rights to keep productive farmland in agricultural uses. Working through existing programs, USDA joins with state, tribal, and local governments, as necessary, to acquire conservation easements or other interests from landowners.

- ✓ **United States Environmental Protection Agency (EPA) -** The EPA is the primary federal agency charged with protecting human health and with safeguarding the natural environment: air, water, and land. EPA works to develop and enforce regulations that implement environmental laws enacted by Congress. EPA is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for issuing permits and for monitoring and enforcing compliance. Since 1970, the EPA has enacted numerous environmental laws including the Resource Conservation and Recovery Act (RCRA); the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); and the Toxic Substances Control Act (TSCA).

State Regulations

- ✓ **California Environmental Quality Act (CEQA) -** CEQA defines a significant impact on the environment as a substantial, or potentially substantial, adverse change in the physical conditions within the area affected by the Project. Land use is a required impact assessment category under CEQA. CEQA

documents generally evaluate land use in terms of compatibility with the existing land uses and consistency with local general plans and other local land use controls (zoning, specific plans, etc.).

- ✓ **California Endangered Species Act (CESA) -** The California Endangered Species Act prohibits "take" of any species that the commission determines to be an endangered species or a threatened species. Take is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project-caused losses of listed species populations and their essential habitats.

- ✓ **Natural Community Conservation Planning Act of 1991, as Amended -** The Natural Community Conservation Planning Act of 1991, as amended in 2003, established the California Department of Fish and Wildlife's (CDFW) Natural Community Conservation Planning (NCCP) program. The NCCP represents an unprecedented effort by the State of California, and other private and public partners, which take a broad-based ecosystem approach to the planning for the protection and perpetuation of the state's biological diversity. An NCCP identifies and provides for the regional protection of plants, animals, and their habitats, while allowing compatible and appropriate economic activity. Additionally, NCCP participants are provided the necessary support, direction, and guidance by the CDFW and the U.S. Fish and Wildlife Service.

- ✓ **California Coastal Act of 1976 -** The California Coastal Act established the California Coastal Commission (CCC), identified a designated California Coastal Zone, and established the CCC's responsibility to prepare and provide oversight for a Coastal Plan designed to provide protection and management of the Coastal Zone. Additionally, local jurisdictional authority that contain lands within the coastal zone are required to develop and comply with a coastal management plan.

- ✓ **California Land Conservation Act of 1965 (Williamson Act) -** The Williamson Act is the only established program that directly involves state government in an administrative or fiscal capacity. The Act creates an arrangement (contract) whereby private landowners voluntarily restrict their land to agricultural and compatible open space uses under a rolling ten-year contract. In return parcels are assessed for property tax purpose at a rate consistent with their actual use, rather than potential market value.

- ✓ **State Lands Commission Significant Lands Inventory -** The State Lands Commission is responsible for managing lands owned by the state, including lands that the state has received from the federal government. The Commission goes about protecting these lands and resources through balanced management, marine protection and pollution prevention, adaptation to climate change, and ensuring public access to these lands and waters.

- ✓ **Quimby Act -** The Quimby Act was established by the California State Legislature in 1965 and codified as California Government Code Section 66477. The Quimby Act allows the legislative body of a city or county, by ordinance, to require the dedication of land or impose a requirement of the payment of fees in lieu thereof, or a combination of both, for park or recreational purposes as a condition to the approval of a tentative tract map or parcel map. Under the Quimby Act, requirements for parkland dedications are not to exceed three acres of parkland per 1,000 persons residing within a subdivision, and in-lieu fee payments shall not exceed the proportionate amount necessary to provide three acres of parkland, unless the amount of existing neighborhood and community parkland exceeds that limit.

- ✓ **State Public Park Preservation Act of 1971 -** The primary instrument for protecting and preserving parkland is the State Public Park Preservation Act of 1971 (Pub. Resources Code, §§ 5400–5409). Under the Act, cities and counties may not acquire any real property that is in use as a public park for any non-park use unless compensation or land, or both, are provided to replace the parkland acquired. This provides no net loss of parkland and facilities.

- ✓ **Enhanced Infrastructure Financing Districts –** Enhanced Infrastructure Financing Districts (EIFD) are separate government entities that are formed through a Joint Power Authority (JPA) consisting of cooperating cities, counties, and special districts. This allows for one or more EIFD to be created within a city or county and used to finance the construction or rehabilitation of a wide variety of public infrastructure and private facilities. An EIFD is permitted to fund these facilities and development with the property tax increment of those taxing agencies that consent. Additionally, a city or county is authorized to issue bonds following a 55 percent affirmative vote of the voters, for which only the district is liable.

- ✓ **Cortese-Knox-Hertzberg Local Government Reorganization Act of 2005-** The Cortese-Knox-Hertzberg Act establishes the process through which local agency boundaries are established and revised. The Act further establishes procedures for local government changes or organizations, including city incorporations, annexations to a city of special district, and city and special district consolidations. Additionally, each county must have a Local Agency Formation Commission (LAFCO), which is the agency that has the responsibility to create orderly local government boundaries, with the goal of encouraging "planned, well-ordered, efficient urban development patterns," the preservation of open space lands, and the discouragement of urban sprawl.

- ✓ **Sustainable Communities Act of 2008 (Senate Bill 375) –** SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPO's regional transportation plan. The California Air Resources

Board (CARB), in consultation with MPO's, will provide each affected region with reduction targets (based on 2005 levels) for per-capita GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets.

This law also extends the minimum time period for the regional housing needs allocation cycle from five years to eight years for local governments located within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the regional transportation plan (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

Related to SB 375, the California Global Warming Solutions Act of 2006 (AB 32) requires California to reduce its GHG emissions to 1990 levels by the year 2020. The passage of Senate Bill (SB) in 2016 expanded on the mandate set forth in AB 32, requiring California to reduce statewide GHG emissions to 40 percent below 1990 levels by 2030.

- ✓ **Caltrans Smart Mobility 2010: A Call to Action for the New Decade -** The Caltrans Smart Mobility plan responds to modern transportation challenges by providing new concepts and tools and presenting a program for putting these updates into action. The Smart Mobility helps to address the State mandate to find solutions to climate change, the need to reduce per capita vehicle miles traveled, demand for a safe transportation system that gets people and goods to their destinations, and the commitment to create a transportation system that advances social equity and environmental justice.

State Agencies

- ✓ **California Department of Transportation (Caltrans) -** Caltrans' jurisdiction includes the rights-of-way associated with state and interstate routes within California. Any work performed within a federal or state transportation corridor is subject to Caltrans regulations governing allowable actions and modifications to the right-of-way. Caltrans issues encroachment permits on land within their jurisdiction to ensure encroachment is compatible with the primary uses of the State Highway System, to ensure safety, and to protect the State's investment in the highway facility. The encroachment permit requirement applies to persons, corporations, cities, counties, utilities, and other government agencies.

- ✓ **California Department of Forestry and Fire Protection (CDF) -** The California Department of Forestry and Fire Protection (CDF) reviews and approves plans for timber harvesting on private lands. In addition, the CDF plays a role in planning development in forested areas as a part of its responsibility for fighting wild land fires.

- ✓ **California Department of Parks and Recreation (CDPR) -** The principal mission of the California Department of Parks and Recreation (CDPR) is to provide sites for a variety of recreational and outdoor activities to California residents and tourists. Natural resource management and protection is also a part of the mission of CDPR. Different park designations dictate the extent to which natural resources are a management priority; natural preserves, state parks, state reserves and state wilderness designations are terms, which indicate that an area has outstanding natural features. The CDPR is a trustee agency that owns and operates all state parks and participates in land use planning affecting state parkland.

- ✓ **California Department of Conservation -** In 1975, the Natural Resources Conservation Service (NRCS) began production of agricultural resource maps based on soil quality and land use. In 1982, the State of California created the Farmland Mapping and Monitoring Program within the California Department of Conservation to carry on the mapping activity from the NRCS on a continuing basis. The California Department of Conservation also administers the Williamson Act for the conservation of farmland and other resource-oriented laws. The Williamson Act is designed to preserve agricultural and open space lands by discouraging their premature and unnecessary conversion to urban uses. Williamson Act contracts, also known as agricultural preserves, offer tax incentives for agricultural land preservation by ensuring that land will be assessed for its agricultural productivity rather than its highest and best uses.

- ✓ **State Lands Commission -** According to the State Lands Commission (SLC), when California was admitted to the Union, it acquired approximately 4 million acres of sovereign land underlying the State's navigable waterways, including the waters and underlying beds of rivers, lakes, streams, and sloughs. The SLC holds the lands subject to the Public Trust for commerce, navigation, fisheries, and open space preservation. The SLC has developed a list of State-owned and State Public Trust lands in Merced County. This list is incorporated by reference.

- ✓ **California Department of Fish and Wildlife (CDFW) -** The California Department of Fish and Wildlife (CDFW) is mandated to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. In particular, CDFW is required under the California Endangered Species Act, the California Native Plant Protection Act, the California Environmental Quality Act and the Natural Community Conservation Planning Act to conserve species through listing, habitat acquisition and protection, review of local

land use planning, multi-species conservation planning, stewardship, recovery, research, and education. The CDFW protects rare, threatened and endangered species by managing habitats in legally designated ecological preserves or wildlife areas.

Local Controls

- ✓ **Local Agency Formation Commissions -** Under state law, each county must have a local agency formation commission (LAFCO). A LAFCO is the agency that carries responsibility for creating orderly local government boundaries, with the goal of encouraging "planned, well-ordered, efficient urban development patterns," the preservation of open space lands, and the discouragement of urban sprawl. A LAFCO typically consists of two county supervisors, two representatives of the county's cities, and one member of the public. Many LAFCOs also include one special district representative. While LAFCOs have no land use power, their actions determine which local government will be responsible for planning new areas.

  LAFCOs address a wide range of boundary actions, including creation of spheres of influence for cities, adjustments to boundaries of special districts, annexations, incorporations, detachments of areas from cities, and dissolutions of cities. The definition of a city's sphere of influence is frequently an indication of the city's ultimate boundaries. Since 1992, state law requires that incorporation of a new city must not financially harm the county and must result in a positive cash flow for the new city, a requirement that has slowed the rate of new city incorporation.

- ✓ **Airport Land Use Compatibility Plans -** State law encourages public access airports to develop Airport Land Use Compatibility Plans to be adopted by the County's Airport Land Use Commission (ALUC). The ALUC of Merced County adopted the Merced County Airport Land Use Compatibility Plan in June 2012. The Plan provides guidance for ALUC review of proposed new airports and heliports, expansion and modification to these existing airports, and development of surrounding land uses.

- ✓ **San Joaquin Valley Blueprint Vision -** The San Joaquin Valley Blueprint plans for future population growth within the region. It displays a coordinated vision of Smart Growth principles related to land use, transportation, and resource planning. The Blueprint contains a discussion of the values and visions as developed in consultation with public feedback, goals, objectives, and performance measures based on the values and visions, and preferred and alternative growth scenarios.

- ✓ **Land Conservation Trust -** Land conservation trust is another type of organization devoted to protecting open space, agricultural lands, wildlife habitats, and natural resource lands. A land trust is a nonprofit organization that, as all or part of its mission, actively works to conserve land by undertaking or assisting in land or conservation easement acquisition, or by its stewardship of such

land or easements. There are approximately 80 established trusts in California. Local and regional land trusts, organized as charitable organizations under federal tax laws, are directly involved in conserving land for its natural, recreational, scenic, historical and productive values.

- ✓ **Local Control Mechanisms -** *General Plans:* The most comprehensive land use planning for the County is provided by city and county general plans, which local governments are required by state law to prepare as a guide for future development. The general plan contains goals and policies concerning topics that are mandated by state law and others, which the jurisdiction may have chosen to include. Required topics are land use, circulation, housing, conservation, open space, noise, and safety. Local governments frequently choose to address other topics, including public facilities, parks and recreation, community design, and growth management, among others. City and county general plans must be consistent with each other, and County general plans must cover areas not included by city general plans (e.g., unincorporated areas). The 2026 RTP SCS was prepared considering the existing adopted and proposed draft general plans for each of the local jurisdictions. Table 3-63 provides a listing of those general plans that were considered during development of the RTP and SCS and the status of those general plans.

TABLE 3-63
Adopted General Plans

Member Agency	Adopted General Plan
Atwater	2020 General Plan
Dos Palos	1991 General Plan Land Use Map 2012
Gustine	2002 General Plan
Los Banos	2042 General Plan Update
Merced	2030 General Plan
Merced County	2030 General Plan

Source: VRPA Technologies

Specific and Master Plans: Specific or Master Plans are sometimes developed by a city or county to address smaller, more specific areas within its jurisdiction. These more localized plans provide for focused guidance for developing a specific area and contain development standards tailored to the area, as well as systematic implementation of the general plan.

Zoning: The zoning code for a city or county is a set of detailed requirements that implement the general plan policies at the level of the individual parcel. The zoning code presents standards for different uses and identifies uses that are allowed in the various zoning districts of the jurisdiction. Since 1971, state law has required the city or county zoning code to be consistent with the jurisdiction's general plan.

Recreation and Parks Master Plans: These plans outline projected needs and strategies for fulfilling those needs. The main purpose of the plans is to provide guidance for addressing preservation, use, development, and administration of recreation facilities. These policy and action documents ensure the preservation of the naturalistic environment, while providing developments to facilitate human enjoyment of the parks and recreation areas. Plans can target goals and future actions for a specific park or be generalized to a collection of parks in a larger system.

Bicycle, Pedestrian, and Trails Master Plans: Bicycle, Pedestrian, and Trails Master Plans are planning documents used to guide future development of a jurisdictions bicycle and pedestrian facilities. At a minimum these plans usually contain an inventory of existing facilities, a discussion of the plan's goals, recommendations for new projects, and an implementation plan.

Environmental Setting

Existing Land Use Within the Region

Land uses throughout the region, as adopted by local cities and counties, are depicted in the various General Plan Land Use Maps prepared, adopted, and on file with the cities and the County and incorporated by reference.

✓ Residential Land Use

Merced County includes the Cities of Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced in addition to other smaller communities and unincorporated regions. As one moves away from urban centers, parcel sizes tend to become larger and more dependent upon livestock and agriculture. Urban residential zones are typically located within the incorporated cities and allow small lots and relatively higher densities.

- ✓ **Commercial Land Use**

  Commercial zoning categories also represent an important land use classification within the County. Commercial zoning is typically found in urban centers and suburban developments near large residential concentrations to provide goods and services.

- ✓ **Industrial/Special Classifications**

  Industrial areas are important to the County's economic development. Most of the industry uses are located within the urban and rural communities throughout the Merced region.

- ✓ **Airports**

  Airport areas are scattered around the County and are primarily located near or within the urban and rural communities. Most are public use airports that provide general aviation services.

- ✓ **Agricultural**

  Agricultural areas are found throughout the region and represent the largest existing land use type in the County.

- ✓ **Open Space**

  Open space areas provide for active and passive recreational use, habitat protection, watershed management, areas containing public health and safety hazards, and environmentally sensitive areas. They are primarily under the jurisdiction of the State and federal governments.

- ✓ **Unincorporated Areas**

  Unincorporated areas of the County contain a population of approximately 92,909 persons, or 34% of Merced County's total population. In addition to large State and federally owned areas, a number of unincorporated communities are located in Merced County. These communities, as well as other unincorporated areas, are governed by the 2030 Merced County General Plan, adopted in 2013.

- ✓ **Recreation and Parks**

  The Merced County Parks Unit operates and maintains 18 park and recreational areas (lakes, campgrounds, etc.) throughout the County. The cities within Merced County maintain city parks and recreation facilities.

- ✓ **Bicycle and Pedestrian Trails**

  Merced County has implemented a Regional Bicycle & Recreational Trails Master Plan, which is intended, among other things, to offer citizens of Merced County opportunities to increase bicycle ridership through awareness and participation, and to encourage community members to commute to work and school by bicycle or on pedestrian trails instead of motor vehicles.

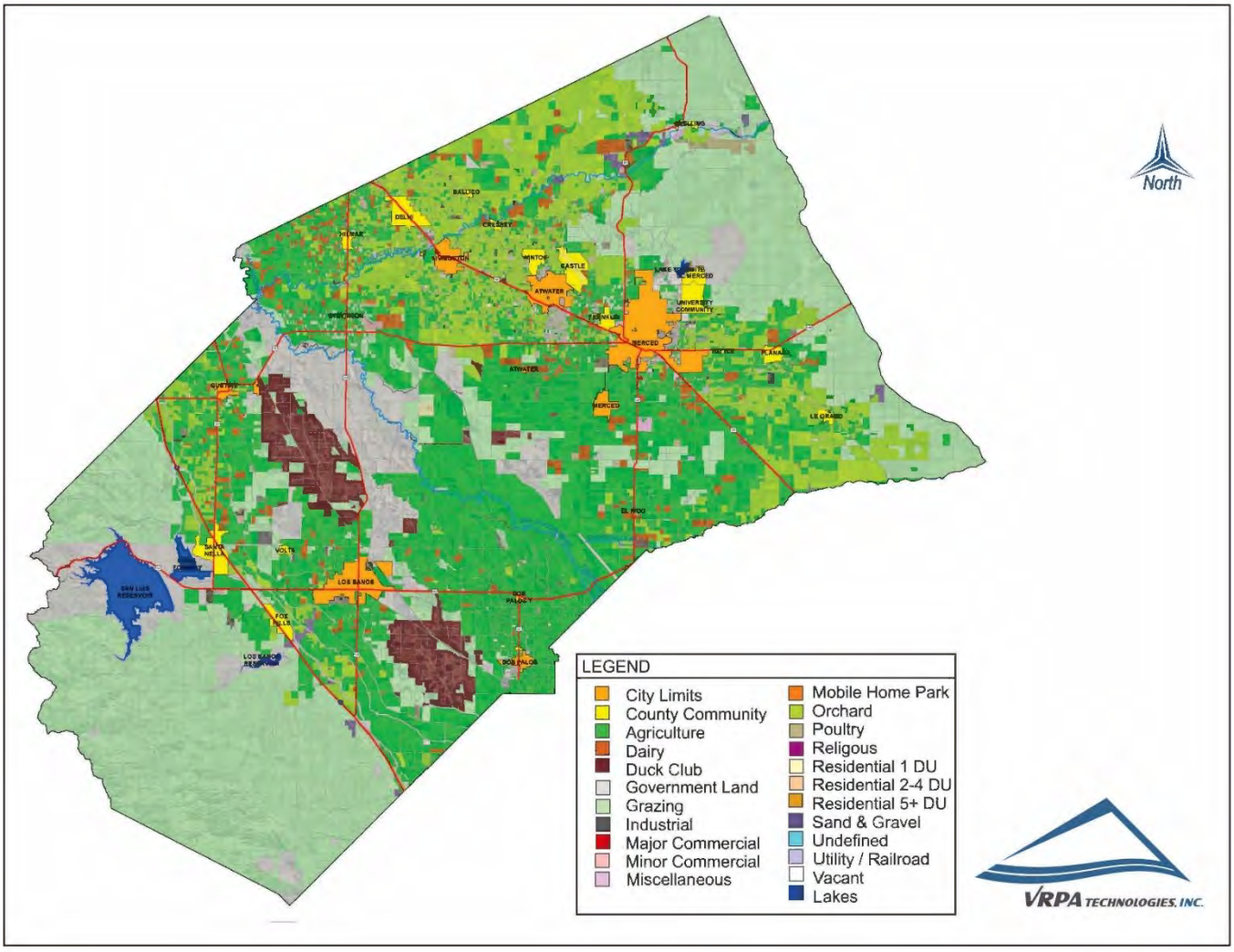
Land uses within each city and the County are governed by general plans, which designate appropriate land uses throughout the jurisdiction and define specific goals, policies, and objectives. In general, most plans recognize existing land uses and determine acceptable uses for future development of land currently used for agriculture or open space.

General plans consist of a number of elements, including land use, circulation, housing, conservation, open space, noise, and safety. The general plan must be comprehensive and internally consistent. Of particular importance is the consistency between the circulation and land use elements. The general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other public utilities and facilities must be consistent with the general distribution and intensity of land for housing, business, industry, open space, education, public areas, waste disposal facilities, agriculture, and other public and private uses. Figure 3-20 provides a map of existing land use conditions in Merced County.

Airport Land Use Commission

In each county containing a public use airport, an Airport Land Use Commission (ALUC) is required to assist local agencies in ensuring compatible land uses in the vicinity of existing or proposed airports; to coordinate planning at state, regional and local levels; to prepare and adopt an airport land use plan as required by Public Resources Code Section 21675; to review plans, regulations or locations of agencies and airport operators; and to review and make recommendations regarding the land uses, building heights, and other issues relating to air navigation safety and promotion of air commerce.

FIGURE 3-20
Existing Land Use Conditions



Source: VRPA Technologies

The Merced County Airport Land Use Commission is responsible for preparing the individual Compatibility Plans for the public use airports in Merced County. The Commission's Airport Land Use Policy Plan provides the criteria for evaluating land use compatibility between proposed development in the vicinity

of the County's public-use, general aviation airport facilities. There are a total of five (5) public use airports in the regions encompassed in Merced County.

Future Land Use

It is anticipated that the future pattern of land uses will remain relatively constant at a countywide level. While urbanized areas will continue to expand, the number of acres used for development to accommodate the projected population increase remains comparatively small. Tables 3-64 and 3-65 provide the housing unit growth and employment estimations. The Merced County Forecast estimates that Merced County will have 126,450 housing units by 2049. It also suggests Merced County will break 100,000 housing units before 2030.

The County's basic land use policy encourages concentrating urban development in existing cities and infilling vacant land in urban areas to protect agricultural land, consistent with the 2026 RTP and SCS. For purposes of the 2026 RTP and SCS, the focus of future growth and development, consistent with the general plans, was placed on current metropolitan areas, with infill and increased densities along major corridors and within activity centers. Growth and development were also allocated to the rural cities and unincorporated communities in Merced County.

The SCS encourages changes to urban form that improve transit accessibility and create more compact development, thereby yielding a range of transportation benefits for the region. These include reductions in travel time, vehicle miles traveled (VMT), vehicle hours traveled (VHT), and vehicle hours of delay. The SCS only shows how future growth and development would be allocated to planned growth areas consistent with the general plans of the cities and the County of Merced.

TABLE 3-64

Housing Growth - Year 2010 to Year 2049

Year	Atwater	Dos Palos	Gustine	Livingston	Los Banos	Merced	Unincorp.	County Total
2010	9,771	1,700	2,087	3,320	11,375	27,446	27,999	83,698
2020	10,296	1,803	2,146	3,706	13,182	29,083	27,567	87,783
2023	10,468	1,803	2,157	3,873	14,145	31,370	27,649	91,465
2030	11,489	1,959	2,500	4,357	16,420	36,470	28,912	102,107
2040	13,022	2,195	2,864	5,070	19,703	43,090	30,987	116,931
2049	14,084	2,374	3,098	5,483	21,307	46,598	33,506	126,450
Change 2010-2049	4,313	674	1,011	2,163	9,932	19,152	5,507	42,752
Percent	44%	40%	48%	65%	87%	70%	20%	51%

Source: Merced County Association of Governments 2024 Regional Growth Forecast.

TABLE 3-65

Employment Growth from 2020 to 2049

Year	Atwater	Dos Palos	Gustine	Livingston	Los Banos	Merced	Unincorp.	County Total
2020	8,559	929	1,271	4,868	7,954	36,247	27,772	87,600
2023	9,258	1,002	1,361	5,180	8,778	39,499	29,122	94,200
2026	9,682	1,039	1,419	5,489	9,266	41,369	30,146	98,410
2030	10,068	1,075	1,481	5,731	10,014	43,046	30,875	102,290
2035	10,289	1,108	1,533	5,989	10,427	44,199	31,505	105,050
2040	10,543	1,136	1,569	6,184	10,767	45,240	32,111	107,550
2045	10,778	1,159	1,600	6,339	11,067	46,132	32,655	109,730
2049	10,947	1,176	1,622	6,439	11,280	46,768	33,008	111,240
Change 2020-2049								
Num.	2,388	247	351	1,571	3,326	10,521	5,236	23,640
%	28%	27%	28%	32%	42%	29%	19%	27%

Source: Merced County Association of Governments, 2026

Methodology

Those uses most likely to be affected by the construction and implementation of transportation and related projects are the focus of this land use analysis. Land use impacts are evaluated by identifying the particular type of land use that could be affected by the projects. Because of the comprehensive land use planning information available in them, the general plans for cities and counties were used to identify projected land uses.

Information contained in the general plans of cities and counties served as the basis for evaluating potential impacts on agricultural and open space areas within the region. In addition to these resources, information from the California Department of Conservation was used to identify potential impacts to agricultural areas.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Criteria for Significance

To determine potentially significant land use impacts resulting from the RTP, the following significance criteria were used. The RTP projects would produce significant adverse land use impacts if the following circumstances occurred:

- ✓ Physically divide an established community.
- ✓ Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- ✓ 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.
- ✓ Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

Impact LPR 3.12.1 – Physically divide an established community.

The 2026 RTP and SCS could have a significant impact if they were to physically divide an established community. For the purposes of this Draft EIR, established communities are defined as incorporated cities and unincorporated communities in Merced County. Impacts from the construction of alternative transportation routes or future land use developments may occur, as well as impacts from the designation of new areas of open space that would create a physical separation between established community areas and/or restrict access between such areas. The 2026 RTP and SCS focus growth and development on the

existing cities and communities within the County, based on the adopted or draft general plan (see Table 3-63). As such, the potential to physically divide a community is not anticipated, and the RTP would not conflict with existing or draft general plan policies.

Mitigation Measures

The specific impacts on land use and planning will be evaluated as part of the implementing agencies' project-level environmental review process regarding their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, their role will be to encourage inclusion of the mitigation measures referenced below.

- ✓ **LPR 3.12.1-1** Individual transportation and future land use development projects will be consistent with local transportation system and land use plans and policies that designate areas for urban land use and transportation improvements, as identified by the agency with jurisdiction over said land(s).

- ✓ **LPR 3.12.1-2** Prior to final approval of each individual transportation improvement project and future land use development project, the implementing agency will conduct the appropriate transportation improvement project-specific and future land use development-specific environmental review, to address impacts from land use and transportation system projects that may physically divide a community.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts that may physically divide a community, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact LPR 3.12.2 – Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the projects (including, but not limited to the general plan, specific plan, local coastal

program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

The Project is in-line with current implementation agencies' adopted land use plans; however, should an agency make changes that reflect a differing development pattern, the Project could then have the potential to conflict with applicable adopted local land use plans and policies. Most of the improvement projects submitted for inclusion in the RTP, are developed through a local review process that involves local jurisdictions working with MCAG. In addition, the SCS scenario was developed considering the existing and proposed general plans for each of the local jurisdictions within the County.

Table 3-60 provides a listing of the general plans within Merced County and their status. As shown, all of the general plans considered during development of the SCS were adopted. Strategies aimed at addressing the transportation needs and future growth patterns were considered during development of the proposed RTP and SCS. The document promotes alternatives to the automobile such as transit and other alternative modes of transportation such as bicycle facilities, trails, airport improvements, and others. In addition, the SCS includes a land use allocation process that provides for increased densities in support of alternative transportation systems. Implementation of strategies proposed in the RTP and SCS could result in positive changes to land uses. This would be considered a beneficial impact.

Implementation of transit improvements included in the Plan could influence land use patterns throughout the region as reflected in the SCS. Land use and transportation policies are emphasized in the RTP and SCS in order to address automobile traffic, and air quality and greenhouse gas emissions concerns. Growth patterns that promote alternatives to the automobile by creating mixed-use developments, which would include residences, shops, parks, and civic institutions, linked to pedestrian-and-bicycle friendly public transportation centers, are also discussed in the RTP and SCS. The program will establish transportation facilities in future land use developments to increase transit use and encourage higher density and mixed land use planning. Design features, such as improved street connectivity, public amenities, and a concentration of residences and jobs in proximity to transit routes could be incorporated into mixed-use developments; therefore, reducing automobile traffic and air quality concerns.

Implementation of enhanced alternative modes as provided by the RTP could result in more balanced land use conditions throughout the region as reflected in the SCS, as the mixed-use developments would result in a concentration of jobs and residences in close proximity to one another thus reducing commuter related VMT. The RTP encourages higher density and mixed-use developments, which in turn, creates a better job to housing ratio. As shown in Table 3-63 above, the Downtown land use is the highest-intensity development type used in the SCS for the Merced County region. This type of land use is employment centric and provides jobs and services to the multi-family housing opportunities that are also incorporated within the land use.

While the RTP is likely to result in a positive outcome related to supportive land use conditions for alternative forms of transportation such as transit, other improvement projects and future land use developments in the RTP and SCS could have significant impacts on land use patterns, land use growth and development. This impact could be especially significant on recreational, open space, agricultural, and other land uses within the County.

Mitigation Measures

The specific impacts on land use and planning will be evaluated as part of the implementing agencies' project-level environmental review process regarding their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, their role will be to encourage inclusion of the mitigation measures referenced below.

- ✓ **LPR 3.12.2-1** Individual transportation and future land use development projects will be consistent with local land use plans and policies that designate areas for urban and rural land use and preserve recreational, open space, and other lands.

- ✓ **LPR 3.12.2-2** Prior to final approval of each individual improvement project and future land use development project, the implementing agency will conduct the appropriate transportation improvement project-specific and future land use development-specific environmental review, including consideration of potential land use impacts.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce land use impacts, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact BR 3.12.3 – Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The 2026 RTP/SCS is not expected to conflict significantly with Habitat Conservation Plans (HCPs), Natural Community Conservation Plans (NCCPs), or any other approved local, regional, or state habitat conservation plan because all of the transportation projects covered would be required to comply with existing HCPs, NCCPs, and other approved conservation plans. The RTP/SCS includes regional policies that could impact growth throughout the region. The analysis in the PEIR considers gross regional impacts of the land development and transportation investments described in the RTP/SCS. The cumulative impacts on the biotic resources in Merced County resulting from the Projects presented in the RTP/SCS include fragmentation of existing habitats and incremental impact on biological resources, requiring consideration of mitigation measures.

Mitigation Measures

The specific conflicts with existing HCPs, NCCPs, and other approved habitat conservation plans will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s).

Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, lead agencies wanting to tier to this EIR for CEQA compliance on subsequent discretionary permits and approvals would be expected to include the mitigation measures referenced below (or a functional equivalent) as conditions of approval of their respective permits and approvals, as appropriate.

- ✓ **BR 3.12.3-1** Consult with federal, state, and/or local agencies that handle the administration of HCPs and NCCPs.

- ✓ **BR 3.12.3-2** When feasible, the project will be designed in such a way that lands preserved under HCPs or NCCPs are avoided.

- ✓ **BR 3.12.3-3** Sufficient conservation measures to fulfill the HCPs or NCCPs requirements should be taken when avoidance is determined to be infeasible.

Significance After Mitigation

The responsibility to mitigate siltation impacts rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. Implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce conflicts with any HCPs, NCCPs, and other approved conservation plans. It is anticipated that the Projects presented in the RTP/SCS will be required to comply with existing conservation plans, and that the listed mitigation measures will be sufficient to ensure impacts remain below a significant level.

Impact LPR 3.12.4 – **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.**

The project would not increase the use of neighborhood and regional parks beyond what is expected due to population growth between 2023 and 2049, consistent with the general plans of each local jurisdiction. Each of those plans includes the provision for additional parks and recreation facilities to accommodate future growth and development. The increase in population is also not expected to cause substantial physical deterioration of the region's recreational facilities. The addition of transportation improvements can impact existing recreational facilities due to street and road widening, bike lanes, and other transportation improvements. As a result, such improvements could have significant impacts on recreational facilities within the region.

Mitigation Measures

- ✓ **LPR 3.12.4-1** Reference Mitigation Measures for Impacts LPR 3.12.2-1 and -2.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce land use impacts, it is likely that such impacts will remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact LPR 3.12.5 – 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 project would include recreational facilities to support growth and development consistent with the region's adopted general plans. Such plans may require the expansion of recreational facilities, but are not expected to have any adverse physical effect on the environment. Each of those plans includes the provision for additional parks and recreation facilities to accommodate future growth and development. The increase in population is also not expected to cause adverse physical effects on the region's environment. The addition of transportation improvements does have the potential to impact existing recreational facilities because of widening for streets and roads, or bike lanes, and other transportation improvements. As a result, such improvements could have significant impacts on recreational facilities within the region.

Mitigation Measures

- ✓ **LPR 3.12.5-1** Reference Mitigation Measures for Impacts LPR 3.12.2-1 and -2.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce land use impacts, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

3.13 NOISE

This section provides information about the effects of noise from the Project (2026 RTP/SCS). The methodology and the criteria used to evaluate the significance of noise-related impacts, as well as mitigation measures, are discussed.

Regulatory Setting

In general, the federal government sets noise standards for transportation noise sources that are related to interstate commerce. These typically include aircraft, trains, and trucks. State governments establish noise standards for those sources not regulated by federal standards, such as automobiles, light trucks, motorboats, and motorcycles. Other noise sources associated with construction, as well as industrial and commercial activities, are usually regulated by noise ordinances and general plan policies established by local jurisdictions.

Federal Regulations

The Federal Highway Administration (FHWA) has established noise abatement criteria that must be considered for the design of federal or federally funded highway projects. Federal regulations also set noise limits for medium and heavy trucks (over 4.5 gross tons). The federal standard for truck pass-by noise at 15 meters (50 feet) is 80 dB from the vehicle pathway centerline. These standards are implemented through federal regulatory controls on truck manufacturers. Noise generated by aircraft operating in the United States is also subject to federal regulation established by the Federal Aviation Administration (FAA). Aircraft manufacturers must comply with these regulations prior to aircraft certification. Similarly, locomotives are also subject to federal standards.

Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772) provides procedures for conducting highway project noise studies and implementing noise abatement measures to help protect the public health and welfare, supply Noise Abatement Criteria (NAC), and establish requirements for information to be given to local officials for use in planning and designing highways. Under this regulation, noise abatement must be considered for a Type I project if the project is predicted to result in a traffic noise impact. A traffic noise impact is considered to occur when the project results in a substantial increase in noise or when the predicted noise levels approach or exceed the NAC specified in the regulation.

Title 23, Part 772 of the Code of Federal Regulations does not specifically define what constitutes a substantial increase or the term "approach"; rather, it leaves the interpretation of these terms to the states. In California, a noise level is considered to approach the NAC for a given activity category if it is within 1 dBA of the NAC. A substantial noise increase is considered to occur when the project's predicted worst-hour design-year noise level exceeds the existing worst-hour noise level exceeds the existing worst-hour noise level by 12 dBA or more. Before the adoption of a final environmental document, Caltrans shall

identify feasible and reasonable noise abatement measures, as well as noise impacts for which no apparent solution is available. Noise abatement measures that are feasible and reasonable are then incorporated into the project's plans and specifications to reduce or eliminate the noise impact on existing activities, developed lands, or undeveloped lands for which development is planned, designed, and programmed. Table 3-66 summarizes the NAC.

TABLE 3-66
Noise Abatement Criteria

Activity Category	Activity $L_{eq}[h]$[1]	Evaluation Location	Description of Activities
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an importatnt public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[2]	67	Exterior	Residential.
C[2]	67	Exterior	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meetings rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meetings rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A-D or F.
F			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 The Leq[h] activity criteria values are for impact determination only and are not design standards for noise abatement measures. All values are A-weighted decibles (dBA).

2 Includes undeveloped lands permitted for this activity category.

Source: FHWA 23 CFR 772

- ✓ **Department of Housing and Urban Development (HUD) -** HUD seeks to create quality affordable housing for all Americans and uses its platform to improve the quality of life. To achieve its goals and fulfill its mission, HUD has established its own exterior noise criteria for evaluating projects in high-noise areas (e.g., near an airport, road, or railroad).

HUD's exterior noise criterion states that 65 dBA DNL noise levels or less are satisfactory for residential land uses. HUD's criterion does not include standards for interior noise levels, but it is assumed that the current construction/building code will provide sufficient attenuation such that, if the exterior noise level is 65 dBA DNL or less, the interior level will be 45 dBA DNL or less.

- ✓ **Federal Aviation Administration (FAA) -** Aircraft operated in the U.S. are subject to certain 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, considering the model year, aircraft weight, and number of engines. Pursuant to the federal Airport Noise and Capacity Act of 1990, the FAA established a schedule for complete transition to Part 36 "Stage 3" standards by the year 2000. This transition schedule applies to jet aircraft with a maximum takeoff weight exceeding 75,000 pounds and thus applies to passenger and cargo airlines, but not to operators of business jets or other general aviation aircraft.

  Title 14, Part 150 of the CFR (14 CFR 150) promotes the creation of noise exposure maps by airports that show land uses incompatible with high noise levels. The Part 150 Program establishes a voluntary program that airports may use to conduct airport noise compatibility planning, measure airport noise impacts, and identify incompatible land uses. It remains the responsibility of local authorities to determine the acceptable and permissible land uses and the relationship with specific noise contours.

  Although the National Environmental Policy Act (NEPA) does not establish specific noise standards, the noise impacts of projects are routinely considered among the potential environmental consequences of federal actions subject to NEPA.

- ✓ **Federal Highway Administration (FHWA) -** The Federal Highway Administration (FHWA) uses a one-hour equivalent (time-average) sound level criteria of 67 dBA to determine when to consider noise barriers for new highway projects. Before actually building barriers, the FHWA requires that the project further qualify based on the cost and benefit of the barrier per protected home.

- ✓ **Federal Railroad Administration (FRA) -** The FRA, established by the Department of Transportation Act of 1966, was created to advance and enforce rail safety regulations, manage railroad assistance programs, coordinate research and development of the continuous improvement of railroad safety and national rail policy, and unite government support of rail transportation. Noise standards for the FRA are the same as those specified by the FTA.

- ✓ **Federal Transit Administration (FTA) -** The FTA, established by the Urban Mass Transportation Act of 1964, was tasked with providing federal assistance for mass transit projects. Its procedures to evaluate noise resulting from transit projects are outlined in the document titled, "Transit Noise Vibration Impact Assessment" (FTA, 2006). The three (3) categories of noise-sensitive land uses are the following:

- Category 1: buildings or parks where quiet is an essential element of their purpose:
- Category 2: residences and buildings where people normally sleep. This includes residences, hospitals, and hotels where nighttime sensitivity is considered of utmost importance.
- Category 3: institutional land uses with primarily daytime and evening use. This category includes schools, libraries, churches, and active parks.

✓ **Federal Vibration Policies -** The FHWA is responsible for noise standards associated with federally funded highway projects and for establishing procedures to evaluate these noise impacts to determine whether the impacts warrant noise abatement actions. The noise abatement criteria are based on the worst hourly Leq sound levels. The Federal Railway Administration (FRA) and the Federal Transit Administration (FTA) have published guidance relative to vibration impacts. The FRA establishes noise standards for federally funded transit projects, and the FTA establishes noise standards for federally funded rail projects. According to the FRA, fragile buildings can be exposed to groundborne vibration levels of 0.5 PPV without experiencing structural damage. The FTA has identified the human annoyance response to vibration levels as 80 VdB.

✓ **U.S. Environmental Protection Agency (US EPA) -** Established in 1969 (42 U.S. Code § 4321-4347), the U.S. EPA outlines indoor and outdoor noise limits to serve the overall public health and welfare. The Noise Pollution and Abatement Act of 1972 established a federal program for regulating noise pollution that could endanger public health. The U.S. EPA was given responsibility for overseeing federal research and activities related to noise control and for coordinating its programs with other federal agencies. The program lost its funding in 1981, and the regulation of noise pollution and the setting of standards have mainly become the responsibility of State and local agencies. However, the U.S. EPA is still responsible for coordinating the programs of all federal agencies and dealing with noise standards related to commerce.

State Regulations

The State sets standards for light trucks (less than 4.5 gross tons), passenger cars, and other motor vehicles as identified in the California Motor Vehicle Code. The State of California has also established additional noise standards to regulate freeway noise affecting schools and classrooms. Furthermore, the State has adopted noise insulation standards for multi-family residential units, hotels, and motels that are in areas subject to high levels of transportation-related noise.

✓ **California's Airport Noise Standards -** The State of California has the authority to establish regulations requiring airports to address aircraft noise impacts on land uses in their vicinities. The State of California's Airport Noise Standards, found in Title 21 of the *California Code of Regulations*, define a CNEL of 65 dB 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 the California Department of Transportation.

- ✓ **California Department of Transportation (Caltrans) -** The State of California establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the State pass-by standard is consistent with the federal limit of 80 dB. The State pass-by standard for light trucks and passenger cars (less than 4.5 tons gross vehicle rating) is also 80 dB at 15 meters from the centerline. For new roadway projects, Caltrans employs the Noise Abatement Criteria, discussed above in connection with FHWA. Caltrans provides agencies that fund construction or reconstruction projects with policies, procedures, and practices. Noise abatement criteria outlined in Caltrans's Traffic Noise Analysis Protocol are the same as those specified in 23 Code of Federal Regulations Section 772.

- ✓ **California Noise Insulation Standards -** The California Noise Insulation Standards found in the California Code of Regulations, Title 24, set requirements for new multi-family residential units, hotels, and motels that may be subject to relatively high levels of transportation-related noise. For exterior noise, the noise insulation standard is DNL 45 dB 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 DNL 60 dB.

  - ➢ High Speed Rail – Operations for the future High-Speed Rail project within Merced County are expected to increase railroad noise levels at locations near High-Speed Rail tracks. Figure 3.4-7 of the California High-Speed Train Project EIR/EIS for the Merced to Fresno Region section indicates train noise may exceed 60 dB Ldn, Normally Acceptable noise levels, for new residential uses at locations exceeding one thousand (1,000) feet from the tracks.

- ✓ **Governor's Office of Planning and Research (OPR) -** The OPR is obligated to adopt and periodically revise the guidelines utilized to prepare the content of local general plans. The 2003 OPR General Plan Guidelines established noise/land use compatibility guidelines indicating Normally Acceptable noise levels for noise-sensitive land uses of up to 60 dBA CNEL, Conditionally Acceptable from 60 to 70/75 dBA CNEL, and Normally Acceptable above 70 or 75 dBA CNEL.

- ✓ **State of California General Plan Guidelines -** The State of California General Plan Guidelines include recommended guidelines for noise elements of city and county general plans, and compliance is not required. However, many local agencies base their noise elements on these guidelines, which vary by land use type and are helpful in determining land use compatibility.

- ✓ **State Vibration Policies -** There are no adopted state policies or standards for ground-borne vibration. However, Caltrans recommends that extreme care be taken when sustained pile driving occurs within 7.5 meters (25 feet) of any building, and 15 to 30 meters (50 to 100 feet) of a historic building or a building in poor condition.

Local Regulations

The noise element and local noise ordinances are the two primary documents that local jurisdictions use to set noise standards in their community. A noise element is a required component of each jurisdiction's General Plan. The noise element is required to analyze the current and future noise levels associated with local noise sources, such as freeways and highways, major streets and arterials, rail operations, aviation activities, and local industrial plants, and develop noise contours for these sources using CNEL or Ldn.

The noise element also includes implementation measures and possible solutions for existing and potential noise problems. The noise elements of the cities and the County typically apply land use compatibility criteria of 60-65 dB Ldn as normally acceptable for new residential developments affected by transportation noise sources. The intent of these standards is to provide an acceptable noise environment for outdoor activities. In addition, an interior noise level criterion of 45 dB Ldn is commonly applied to residential land uses. The intent of this standard is to provide a suitable environment for indoor communication and sleep. These criteria are consistent with the interior and exterior noise-level standards set by the Federal Department of Housing and Urban Development (HUD).

The above-described noise standards are commonly applied to new residential projects affected by transportation noise sources, rather than to increases in traffic noise levels resulting from regional growth, as in this study. Nonetheless, the local noise criteria are included to provide a frame of reference for comparing the magnitude of existing and future traffic noise levels.

- ✓ **Merced County General Plan Health and Safety Element.** The Health and Safety Element of the Merced County 2030 General Plan provides a basis for comprehensive local policies to control and abate environmental noise and to protect the citizens of Merced County from excessive noise exposure. Merced County seeks to protect residents, employees, and visitors from the harmful and annoying effects of excessive noise exposure.

  The Health and Safety Element contains specific policies and establishes noise level limits for both transportation and non-transportation noise sources. Specifically, exterior and interior noise environments of 65 dB Ldn and 45 dB Ldn are considered acceptable for residential land uses affected by transportation noise sources (traffic, railroad, and aircraft). In addition, the current Noise Element establishes exterior noise level limits of 55 and 50 dB median (L50) and 75 and 70 dB Noise Lmax during daytime and nighttime hours, respectively, for residential uses affected by other (non-transportation) sources of noise. For hospitals and schools, an exterior noise environment of 65 dB is considered acceptable.

- ✓ **Merced County Noise Ordinance -** In the Merced County Code, Chapter 10.60 contains the Noise Ordinance that sets sound level limits for residential and nonresidential properties. It establishes that background noise levels are not permitted to exceed 10 dBA during daytime hours or 5 dBA during

nighttime hours. It specifies that maximum noise levels should not exceed 75 dBA Lmax in residential areas or 80 dBA Lmax in nonresidential areas. This code also sets exterior noise level limits of 65 dBA Ldn in residential areas and 70 dBA Ldn in nonresidential areas.

Major Noise Sources in Merced County

Noise sources are commonly grouped into two major categories: transportation and non-transportation. Transportation noise sources include surface traffic on public roadways, railroad line operations, and aircraft in flight. Non-transportation (or fixed) noise sources commonly include industrial activities, railroad yard activities, small mechanical devices (lawnmowers, leaf blowers, air conditioners, radios, etc.), and other sources not included in the traffic, railroad, and aircraft category.

✓ **Traffic Noise**

The ambient noise environment in Merced County is defined by a wide variety of noise sources. The most pervasive source of noise in the region is traffic noise. With thousands of miles of roadways in the County, it is difficult to escape the sound of traffic. Traffic noise exposure is mainly a function of the number of vehicles on a given roadway per day, the speed of those vehicles, the percentage of medium and heavy trucks in the traffic volume, and the receiver's proximity to the roadway. Every vehicle passage on every roadway in the region radiates noise.

Existing high noise levels along major streets and highways are generally caused by traffic and congestion. Potential impacts along these facilities are generally classified as follows:

- Low - L_{dn} 59 dB or below
- Moderate - L_{dn} 60 dB to 65 dB
- High - L_{dn} 66 dB or greater

The potential for adverse noise impacts is generally moderate to high along most segments of State highways and is generally low to moderate along most segments of County streets and highways.

✓ **Rail Noise**

The region is also affected by freight and passenger railroad operations. While these operations generate significant noise levels in the immediate vicinity of the railroad tracks during train passages, these operations are intermittent, and the tracks are widely dispersed throughout the region. For these reasons, the contribution of railroad noise to the County's overall ambient noise environment is relatively small.

The two main railroad line operations in Merced County are the Union Pacific Railroad(UP) and the Burlington Northern Santa Fe Railway (BNSF). Numerous freight train operations per day occur on the UP and BNSF lines that extend from their respective yards to points north and south of the County. There are approximately 14 daily train movements along the UP line in Merced County and approximately 34 daily train movements along the BNSF line, plus 12 daily passenger rail operations.

High noise impacts can be expected within approximately 100 feet of railroad tracks, moderate impacts from 100 to 700 feet, and low impacts at distances greater than about 700 feet. The above-noted impacts may be lesser or greater depending on site-specific factors such as soundwalls, grade crossings, and topographic shielding. Insignificant noise impacts can be expected adjacent to several branch lines in Merced County.

✓ **Airport Noise**

Merced County is home to public, private, and military airports. In addition to the numerous daily aircraft operations that originate and terminate at these airports, overflights of the area by aircraft that do not use the regional airports frequently occur. All of these operations contribute to some degree to the overall ambient noise environment in the County. The intensity of aircraft noise exposure depends on one's proximity to the aircraft flight path, the type, speed, and altitude of the airplane, as well as atmospheric conditions. The farther away the noise source is, the more the sound propagation from source to receiver is affected by weather.

There are five (5) public-use airport facilities in Merced County. These include the Castle Airport, Gustine Municipal Airport, Los Banos Municipal Airport, Merced Regional Airport, and Turlock Municipal Airport. Airport noise contours have been established for all airport facilities in the County and are consistent with the Federal Aviation Administration (FAA) Integrated Noise Model. In addition, noise contours for existing and future conditions at each airport are contained in plans or studies, including Airport Master Plans, Airport Land Use Compatibility Plans, Comprehensive Airport Land Use Plans, Airspace Plans, and Airport Layout Plans, all of which are incorporated by reference. Each of these plans or studies includes implementation goals, objectives, and policies and/or recommendations to lessen noise impacts.

✓ **Land Use Development Noise Sources**

There are a wide variety of industrial and other non-transportation noise sources in the County, including heavy industrial or manufacturing operations, power plants, food packaging and processing facilities, lumber mills, aggregate mining and processing plants, race tracks, shooting ranges, amphitheaters, and car washes, to name a few. Noise from these sources varies significantly but, depending on the source, can contribute more to the local ambient noise environment than traffic noise. Although non-transportation noise sources can define the ambient noise environment within a

given distance of the source, the regional ambient noise environment is nonetheless defined primarily by traffic.

Environmental Setting

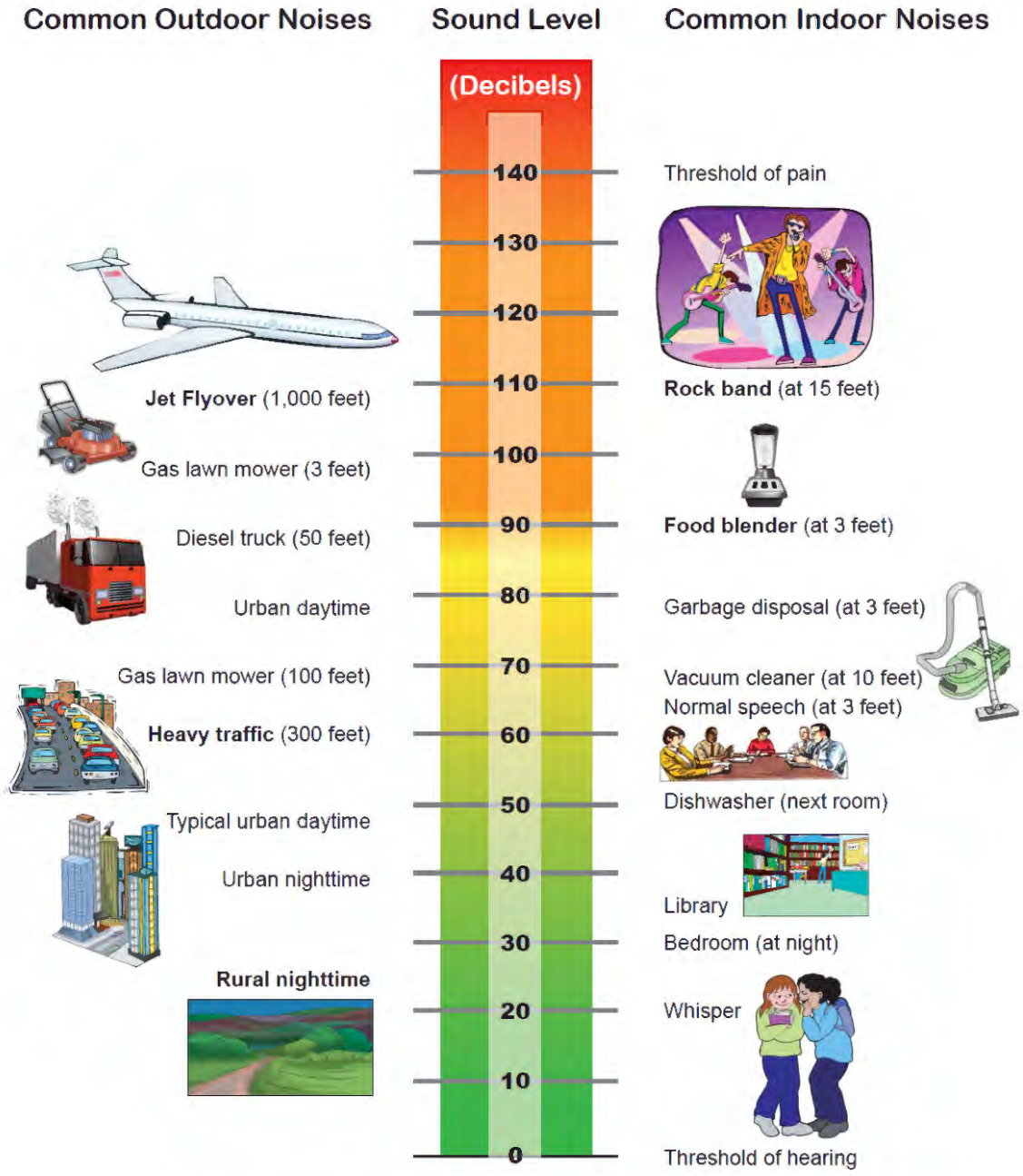
Noise is often described as unwanted sound, and thus is a subjective reaction to characteristics of a physical phenomenon. Researchers have generally agreed that A-weighted sound pressure levels (SPLs) are well correlated with subjective responses to noise. Variations in sound levels over time are represented by statistical descriptors, and by time-weighted composite noise metrics such as the Day/Night Average Level (Ldn). The unit of sound level measurement is the decibel (dB), sometimes expressed as dBA. Throughout this analysis, A-weighted sound pressure levels will be used to describe traffic and other noise sources. Typical indoor and outdoor noise levels are presented in Figure 3-21 (Common Environmental Sound Levels).

The following noise descriptors are used throughout the section:

- ✓ Day-Night Average Noise Level (Ldn) - Ldn is the average equivalent sound level during a 24-hour day, obtained after the addition of decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.
- ✓ Energy-Equivalent Noise Level (Leq) - Leq is the sound level containing the same total energy as a time-varying signal over a given sample period. Leq is typically computed over 1, 8, and 24-hour sample periods.
- ✓ Community Noise Equivalent Level (CNEL) - CNEL is the average equivalent sound level during a 24-hour day, obtained after the addition of approximately five decibels to sound levels in the evening from 7 p.m. to 10 p.m. and ten decibels to sound levels in the night before 7 a.m. and after 10 p.m.
- ✓ Decibel (dBA) - A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micro-newtons per square meter).

Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and are therefore called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called hertz (Hz) by international agreement. The speed of sound in air is approximately 770 miles per hour, or 1,130 feet/second. Knowing the speed and frequency of a sound, one may calculate its wavelength, the physical distance in air from one compression of the atmosphere to the next.

FIGURE 3-21
Common Environmental Sound Levels



An understanding of wavelength is useful for evaluating the effectiveness of physical noise control devices, such as mufflers and barriers, which depend on either absorbing or blocking sound waves to reduce sound levels. Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold of 20 micropascals as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and their logarithms are taken to keep the numbers within a practical range.

The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in levels (dB) correspond closely to human perception of relative loudness. The perceived loudness of sounds depends on many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable and can be approximated by weighting the frequency response of a sound level measurement device (called a sound level meter) by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (dB) and community response to noise. For this reason, the A-weighted sound pressure level has become the standard tool of environmental noise assessment.

Community noise is commonly described in terms of the "ambient" noise level, defined as the overall noise level in a given noise environment. A common statistical tool for measuring the ambient noise level is the average (or equivalent) sound level (Leq), which corresponds to a steady-state sound level that contains the same total energy as a time-varying signal over a given time period (usually one hour). The Leq is the foundation of composite noise descriptors, such as Ldn, and shows a strong correlation with community responses to noise.

The CNEL, like Ldn, is based on the weighted-average hourly Leq over a 24-hour day, except that an additional +4.8-decibel penalty is applied to evening (7:00 p.m. to 10:00 p.m.) hourly Leq values. The CNEL was developed for the California Airport Noise Regulations and is applied specifically to airport/aircraft noise assessment. For this reason, the Ldn descriptor, rather than CNEL, is used to assess traffic noise levels in the County.

Noise in the community has often been cited as being a health problem, not in terms of actual damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities such as sleep, speech, recreation, and tasks demanding concentration or coordination. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases, and the acceptability of the environment for people decreases. This decrease in acceptability and the threat to public well-being form the basis for land use planning policies that prevent exposure to excessive community noise levels.

To control noise from fixed sources that have developed through processes other than zoning or land use planning, many jurisdictions have adopted community noise control ordinances. Such ordinances are intended to abate noise nuisances and to control noise from existing sources. They may also be used as performance standards to judge the creation of a potential nuisance or potential encroachment of sensitive uses upon noise-producing facilities. Community noise control ordinances are generally designed to resolve noise problems on a short-term basis (usually by means of hourly noise level criteria), rather than on the basis of 24-hour or annual cumulative noise exposures.

Noise ordinance criteria are not applicable to traffic on public roadways. However, General Plan Noise Elements provide noise standards for new noise-sensitive land uses affected by transportation noise sources. General Plan Noise Elements frequently include general noise mitigation measures to reduce the potential for adverse noise impacts associated with the development of new noise-sensitive or noise-producing land uses.

For new noise-sensitive land uses affected by transportation noise sources, many jurisdictions consider land use compatibility criteria of 60 to 65 dB Ldn as being “normally acceptable” for such uses. Typical options for mitigating excessive traffic noise levels include setbacks or buffer areas between roadways and proposed noise-sensitive land uses, noise barriers, residential unit design, and improvements to building facade construction. Because many rural residential areas experience very low noise levels, residents may express concern about the loss of "peace and quiet" due to the introduction of a previously inaudible sound. In very quiet environments, the introduction of virtually any change in local activity will increase noise levels. Changes in noise levels and the loss of "peace and quiet" are inevitable results of changes in land use or activity in such areas. Audibility of a new noise source or increases in noise levels within recognized acceptable limits are not usually considered significant noise impacts, but these concerns should be addressed in the planning and environmental review processes.

Vibration Characteristics and Effects

Groundborne vibration is the oscillatory motion of the ground above some equilibrium condition that could be described in terms of displacement, velocity, or acceleration. Because sensitivity to vibration typically corresponds to the amplitude of vibrating velocity within the low-frequency range (e.g., 5 to 100 Hertz), velocity changes are the preferred measure for evaluating groundborne vibration.

The most common measure used to quantify vibration amplitude is the Peak Particle Velocity (PPV). PPV is typically used in monitoring blasting and other types of construction-generated vibration, since it is related to the stresses experienced by building components. Although PPV is appropriate for evaluating building damage, it is less suitable for assessing human response, which is better characterized by the average vibration amplitude. Therefore, ground-borne vibration from equipment (e.g., trains, subways, earthmovers, graders, and bulldozers) is usually characterized in terms of the smoothed root mean square

(rms) vibration velocity level. This is expressed in velocity decibels (VdB). VdB values are expressed in inches per second. The VdB is used to avoid confusion with sound decibels.

Ambient vibration levels in residential areas are typically 50 VdB, which is well below human perception. The operation of heating/air conditioning systems and slamming of doors produces typical indoor vibrations that are noticeable to humans. The most common exterior sources of ground vibration noticeable to humans inside residences include construction activities, train operations, and street traffic. Table 3-67 provides some common sources of ground vibration and the relationship to human perception. This information comes from the Federal Transit Administration's "Basic Ground-Borne Vibration Concepts." Despite the perceptibility threshold of about 65 VdB, human reaction to vibration is not significant unless the vibration exceeds 75 VdB, according to the United States Department of Transportation.

The California Department of Transportation's (Caltrans) Transportation and Construction-Induced Vibration Guidance Manual (2004) identifies thresholds for vibration disturbance: 0.2 inches per second for continuous vibration sources, such as processing and excavation activities, and 0.9 inches per second for transient vibration sources, such as blasting.

Noise Barriers

Shielding by barriers can be obtained by placing walls, berms, or other structures between the traffic or other noise source and the receiver. The effectiveness of a barrier depends on blocking the line of sight between the traffic and the receiver and improves with increasing the distance the sound must travel to pass over the barrier, compared to a straight line from the source to the receiver. For a noise barrier to be effective, it must not only be sufficiently tall to intercept the line of sight from the noise source to the receiver, but it must also be sufficiently long to reduce the potential for sound to flank around the ends of the barrier. Barrier effectiveness depends upon the relative heights of the source, barrier, and receiver. In general, barriers are most effective when placed close to the receiver, the traffic, or another noise source. An intermediate barrier location yields a smaller path-length difference for a given increase in barrier height than does a location closer to either the source or the receiver.

For maximum effectiveness, barriers must be continuous and relatively airtight along their length and height. To ensure that sound transmission through the barrier is insignificant, the barrier mass should be about 4 lbs./square foot, although a lower mass may be acceptable if the barrier material provides sufficient transmission loss in the frequency range of concern.

TABLE 3-67

Typical Levels of Ground-Borne Vibration

Human/Structural Response	Velocity Level, VdB	Typical Events (50 ft. Setback)
Threshold, minor cosmetic damage fragile buildings	100	Blasting from construction projects
		Bulldozers and other heavy tracked construction equiment
Difficulty with tasks such as reading a video or computer screen	90	
		Commuter rail, upper range
Residential annoyance, infrequent events (e.g commuter rail)	80	Rapid transit, upper range
		Commuter rail, typical
Residential annoyance, infrequent events (e.g rapid transit)		Bus or truck over bump
	70	Rapid transit, typical
Limit for vibration sensitive equipment. Approx. threshold for human perception of vibration		Bus or truck, typical
	60	
		Typical background vibration
	50	

Source: Federal Transit Administration

Satisfaction of the above criteria requires substantial, well-fitted barrier materials placed to intercept the line of sight to all significant traffic noise sources. Earth, in the form of berms or the face of a depressed area, is also an effective barrier material. There are practical limits to the noise reduction provided by barriers. For highway traffic noise, a 5-10 dB reduction is often reasonably attainable. A 15 dB noise reduction is sometimes possible, but a 20 dB noise reduction is extremely difficult to achieve. Barriers are usually provided as walls, berms, or berm/wall combinations. The use of an earth berm in lieu of a solid wall will provide up to 3 dB additional attenuation over that attained by a solid wall alone, due to the absorption provided by the earth. Berm/wall combinations offer slightly better acoustical performance than solid walls and are often preferred for aesthetic reasons.

Noise barriers currently exist or are planned in many areas of the County adjacent to the state highways or existing development to shield noise. In cases of new residential development adjacent to a major roadway in the County, responsibility for noise mitigation rests with the individual improvement project developer. In such cases, noise barriers are commonly constructed just inside the highway right-of-way. In other cases, local jurisdictions and Caltrans have built barriers as part of roadway improvement projects or barrier retrofit programs.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

The impacts of the Project were analyzed by considering the implementation of the proposed 2026 RTP/SCS, including changes to the transportation network and land uses that may affect the noise environment. This noise analysis evaluates the Project's noise impacts by comparing predicted traffic noise levels for the proposed Project with the 2023 Base Year model scenario provided by MCAG.

Criteria for Significance

The following significance criteria were used to determine the level of significance of the impacts of transportation improvement projects or land uses proposed by the Project. Significance criteria were developed based on Appendix G of the State CEQA Guidelines. In general, an individual improvement project and new development project contained within the RTP/SCS would result in a significant noise impact if it:

- ✓ Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- ✓ Generation of excessive groundborne vibration or groundborne noise levels.
- ✓ 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.

Generally, proposed projects are of the following two types:

- ✓ New Systems (new highway and transit facilities).
- ✓ Modifications to Existing Systems (widening roads, addition of carpool lanes, grade crossings, intelligent transportation systems, maintenance, and service alterations).

Methodology

Since noise is a highly localized impact, specific, detailed analyses are most appropriate at the individual improvement-project and new-development-project levels. Subsequent project-specific EIRs will be required to further analyze the transportation improvements or new development proposed by the Project to determine the magnitude of noise and vibration impacts and to identify appropriate mitigation measures for each improvement or new land use development project.

Impact N 3.13.1 - Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Noise-sensitive land uses could be exposed to noise in excess of normally acceptable noise levels and/or could experience substantial increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased traffic resulting from new highways, addition of highway lanes, roadways, ramps, and new transit facilities as well as increased use of existing transit facilities, etc.) and future noise generating land use developments.

At the regional scale, the noise impacts of new highways, highway widening, new HOV lanes, new transit corridors, increased frequency along existing transit corridors, and noise-generating future land use developments such as heavy manufacturing plants and other uses are generally expected to exceed the significance criteria when they occur near sensitive receptors. For comparison, noise levels along the busiest portions of the SR 99 corridor in Merced County were evaluated. Existing traffic noise levels were gathered using an Extech Type 2 sound level meter datalogger during the PM peak hour. Noise monitoring was conducted during the PM peak hour because traffic counts along SR 99 show a greater volume of traffic in the PM peak hour than in the AM peak hour.

Existing traffic noise levels were then evaluated using the FHWA Traffic Noise Model (TNM 3.2). Traffic volumes collected from the model runs prepared for the 2026 RTP and posted vehicle speed limits along SR 99 were entered into the model to estimate noise levels at receptors adjacent to the corridors. As shown in Table 3-68, the noise levels determined in the field along SR 99 were 77.0 L_{eq}(h) dBA.

TABLE 3-68
SR 99 Noise Analysis

Receptor I.D. No.	Location	Existing Noise Level Leq(h) dBA	Existing Noise Level Modeled Leq(h) dBA	K - Factor (Measured - Modeled = K)	2023 Base Model Noise Level Leq(h) dBA	2049 Project (2026 RTP/SCS) Noise Level Leq(h) dBA
1	Ashby Road - 75 feet from SR 99 Centerline	77.0	79.0	-2	76.0	78.0

Source: VRPA 2026

The impacts of the 2026 RTP/SCS were analyzed considering the 2023 Base Year Model and the 2049 Plus Build (Scenario 3) conditions. Table 3-67 shows the predicted noise levels at the noise receptors evaluated under existing conditions. Results of the analysis show that noise levels under the 2049 Plus Build (2026 RTP/SCS - Scenario 3) are projected to increase by 2.0 dBA's along SR 99 when compared to the 2023 Base Year Model. When it comes to noise levels, the Ldn is determined to be within ±2 dBA of the peak-hour Leq under normal traffic conditions, based on Caltrans' Traffic Analysis Noise Protocol. Typical noise standards for residential land uses in local jurisdictions set a maximum noise level of 60-65 Ldn/CNEL. Therefore, impacts may occur if residential land uses are located within 500 feet of SR 99 and no noise abatement improvements currently exist to shield them from traffic noise.

Mitigation Measures

The specific impacts on noise will be evaluated as part of the implementing agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **N 3.13.1-1** As part of the implementing agency's appropriate environmental review of each project, a project-specific noise evaluation shall be conducted, and appropriate mitigation identified and implemented.

- ✓ **N 3.13.1-2** Implementing agencies should employ, where their jurisdictional authority permits, land use planning measures, such as zoning, restrictions on development, site design, and use of buffers to ensure that future development is compatible with adjacent transportation facilities and other noise-generating land uses.

- ✓ **N 3.13.1-3** Implementing agencies shall, to the extent feasible and practicable, maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other future noise-generating facilities.

- ✓ **N 3.13.1-4** Implementing agencies should construct sound-reducing barriers between noise sources and noise-sensitive land uses. Sound barriers can take the form of earth berms or sound walls. Constructing roadways so that they are appropriate and feasible, depressed below grade relative to existing sensitive land uses, also creates an effective barrier between the roadway and sensitive receptors.

- ✓ **N 3.13.1-5** Implementing agencies shall, to the extent feasible and practicable, improve the acoustical insulation of dwelling units where setbacks and sound barriers do not sufficiently reduce noise.

- ✓ **N 3.13.1-6** Implementing agencies shall implement, to the extent feasible and practicable, speed limits and limits on hours of operation of rail and transit systems, where such limits may reduce noise impacts.

- ✓ **N 3.13.1-7** Passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations should be located away from sensitive receptors.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact N 3.13.2 – Generation of excessive groundborne vibration or groundborne noise levels.

Construction activity, as described above, can result in ground vibration, depending upon the types of equipment used. The operation of construction equipment causes ground vibrations that propagate through the ground and diminish in strength with distance from the source. Ground vibrations from construction activities very rarely reach levels that damage structures, but can cause low rumbling sounds and perceptible vibrations in buildings very close to the site. Construction activities that generally create the most severe vibrations are blasting and impact pile driving.

Ambient vibration levels in residential areas are typically 50 VdB, which is well below human perception. The operation of heating/air conditioning systems and slamming of doors produces typical indoor vibrations that are noticeable to humans. The most common exterior sources of ground vibration noticeable to humans inside residences include construction activities, train operations, and street traffic. Table 3-68 above provides some common sources of ground vibration and the relationship to human perception. This information comes from the Federal Transit Administration's "Basic Ground-Borne Vibration Concepts."

In order to estimate the impact of vibrations from construction activities as a result of the expanded or new transportation facilities or future land use development included in the 2026 RTP/SCS, the following formula was applied to evaluate ground vibration at a distance of 150 feet from the construction site.

$$Lv(D) = Lv(25\ ft) - 20 \log (D/25)$$

Using the highest vibration level shown in Table 3-67 (Lv 87) from construction-related activities and the formula shown above, the anticipated vibration level at 150 feet from the construction area is 71 VdB. Based on the table above, vibration levels above 80 VdB would be considered excessive and require mitigation. Therefore, at a distance of 150 feet from a construction area, the vibration levels would not be considered significant, given the data provided in Table 3-68. At 50 feet from the construction area, the vibration level would exceed 80 VdB based on the equipment listed in Table 3-69.

Mitigation Measures

- ✓ **N 3.13.2-1** Mitigation measures identified to address Impact 3.13.1 shall be applied to address impacts associated with Impact 3.13.2.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible.

Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

TABLE 3-69
Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 ft (in/sec)	Approximate L_v* at 25 ft
Large bulldozer	0.089	87
Caisson drilling	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

* RMS velocity in decibels (VdB) re 1 minch/second

Impact N 3.13.3 – 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.
There are five (5) public-use airport facilities in Merced County. These include the Castle Airport, Gustine Municipal Airport, Los Banos Municipal Airport, Merced Regional Airport, and Turlock Municipal Airport. Airport noise contours have been established for all airport facilities in the County and are consistent with the Federal Aviation Administration (FAA) Integrated Noise Model.

Generally, proposed projects are of the following two types:

- ✓ New Systems (new highway and transit facilities).
- ✓ Modifications to Existing Systems (widening roads, addition of carpool lanes, grade crossings, intelligent transportation systems, maintenance, and service alterations).

During the construction of new highway and transit facilities or the modification of an existing system near one of the airports in Merced County, construction workers may be temporarily exposed to excessive noise levels. Although construction activities are intermittent and temporary, workers may be exposed to excessive noise levels if any construction occurs near or adjacent to any of the airports within Merced County.

Mitigation Measures

The specific impacts on noise will be evaluated as part of the implementing agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MACG does not have

land use authority to approve development projects, its role will be to encourage inclusion of the mitigation measures referenced below.

- ✓ **N 3.13.3-1** Compliance with Occupational Safety and Health Administration's (OSHA) hearing conservation amendment. The Permissible Exposure Level (PEL) is defined as an 8-hour time-weighted average sound level of 90 dBA integrating all sound levels from at least 90 dBA to at least 140 dBA. Project implementing agencies will comply with all local sound control and noise level rules, regulations, and ordinances.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts identified, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

3.14 POPULATION, HOUSING & EMPLOYMENT

This section provides information about population, housing, and employment in Merced County. CEQA defines population impacts as changes in the location, distribution, density, or growth rate of the human population, while housing impacts relate to alterations to existing housing or the creation of demand for additional housing. The environmental setting and methodology used to evaluate the potential impacts of projects and future land use development associated with the implementation of the Project are described. The criteria used to evaluate the significance of those impacts, potential impacts resulting from those projects, and mitigation measures are discussed.

Regulatory Setting

Federal Regulations

- ✓ **The Civil Rights Act of 1964 -** The Civil Rights Act of 1964, Title VI, prohibits discrimination based on race or national origin by government agencies that receive federal funds. The power to enforce the legislation was relatively weak at the time of its enactment and was later strengthened in subsequent legislation.

- ✓ **The Civil Rights Act of 1968 -** The Civil Rights Act of 1968, Title VIII, is commonly referred to as the Fair Housing Act and expanded on the previous Civil Rights Acts by prohibiting discrimination in the sale, rental, and financing of housing based on race, religion, national origin, gender, familial status, and disability.

- ✓ **The Architectural Barriers Act of 1968 -** The Architectural Barriers Act (ABA) of 1968 requires that facilities designed, constructed, altered, or leased using federal funds must be accessible to the public, including those with disabilities. Facilities constructed prior to this legislation are exempt; however, alterations or leases pursued post-legislation may be required to comply.

- ✓ **Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 -** The Uniform Relocation Assistance and Real Property Acquisition Policies Act (URA) of 1970 was enacted to ensure fair treatment of individuals displaced by federally funded or federally assisted programs. This Act has been amended several times, but it establishes rules governing compensation for federal eminent domain.

- ✓ **The Education Amendments Act of 1972 -** The Education Amendments Act of 1972, Title IX, prohibits discrimination based on sex for any education program receiving federal financial assistance.

- ✓ **The Rehabilitation Act of 1973 -** The Rehabilitation Act of 1973 prohibits discrimination based on disability for all programs conducted by federal agencies, programs receiving federal financial assistance, federal employment, and employment practices of federal contractors.

- ✓ **The Housing and Community Development Act of 1974 -** The Housing and Community Development Act of 1974 prohibits discrimination based on race, national origin, gender, and religion for programs receiving financial assistance from HUD's Community Development Block Program. It amended the Housing Act of 1937, which established Section 8 housing.

- ✓ **Age Discrimination Act of 1975 -** The Age Discrimination Act of 1975 prohibits discrimination based on age for all programs receiving federal financial assistance.

- ✓ **The Americans with Disabilities Act of 1990 -** The Americans with Disabilities Act (ADA) of 1990 is similar to the Civil Rights Act of 1964 in that it provides similar protections against discrimination. The ADA prohibits discrimination on the basis of disability under certain circumstances. Disabilities are determined on a case-by-case basis. Title II of the ADA prohibits discrimination based on disability and applies to all public agencies at the local and State level, public transportation provided by public agencies, and local and State public housing.

- ✓ **The Native American Housing Assistance and Self Determination Act of 1996 -** The Native American Housing Assistance and Self Determination Act (NAHASDA) of 1996 was enacted to improve the condition of infrastructure on Native American lands by creating a new HUD block grant program responsible for tribal housing.

- ✓ **Native American Housing Enhancement Act of 2005 -** The Native American Housing Enhancement Act of 2005 amends the Native American Housing Assistance and Self Determination Act of 1996 and the Cranston-Gonzalez National Affordable Housing Act of 1990 to improve housing programs for tribes through increased housing grant opportunities.

- ✓ **Title 23 CFR 450.322(e) -** The Code of Federal Regulations, Title 23 CFR 450.322(e) requires that the metropolitan planning organization (MPO) update the regional transportation plan using current available forecasts and assumptions for population, land use, employment, and other trends.

- ✓ **Indian Veterans Housing Opportunity Act of 2010 -** The Indian Veterans Housing Opportunity Act of 2010 amended the Native American Housing Assistance and Self Determination Act of 1996 to exclude from consideration as income funds received by a family from the Department of Veterans Affairs for service-related disabilities.

- ✓ **Moving Ahead for Progress in the 21st Century (MAP-21) -** The Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law in July 2012 and reauthorized the federal highway and public transportation programs for fiscal years 2013 and 2014 for a total of $105 billion, holding funding flat relative to prior years. However, the bill marks a notable departure from prior surface transportation acts in several respects, most notably its short duration, elimination of earmarks, consolidation of programs, and introduction of performance measures into the federal transportation policy framework. While the bill retains many of the larger highway and transit programs of its predecessor, the Safe Accountable, Flexible, Efficient Transportation Equity Act, A Legacy for Users, known as SAFETEA-LU, eliminates almost 100 smaller programs and distributes a much larger share of funds by formula (93 percent compared to 83 percent under SAFETEA-LU).

- ✓ **Fixing America's Surface Transportation (FAST) Act -** On December 4, 2015, President Obama signed the Fixing America's Surface Transportation (FAST) Act (Pub. L. No. 114-94) into law—the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment. The FAST Act authorizes $305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs. The FAST Act maintains our focus on safety, keeps intact the established structure of the various highway-related programs we manage, continues efforts to streamline project delivery, and, for the first time, provides a dedicated source of federal dollars for freight projects. With the enactment of the FAST Act, states and local governments are now moving forward with critical transportation projects with the confidence that they will have a federal partner over the long term.

  On September 30, 2021, the law authorizing the FAST Act, as extended for one year after 2020, had expired. Therefore, President Biden signed a measure passed by Congress to extend transportation funding programs for a month while Congress debated a more comprehensive bill that invests in America's infrastructure.

- ✓ **Executive Orders -** Executive Orders 11063, 11246, 12892, 12898, 13166, and 13217 further prohibit discrimination based on a variety of criteria.

- ✓ **Federal Uniform Act -** The Uniform Act establishes standards for federally funded projects and programs that demand the attainment of real estate or the dislocation of persons from their farms, businesses, or homes. The Uniform Act implements protections and assistance in the instances of the acquisition, restoration, or destruction of real estate for federally funded projects.

State Regulations

- ✓ **Fair Employment and Housing Act of 1959 -** The Fair Employment and Housing Act of 1959 prohibits discrimination in housing based on race, religion, sexual orientation, marital status, national origin, ancestry, disability, or source of income.

- ✓ **The Unruh Civil Rights Act of 1959 -** The Unruh Civil Rights Act of 1959 prohibits discrimination based on sex, race, religion, ancestry, national origin, disability, medical condition, marital status, or sexual orientation, and applies to all businesses.

- ✓ **California Government Code, Section 65008 -** California Government Code, Section 65008 prohibits any government agency from denying an individual the enjoyment of residence, landownership, tenancy, or any other land use. It also prohibits discrimination against residential development or emergency shelters if the intended population is low-income.

- ✓ **California Constitution, Article 34, Public Housing Project Law -** Article 34 of the California Constitution, the Public Housing Project Law, states that a low-rent housing project cannot be developed, constructed, or acquired by any public agency unless it passes a majority vote of the electorate.

- ✓ **California Building Standards Code -** The California Building Standards Code is Title 24 of the California Code of Regulations (CCR) and is a compilation of building criteria from three (3) different sources maintained by the California Building Standards Commission (BSC). The sources consist of national codes adopted by State agencies without change, national codes modified and adapted to meet State conditions, and additional codes (not covered by national codes) that address specific State concerns. Since 1989, the BSC has published Title 24 every three (3) years in triennial editions. The current edition is the 2025 California Building Standards Code, which became effective on January 1, 2026.

- ✓ **California Transportation Commission Regional Transportation Plan Guidelines -** Assembly Bill (AB) 69 was passed in 1972 and required the State to establish Regional Transportation Planning Agencies (RTPA) throughout the State to prepare Regional Transportation Plans (RTP). The Merced County Association of Governments (MCAG) is the designated RTPA for Merced County. MCAG is required to submit an updated RTP to the California Transportation Commission (CTC) and Caltrans every 4 years. The CTC has established guidelines to assist RTPAs in preparing the RTPs. These guidelines recommend that RTP projections be based on available data and forecasting methodologies while being consistent with Department of Finance (DOF) projections. The guidelines were updated on January 26, 2024.

- ✓ **California Relocation Assistance Act -** The California Relocation Assistance Act of 1971 is similar to the Uniform Relocation Assistance Act of 1970 (federal). However, it applies to State and local programs and projects that receive State funding, regardless of whether they receive federal funding.

- ✓ **Homeowners and Private Property Protection Act of 2008 -** 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 them to private entities.

- ✓ **California Government Code, Sections 65580 and 65589 -** California Government Code, Sections 65580 and 65589 specify the State Housing Element requirements. The Housing Element is one of the State-mandated elements of the General Plan and is updated every eight (8) years. The legislation requires agencies to prepare and adopt the Housing Element, and the State Department of Housing and Community Development (HCD) is responsible for reviewing Housing Elements to ensure compliance with State law.

- ✓ **Senate Bill 375 – The Sustainable Communities and Climate Protection Act of 2008 -** Senate Bill (SB) 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets established under Assembly Bill (AB) 32 (California Global Warming Solutions Act), and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable community strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPO's regional transportation plan. The California Air Resources Board (CARB), in consultation with MPOs, will provide each affected region with reduction targets (based upon 2005 levels) for per-capita GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years, but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. In 2010, CARB set targets for 2020 and 2035 for each of the 18 metropolitan planning organization regions, and updated them in 2022.

  This law also extends the minimum time period for the regional housing needs allocation cycle from five (5) years to eight (8) years for local governments located within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the regional transportation plan (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

- ✓ **California Housing Element Law of 1969 -** The California Housing Element Law requires regional councils of government in California to evaluate existing and projected regional housing needs for individuals of all income levels. Each governing body is required to adopt a comprehensive, long-term general plan for the development of the area within its jurisdiction. This law mandates that each governing body plan adequately to meet present and future housing needs across all income levels as part of the Housing Element, one of the mandated elements of the local general plan. Requirements for the Housing Element are outlined in California Government Code Section 65580-65589.9.

- ✓ **Senate Bill 862- Greenhouse Gas Emission Reduction** - In 2014, Senate Bill 862 implemented long-term cap and trade funding programs for transit, sustainable communities, affordable housing, and high-speed rail. It allocates 60 percent of ongoing cap-and-trade revenues to these programs beginning in 2015-2016. A minimum of 25 percent of these funds will be allocated to projects that benefit disadvantaged communities, and a minimum of 10 percent must go to projects within those communities.

- ✓ **Assembly Bill 1207 (2025)** - AB 1207 was signed by Governor Gavin Newsom on September 19, 2025. The bill:
  - ➢ Extends the program from its previous sunset date of 2030 to December 31, 2045.
  - ➢ Formally renames the program from Cap-and-Trade to California Cap-and-Invest Program.
  - ➢ Revises offset provisions and market oversight requirements.
  - ➢ Requires additional legislative reporting and economic analysis.
  - ➢ Continues directing auction revenues to climate, transportation, housing, energy, and other greenhouse gas reduction investments.

- ✓ **Senate Bill 840 (2025)** - was adopted as part of the same legislative package and modified the allocation and use of auction revenues while supporting the program's extension through 2045. California Cap-and-Invest Program (formerly Cap-and-Trade). California's market-based greenhouse gas emissions reduction program was originally established pursuant to AB 32, the California Global Warming Solutions Act of 2006. In 2025, the Legislature adopted AB 1207 and SB 840, which extended the program through December 31, 2045, and renamed it the California Cap-and-Invest Program. The program establishes a declining statewide cap on greenhouse gas emissions and generates revenue through the auction of emissions allowances, which is invested in programs that advance California's climate, transportation, energy, housing, and environmental objectives.

- ✓ **Assembly Bill 32 (California Global Warming Solutions Act of 2006)** - California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599), which established regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and established a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be

achieved by enforcing a statewide cap on GHG emissions, phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions sufficient to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in larger, growing GHG sectors, such as transportation, than in sectors not anticipated to significantly increase emissions. AB 32 requires California to reduce its GHG emissions to 1990 levels by the year 2020. The passage of Senate Bill (SB) in 2016 expanded on the mandate set forth in AB 32, requiring California to reduce statewide GHG emissions to 40 percent below 1990 levels by 2030.

- ✓ **Senate Bill 375** - SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPO's Regional Transportation Plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years, but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding.

  This law also extends the minimum duration of the regional housing needs allocation cycle from 5 to 8 years for local governments within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the Regional Transportation Plan (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

Local Regulations

- ✓ **Local Housing Elements -** Housing Elements are included in the General Plan Updates prepared by the County of Merced and its incorporated cities and are required based on the California Government Code. Housing Elements are intended to present the area's housing needs and the goals, policies, and programs to meet those needs. At a minimum, the Housing Element should include a housing needs assessment, a sites inventory and analysis, constraints on housing, housing programs, and estimated quantified objectives to be achieved.

Environmental Setting

New Patterns of Development and Travel

The Merced region has evolved into a different kind of place since the 1970s, when downtown Merced was by far the largest job center. Today, employment opportunities are concentrated in cities and areas other than downtown Merced. The trend toward multiple job centers seems secure, given that the region already has enough unused land zoned for employment to serve triple the current population, or to last for thirty years or more at present growth rates.

Housing, jobs, shopping, and recreational opportunities tend to develop in separate locations. Offices seek proximity for ease of interaction. Manufacturing and warehousing should be separated from residential neighborhoods to reduce impacts. Big-box stores tend to locate on large parcels at the urban edge. New housing is being built around the urban edge and in communities near or adjacent to the SR 99 and SR 152 corridors. As a result of the separate development of jobs and housing, urban areas have grown in ways that force people to travel between them. Some of the edge communities show a better balance between jobs and housing, but about half of the region's jurisdictions lack a mix of housing affordable to all who work there.

Population and Employment Estimates and Projections

Every three to four years, MCAG updates its growth forecasts for housing, population, and employment. The current set of MCAG housing, population, and employment projections is provided in Tables 3-70 through 3-73. These estimates/projections are available for years 2010 through 2049, including the base year (2023) and the current year (2026), as well as other increments. These projections reflect a consensus of local government agencies on the anticipated development of the region over the next 23-year period. The projections are used for transportation and air quality planning, particularly for developing the RTP and SCS.

Table 3-70 shows the number of housing units for Merced County between 2010 and 2049.

Growth Areas

The projections indicate that the population in Merced County is expected to grow by 45,595 people between 2023 and 2049. The total population in Merced County in 2049 is projected to be 330,788. The Cities of Merced and Los Banos are expected to capture the most growth.

TABLE 3-70

Merced County Housing Units
2010 - 2049

Year	Atwater	Dos Palos	Gustine	Livingston	Los Banos	Merced	Unincorp.	County Total
2010	9,771	1,700	2,087	3,320	11,375	27,446	27,999	83,698
2020	10,296	1,803	2,146	3,706	13,182	29,083	27,567	87,783
2023	10,468	1,803	2,157	3,873	14,145	31,370	27,649	91,465
2030	11,489	1,959	2,500	4,357	16,420	36,470	28,912	102,107
2040	13,022	2,195	2,864	5,070	19,703	43,090	30,987	116,931
2049	14,084	2,374	3,098	5,483	21,307	46,598	33,506	126,450
Change 2010-2049	4,313	674	1,011	2,163	9,932	19,152	5,507	42,752
Percent	44%	40%	48%	65%	87%	70%	20%	51%

Source: Merced County Association of Governments 2024 Regional Growth Forecast.

TABLE 3-71

Population Estimates - Merced County Jurisdictions 2023 – 2049

Jurisdiction	2023	2026	2030	2035	2040	2045	2049
City of Atwater	31,390	31,681	32,122	32,776	33,579	34,304	34,794
City of Dos Palos	5,634	5,749	5,898	6,033	6,173	6,312	6,404
City of Gustine	5,940	6,086	6,563	6,842	7,024	7,173	7,277
City of Livingston	14,273	14,652	15,137	15,719	16,178	16,524	16,763
City of Los Banos	47,300	48,709	52,542	56,858	58,850	60,113	60,970
City of Merced	90,120	98,278	103,053	107,690	111,038	113,338	114,918
Merced County	90,536	86,956	86,137	85,415	86,588	88,419	89,662
TOTAL	285,193	292,111	301,452	311,333	319,430	326,183	330,788

Source: Merced County Association of Governments 2024 Regional Growth Forecast.

TABLE 3-72

Household Estimates - Merced County Jurisdictions 2010 - 2049

Year	Atwater	Dos Palos	Gustine	Livingston	Los Banos	Merced	Unincorp.	County Total
2010	8,838	1,501	1,879	3,156	10,259	24,899	25,110	75,642
2020	9,970	1,723	2,035	3,644	12,626	27,462	26,004	83,464
2023	10,137	1,723	2,046	3,796	13,548	29,617	26,083	86,950
2024	10,146	1,724	2,046	3,802	13,591	30,209	26,169	87,687
2025	10,313	1,726	2,056	3,888	13,815	30,802	26,535	89,135
2026	10,474	1,776	2,128	3,962	14,183	31,428	26,737	90,688
2030	11,082	1,864	2,361	4,254	15,666	34,299	27,173	96,699
2035	11,752	1,958	2,528	4,610	17,412	37,640	27,545	103,445
2040	12,439	2,070	2,681	4,902	18,620	40,137	28,848	109,697
2045	13,009	2,167	2,803	5,125	19,470	41,969	30,160	114,703
2049	13,383	2,230	2,884	5,273	20,029	43,174	31,022	117,995
Change 2010-2049								
Num.	4,545	729	1,005	2,117	9,770	18,275	5,912	42,353
%	51%	49%	53%	67%	95%	73%	24%	56%

Source: Merced County Association of Governments 2024 Regional Growth Forecast.

TABLE 3-73

Merced County
Employment 2020 – 2049

Year	Atwater	Dos Palos	Gustine	Livingston	Los Banos	Merced	Unincorp.	County Total
2020	8,559	929	1,271	4,868	7,954	36,247	27,772	87,600
2023	9,258	1,002	1,361	5,180	8,778	39,499	29,122	94,200
2026	9,682	1,039	1,419	5,489	9,266	41,369	30,146	98,410
2030	10,068	1,075	1,481	5,731	10,014	43,046	30,875	102,290
2035	10,289	1,108	1,533	5,989	10,427	44,199	31,505	105,050
2040	10,543	1,136	1,569	6,184	10,767	45,240	32,111	107,550
2045	10,778	1,159	1,600	6,339	11,067	46,132	32,655	109,730
2049	10,947	1,176	1,622	6,439	11,280	46,768	33,008	111,240
Change 2020-2049								
Num.	2,388	247	351	1,571	3,326	10,521	5,236	23,640
%	28%	27%	28%	32%	42%	29%	19%	27%

Source: Merced County Association of Governments, 2026

Jobs-Housing Ratio

The study of jobs-housing balance continues in urban and urbanizing regions across the country as a land use strategy with the potential to improve regional air quality and mobility. The premise assumes that land use policy can create a balanced mix of housing and employment opportunities, which in turn can reduce commuting distances and associated air pollution.

The primary objective for many jurisdictions is to improve mobility by reducing total vehicle miles traveled (VMT), both work and non-work-related. Therefore, improving or worsening the jobs-housing balance would not, in and of itself, have a beneficial or adverse impact, but the resulting effects on mobility, congestion, and air quality may constitute significant secondary impacts. A jurisdiction is considered housing-rich if the ratio is less than 1.10 and job-rich if the ratio is above 1.30. The jobs-housing ratio for Merced County in 2049 is estimated at 0.943.

Methodology

To identify and evaluate impacts associated with the Project (RTP and SCS), improvements were reviewed to determine which projects might affect population or housing. The evaluation of impacts is based on general descriptions of improvement projects and future land use development and is regional in nature. The evaluation is not project-specific but is intended to serve as a resource for jurisdictions and Caltrans in conducting site-specific environmental reviews for specific projects and future land use development. Section 3.16 of this PEIR also provides a thorough analysis of socioeconomic impacts and mitigation measures related to the Project's effects on population and on the disruption of existing residential or commercial neighborhoods.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Criteria For Significance

Four criteria were used to determine significant impacts of the Project on population and the disruption of existing residential or commercial neighborhoods. The Project is considered to have a significant impact if it:

- ✓ Contributes to unplanned/dispersion of population or employment growth. Implementation of the Project could have a significant impact if the transportation improvements lead to substantial, unanticipated increases in population beyond those currently projected, including in areas currently zoned for agriculture and open space.

- ✓ Causes community displacement. Implementation of the Project would have a potentially significant impact if new construction or right-of-way acquisition associated with the Project results in residential or business displacement.

- ✓ Causes community disruption. Implementation of the Project could have a significant impact if it resulted in permanent alterations to the characteristics and qualities of an existing neighborhood or community, particularly when access to a neighborhood or commercial district is restricted. A significant impact would also result if residences were separated from community facilities and services, or community amenities were lost. Finally, a significant impact would occur if the Project resulted in temporary disruption to or restriction of access within neighborhoods or commercial areas during construction. It is assumed that most projects have the potential for short-term construction impacts to some extent, except for minor operational improvements. In general, the implementing agencies must identify areas of concern and work towards mitigating their effects.

Impact PHE 3.14.1 – 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).

The Project could affect overall population, housing, and employment growth and dispersion across agricultural and open space lands in the region, based on the predicted regional assumptions. Implementation of the proposed mitigation measures is expected to reduce this to a less-than-significant impact. The Project is a specific set of transportation improvements, together with the long-range transportation plan (RTP) and land use allocation described in the SCS, designed to meet, among other goals, the region's long-term socioeconomic conditions. The SCS is based upon the adopted or draft general plans of the jurisdictions within Merced County. One of the strategic issues is growth. The recent growth trends in housing, population, and jobs within the region are expected to continue.

Given the region's location, mild climate, and existing population trends, growth is seen as inevitable. The Project addresses the anticipated transportation and future land use needs of projected growth. The Project is based on a projected 2049 population of 330,788 in the Merced region and associated employment.

The transportation network included in the Project was not the sole determinant that affected the distribution of growth during the development of the SCS preferred scenario. Transportation is just one factor that can affect growth. Other factors considered in preparing the SCS included the cost and type of housing, job locations, and the economy. A majority of the street and highway projects anticipated under the RTP and SCS would be intended to alleviate congestion within major residential and/or commercial centers in the Merced region and to increase connectivity between towns or cities in the region.

Factors that account for population growth include natural increase and net migration. The birth rate in California in 2020 was 52.4 per 1,000 women ages 15-44, and the state is expected to attract more than one-third of the country's immigrants.

There is some debate as to whether the Project is a response to growth, whether it facilitates growth, or, in fact, induces growth. Infrastructure of any type can be argued to do any one of these. In the case of the Project, the RTP and SCS are considered, overall, a response to growth; however, individual transportation or future development projects may facilitate or even induce growth. If existing transportation deficiencies are not addressed and future projected travel needs are not accommodated, then some localized areas of the region expected to receive new jobs and/or housing may become undesirable, causing the regional growth total to change or growth to be redistributed.

New or improved transportation facilities provide access to areas of new development, thereby allowing more people and jobs to locate in growth areas. Without these facilities, the lack of access could force development into areas with existing transportation infrastructure, thereby shifting population and employment growth from one area of the region to another. From this standpoint, the inclusion of new or upgraded transportation facilities in the Project could be considered growth-inducing in some localities.

Mitigation Measures

The specific impacts on regional growth and dispersion will be evaluated as part of the implementation agencies' project-level environmental review process regarding their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage inclusion of the mitigation measures referenced below.

- ✓ **PHE 3.14.1-1** - Local agencies will be encouraged to update general, area, community, and specific plans to reflect projects included in the 2026 RTP and future land use allocations reflected in the SCS.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on Regional Growth and Dispersion, it is probable that such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine

appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact PHE 3.14.2 – Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

The Project could displace or relocate residences and businesses through the acquisition of land and buildings necessary for highway, arterial, and transit improvements, as well as future land use development. This would be considered a potentially significant impact.

The proposed transportation improvements and future land use development could result in significant impacts related to the displacement or relocation of homes and businesses. In some cases, buildings on residential, commercial, and industrial land may need to be removed to make way for new or expanded transportation facilities or other future land uses or development. In other cases, certain transportation improvements or future land use development could permanently alter the characteristics and qualities of a neighborhood. In any case, the potential for displacement and disruption are major consideration in the final design of individual transportation improvements and future development, and is addressed in the design and development of mitigation programs. From the regional perspective, it is assumed that some residential and commercial displacement and disruption will occur.

Many of the improvement projects proposed by the Project that focus on maintaining and operating the existing regional system will occur on existing roadways and will not require land acquisition. This is true of most of the proposed carpool lanes, bus lines, transportation demand management projects, intelligent transportation systems, and road maintenance projects and programs. These transportation projects will generally not require the displacement of residences or businesses, as the right-of-way has already been acquired.

Other proposed projects, including new or expanded highway interchanges, arterial improvements, and future land use development consistent with the SCS, could affect residential units and businesses. Depending on the selected alignments, these projects may affect residential or commercial areas, and their construction may require the acquisition of new rights-of-way or development sites. Depending on the location and scope of these projects, potential impacts could be as major as the removal of several homes or businesses or as minor as extending into the existing right-of-way.

Mitigation Measures

The specific impacts on community displacement will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be

responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage inclusion of the mitigation measures referenced below.

- ✓ **PHE 3.14.2-1** Local agencies will be encouraged to update general, area, community, and specific plans to reflect projects included in the 2026 RTP and future land use allocations reflected in the SCS.

- ✓ **PHE 3.14.2-2** For projects with the potential to displace homes or businesses, project and future development implementation agencies will evaluate alternate route alignments and transportation facilities that minimize the displacement of homes and businesses. An iterative design and impact analysis would be helpful where impacts on persons or businesses are involved. Potential impacts will be minimized to the extent feasible.

- ✓ **PHE 3.14.2-3** Project implementation agencies should identify businesses and residences to be displaced. As required by law, relocation and assistance will be provided to displaced residents and businesses, in accordance with the federal Uniform Relocation and Real Property Acquisition Policies Act of 1970 and the State of California Relocation Assistance Act, as well as any applicable City and County policies.

- ✓ **PHE 3.14.2-4** Project implementation agencies will develop a construction schedule that minimizes potential neighborhood deterioration from protracted waiting periods.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts related to community displacement, such impacts are likely to remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact PHE 3.14.3 – Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

The Project has the potential to disrupt or divide a community by separating community facilities, restricting community access, and eliminating community amenities. This is a potentially significant impact. New transportation facilities or expansion of existing facilities could contribute to changes to community character in some areas of the region. The widening of a roadway could be perceived as creating a distance too great for a pedestrian to cross, thus dividing a community. An elevated grade crossing may create a physical barrier in some locations. New transportation corridors may traverse community open space, thus eliminating a community amenity. Each jurisdiction includes improvements to arterial roadways. Arterial roadways generally serve the local street network and provide access to community amenities and public facilities. Changes to these arterial roadways, such as roadway widening that impedes pedestrian crossings, could create a real or perceived barrier to community amenities, including parks, schools, and other public facilities along the arterial.

Mitigation Measures

The specific impacts on disrupting or dividing communities will be evaluated as part of the implementation agencies' project-level environmental review process regarding their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage inclusion of the mitigation measures referenced below.

- ✓ **PHE 3.14.3-1** Project implementation agencies will design new transportation facilities that protect access to existing community facilities. During the design phase of the individual improvement project, community amenities and facilities should be identified, and access to them should be considered.

- ✓ **PHE 3.14.3-2** Project implementation agencies will design roadway improvements in a manner that minimizes barriers to pedestrians and bicyclists. During the design phase, pedestrian and bicycle routes will be determined to enable easy connections to nearby community facilities, so as not to divide the communities.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While

implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts that could disrupt or divide communities, such impacts are likely to remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-notated mitigation strategies intended to avoid or reduce the significant impacts identified.

3.15 PUBLIC UTILITIES, OTHER UTILITIES & SERVICES SYSTEMS

This section identifies the existing public services and utilities in Merced County, describes the potential impacts of the 2026 RTP/SCS on public services (police protection, fire protection, emergency services, social services, schools, and libraries), utilities, and other service systems, and identifies mitigation measures for the impacts. Even though they often share rights-of-way or are built and maintained in easements adjacent to transportation facilities or future land use developments, public utilities in the region are operated and maintained by various agencies, separately from the transportation system or most local jurisdictions. Also included are the public utilities, other utilities, and service systems that regularly come into contact with agencies responsible for transportation systems or for future land use development, construction, and maintenance.

Regulatory Setting

The regulatory setting describes the federal, state, and local agencies that have jurisdiction over public services and utilities. The regulations pertinent to public services and utilities that each of these agencies enforces are also described.

Federal Regulations

- ✓ **Tariff Act of 1790 -** President George Washington signed the Tariff Act of 1790 to authorize the construction of vessels (the Revenue Cutter Service) to enforce federal tariff and trade laws and to prevent smuggling. In 1915, the Revenue Cutter Service merged with the U.S. Lifesaving Service and was officially renamed the U.S. Coast Guard. In the 1900s, the Coast Guard also became responsible for maritime navigation, merchant marine licensing, and merchant vessel safety. The Coast Guard was officially transferred to the Department of Homeland Security in 2003.

- ✓ **Aviation and Transportation Security Act -** The Aviation and Transportation Security Act was passed by the U.S. Congress and signed into law on November 19, 2001. The Act established the Transportation Security Administration (TSA), a component of the Department of Homeland Security (DHS) responsible for the security of the nation's transportation systems. With state, local, and regional partners, the TSA oversees security for highways, railroads, buses, mass transit systems, and ports. However, the majority of the TSA's resources are devoted to aviation security, including screening passengers and baggage at U.S. airports.

- ✓ **Elementary and Secondary Education Act of 1965 and No Child Left Behind Act of 2001 –** The Elementary and Secondary Education Act (ESEA) funds primary and secondary education, while emphasizing high standards and accountability. The ESEA mandates that funds be authorized for

professional development, instructional materials, resources to support educational programs, and the promotion of parental involvement.

The 2001 reauthorization of the ESEA under President Bush became known as the No Child Left Behind Act. The Act's primary focus was to close achievement gaps by providing all students with a fair, equal, and significant opportunity to obtain a high-quality education. The U.S Department of Education emphasizes four primary points within the bill, which include:

- Accountability: To ensure that students who are disadvantaged achieve academic proficiency
- Flexibility: Allows school districts flexibility in how they use federal education funds to improve student achievements
- Research-based education: Emphasizes educational programs and practices that have been proven effective through scientific research
- Parental Options: Increase the choices available to the parents of students attending Title I schools

✓ **Homeland Security Act of 2002 -** The Department of Homeland Security (DHS) was established by the Homeland Security Act of 2002. The DHS is primarily responsible for protecting the territory of the United States from terrorist attacks and responding to natural disasters. There are five homeland security missions, which include:

- Preventing terrorism and enhancing security;
- Secure and manage borders;
- Enforce and administer immigration laws;
- Safeguard and secure cyberspace;
- Ensure resilience to disasters

✓ **Executive Order 12127 – Federal Emergency Management Agency -** President Jimmy Carter signed Executive Order 12127 to create the Federal Emergency Management Agency (FEMA). FEMA assists in coordinating the federal government's role in "preparing for, preventing, mitigating the effects of, responding to, and recovering from all domestic disasters, whether natural or man-made, including acts of terror."

Additionally, the National Incident Management System (NIMS) is administered under FEMA. The NIMS guides all levels of government, nongovernmental organizations, and the private sector to collaborate in preventing, protecting against, mitigating, responding to, and recovering from major incidents. NIMS acts as a comprehensive, nationwide, systematic approach to incident management.

California has a similar management system called the Standard Emergency Management System (SEMS). SEMS is required by Government Code Section 8607(a) for managing emergencies involving

multiple jurisdictions and agencies. State of California Executive Order S205 requires the state to integrate, to the extent appropriate, the NIMS into the state's SEMS.

- ✓ **National Response Framework (Presidential Policy Directive 8: National Preparedness) –** The National Response Framework (NRF) is a key component of the National Preparedness System, which is mandated in the Presidential Policy Directive (PPD) 8: National Preparedness. PPD-8 defines five mission areas: Prevention, Protection, Mitigation, Response, and Recovery, and mandates the development of a series of policy and planning documents to explain and guide the Nation's collective approach to ensuring and enhancing national preparedness. The (NRF) is built on concepts identified in the National Incident Management System (NIMS).

- ✓ **Federal Safe Drinking Water Act -** Enacted in 1974 and implemented by the EPA, the Federal Safe Drinking Water Act (SDWA) imposes water quality and infrastructure standards for potable water delivery systems nationwide. The Act requires actions to protect drinking water and its sources (rivers, lakes, reservoirs, springs, and groundwater wells) and applies to public water systems serving 25 or more people. The Act authorizes the U.S. EPA to set national health-based standards for drinking water to protect against naturally occurring and artificial contaminants. The Act also provides for overseeing the states, municipalities, and water suppliers that implement the standards.

  U.S. EPA standards are set as Maximum Contaminant Levels (MCLs) for each chemical or microbe. The MCL represents a concentration that is not anticipated to produce adverse health effects after a lifetime of exposure, based upon toxicity data and risk assessment principles. The U.S. EPA's goal in setting MCLs is to ensure that even small violations that may occur over a period of time do not pose a significant risk to the public's health over the long run. National Primary Drinking Water Regulations (NPDWRs, or primary standards) are legally enforceable standards that limit contaminant levels in drinking water supplied by public water systems.

  Secondary standards of the Act are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. While the U.S. EPA recommends secondary standards to water systems, it does not require systems to comply; the states may choose to adopt them as enforceable standards.

  In July 2014, implementation of the SDWA was transferred from the California Department of Public Health (DPH) to the State Water Resources Control Board, Division of Drinking Water (DDW). Additionally, the DDW also oversees the operational permitting and regulatory oversight of public water systems. The DDW requires public water systems to perform monitoring for regulated contaminants that may be present in their drinking water supply. To meet water quality standards and comply with regulations, a water system with a contaminant exceeding an MCL must notify the public, remove the source from service, or initiate a process and schedule to install treatment to

remove the contaminant. Monitoring violations may include failure to conduct or report, in a timely fashion, the results of required monitoring. The DDW also conducts water source assessments, oversees water recycling projects, permits water treatment devices, certifies water system employees, promotes water system security, and administers grants under the State Revolving Fund and State bonds for water system improvements.

- ✓ **U.S. Environmental Protection Agency (EPA) -** The EPA is responsible for the establishment of primary drinking water standards in the Clean Water Act, Section 304. States are required to ensure that potable water retailed to the public meets these standards. Standards for a total of 81 individual constituents have been established under the Safe Drinking Water Act, as amended in 1986. The U.S. EPA may choose to add further constituents in the future. State primary and secondary drinking water standards are promulgated in CCR Title 22 Section 64431-64501. Secondary drinking water standards incorporate non-health risk factors, including taste, odor, and appearance.

- ✓ **Clean Water Act (CWA) -** Enacted in 1972, the Clean Water Act (CWA) is federal legislation to revise the pre-existing Water Pollution Control Act completely.

  Section 401 of the CWA made it unlawful to discharge any pollutant from a point source into navigable waters unless a permit was obtained. The U.S. EPA's National Pollutant Discharge Elimination System (NPDES) permit program controls discharges. The provisions of Section 401 of the CWA are enforced through the State Water Resources Control Board (SWRCB) and local RWQCBs.

  Section 402 of the CWA authorized the U.S. Environmental Protection Agency (EPA) to regulate point source pollutants, particularly municipal sewage and industrial discharges, to waters of the United States through the National Pollution Discharge Elimination System (NPDES) permitting program. In California, the EPA has delegated responsibility for managing the NPDES program to the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs). In addition, to establish a framework for regulating water quality, the CWA authorized a multi-million-dollar Clean Water Grant Program, which, together with funding from the California Clean Water Bond, helped communities construct municipal wastewater treatment facilities.

  These financing measures made higher levels of wastewater treatment possible for both large and small communities throughout California, significantly improving the quality of receiving waters statewide. Wastewater treatment and water pollution control laws in the State of California are codified in the California Water Code and the California Code of Regulations (CCR) Titles 22 and 23. In 1967, the California State Legislature assigned the SWRCB responsibility for implementing and enforcing water quality regulations. In 1969, the California Porter-Cologne Water Quality Control Act was passed, introducing major new water pollution control measures and establishing the nine RWQCBs as they exist today.

Section 404 of the CWA establishes a program to regulate the discharge of dredged and fill materials into waters of the United States, including wetlands. The U.S. Army Corps of Engineers (USACOE) administers the day-to-day program, including individual permit decisions and jurisdictional determinations; develops policy and guidance; and enforces Section 404 provisions.

- ✓ **Resource Conservation and Recovery Act -** The Resource Conservation and Recovery Act (RCRA) establishes minimum location standards for siting municipal solid waste landfills. Due to California laws and regulations governing the approval of solid waste landfills that meet Subtitle D requirements, the U.S. EPA has delegated enforcement responsibility to the State of California.

- ✓ **Disaster Mitigation Act of 2000 -** The Disaster Mitigation Act of 2000 (42 U.S.C. § 5121 note) was signed into law to amend the Robert T. Stafford Disaster Relief Act of 1988 (42 U.S.C. §5121-5207). Among other things, this new legislation reinforces the importance of pre-disaster infrastructure mitigation planning to reduce disaster losses nationwide and primarily aims to control and streamline the administration of federal disaster relief programs to promote mitigation activities.

- ✓ **Federal Fire Safety Act -** The Federal Fire Safety Act (FFSA) of 1992 is significantly different from other laws affecting fire safety, as the Law applies to federal operations, and there is no requirement for local action unless a private building owner leases space to the federal government. The Federal Fire Safety Act (FFSA) requires federal agencies to provide sprinkler protection in any building, whether owned or leased by the federal government, that houses at least 25 federal employees during the course of their employment.

California Regulations

- ✓ **California Education Code -** School facilities and services are subject to the rules and regulations of the California Education Code and governance of the State Board of Education (SBE). The SBE is a governing and policy-making body of the California Department of Education (CDE) that sets K–12 education policy in the areas of standards, instructional materials, assessment, and accountability. The CDE and the State Superintendent of Public Instruction are responsible for enforcing education law and regulations and for continuing to reform and improve public elementary and secondary school programs, as well as childcare programs, adult education, and some preschool programs.

- ✓ **Community Facilities Act of 1982, as amended -** The Community Facilities Act of 1982, also commonly known as the Mello-Roos Act, enables certain public agencies to designate a Mello-Roos Community Facilities District. A Mello-Roos Community Facilities District enables the financing of public improvements and services, including basic infrastructure, police and fire protection, ambulance services, schools, parks, libraries, museums, and other cultural facilities.

- ✓ **California Government Code Section 65995 -** California Government Code Section 65995 authorizes school districts to collect impact fees from developers of new residential and commercial/industrial building space. In 1998, the California legislature passed the Leroy Greene School Facilities Act, also known as Senate Bill (SB) 50, which amended Government Code Section 65995. Under the provisions of SB 50, schools may collect fees to offset costs associated with increasing school capacity resulting from development.

- ✓ **Leroy Greene School Facilities Act of 1998 -** The Leroy Greene School Facilities Act removed the ability of cities and counties to require full mitigation of school impacts. This was replaced by the ability for school districts to assess fees on developers to offset the cost of increasing school capacity resulting from new development.

- ✓ **California Fire Code -** Title 24, Part 9 of the California Code of Regulations (CCR) is the California Fire Code (CFC). The CFC sets forth regulations consistent with nationally recognized and accepted practices for safeguarding life and property from hazards, including:

  - Fire and Explosion
  - Dangerous conditions arising from the storage, handling, and use of hazardous materials and devices
  - Hazardous conditions in the use or occupancy of buildings or premises

- ✓ **Uniform Fire Code -** The Uniform Fire Code (UFC) contains regulations relating to the construction, maintenance, and use of buildings. Topics addressed in the code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises.

- ✓ **Warren-Alquist Act of 1974 -** The California Energy Commission (CEC) was established by the Warren-Alquist Act of 1974. The CEC acts as the State's primary energy policy and planning agency. The responsibilities of the CEC include advancing state energy policy, achieving energy efficiency, investing in energy innovation, developing renewable energy, transforming transportation, certifying thermal power plants, and preparing for energy emergencies

- ✓ **Public Utilities Act of 1912 -** The California Public Utilities Commission (CPUC) was established under the Public Utilities Act of 1912 and currently regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies. The

mission of the CPUC is to regulate services and utilities, protect customers, safeguard the environment, and assure Californians' access to safe and reliable utility infrastructure and services.

- ✓ **California Integrated Waste Management Act (AB 939) -** As many of the landfills in the state are approaching capacity and the siting of new landfills becomes increasingly difficult, the need for source reduction, recycling, and composting has become readily apparent. In response to this increasing solid waste problem, in September 1989, the state Assembly passed Assembly Bill (AB) 939, known as the California Integrated Waste Management Act (IWMA). The Act requires every City and County in the state to prepare a Source Reduction and Recycling Element (SRRE) as part of its Solid Waste Management Plan, identifying how each jurisdiction will meet the mandatory state waste diversion goals of 25 percent by the year 1995 and 50 percent by the year 2000. The purpose of AB 939 is to facilitate the reduction, recycling, and reuse of solid waste to the greatest extent possible. Noncompliance with the goals and timelines outlined in AB 939 can be severe, as the bill imposes fines of up to $10,000 per day on cities and counties that fail to meet these recycling and planning goals. Senate Bill 2202 mandates that jurisdictions continue 50 percent diversion on and after January 1, 2000.

- ✓ **California Solid Waste Reuse and Recycling Act -**The California Solid Waste Reuse and Recycling Act of 1991 was established to assist local jurisdictions with accomplishing the goals of the IWMA. In accordance with AB 2176, any development project that has submitted an application for a building permit must include adequate, accessible areas for the collection and loading of recyclable materials. Additionally, the areas to be utilized must be adequate in capacity, number, and distribution to serve the proposed project. Finally, the collection areas are to be located as close as possible to existing exterior refuse collection areas.

- ✓ **SB X7-6, Groundwater -** Enacted in November 2009, SB X7-6, Groundwater required statewide collection and publication of groundwater elevations for the first time in California's history. SB X7-6 directs local agencies, with assistance from DWR, to monitor and report the elevations of their groundwater basins to support resource management during both average water years and drought conditions.

- ✓ **Solid Waste: Diversion Rule (AB 341) -** Under commercial recycling law (Chapter 476, Statutes of 2011), Assembly Bill (AB) 341, directed the California Department of Resources Recycling and Recovery (CalRecycle) to develop and adopt regulations for mandatory commercial recycling. AB 341 requires that California reduce, recycle, or compost at least 75 percent of the solid waste generated in the state by the year 2020. This changes the diversion goals previously set by Assembly Bill 939 (AB 939), which required that 50 percent of waste be diverted away from landfills.

- ✓ **Executive Order B-29-15 -** Executive Order B-29-15 mandates the SWRCB to impose restrictions to achieve a statewide 25 percent reduction in potable urban water usage through February 28, 2016. Additionally, these restrictions require water suppliers in California's cities and towns to reduce usage relative to 2013 levels.

- ✓ **California Water Action Plan -** Governor Brown released the California Water Action Plan in January 2014. The Plan serves as a guideline for the five years from 2014 to 2019 as the state moves toward sustainable water management. The California Water Action Plan states its intent to meet three broad objectives: more reliable water supplies, the restoration of important species and habitat, and a more resilient, sustainably managed water resources system (water supply, water quality, flood protection, and environment) that can better withstand inevitable and unforeseen pressures in the coming decades.

- ✓ **California Water Plan -** The California Water Plan provides a collaborative planning framework for elected officials, agencies, tribes, water and resource managers, businesses, academia, stakeholders, and the public to develop findings and recommendations and make informed decisions for California's water future. The plan, updated every five years, presents the status and trends of California's water-dependent natural resources; water supplies; and agricultural, urban, and environmental water demands for a range of plausible future scenarios. The California Water Plan also evaluates different combinations of regional and statewide resource management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship. The evaluations and assessments conducted for the plan help identify effective actions and policies to meet California's resource management objectives in the near term and over several decades.

- ✓ **State Water Resources Control Board Onsite Waste Treatment System (OWTS) Policy -** The State Water Resources Control Board OWTS policy allows the continued use of OWTS, while protecting water quality and public health. This policy recognizes that responsible local agencies can provide the most effective means to manage OWTS on a routine basis. This policy also establishes a statewide, risk-based, tiered approach to the regulation and management of OWTS installations and replacements. It sets the expected level of performance and protection for OWTS.

- ✓ **California Integrated Waste Management Board (CIWMB) -** The CIWMB has numerous responsibilities in implementing the federal and state regulations summarized above. The CIWMB is the state agency responsible for permitting, enforcing, and monitoring solid waste landfills, transfer stations, material recovery facilities (MRFs), and composting facilities within California. The CIWMB issues Solid Waste Facility Permits (SWFPs) to permitted facilities. The CIWMB also certifies and appoints Local Enforcement Agencies (LEAs), county or city agencies that monitor and enforce compliance with SWFP provisions. The CIWMB is also responsible for monitoring the implementation

of AB 939 by the cities and counties. In addition to these responsibilities, CIWMB also manages the Recycled-Content.

Materials Marketing Program to increase the understanding of and commitment to using specific recycled-content products in road applications, public works projects, and landscaping. These products include recycled aggregate, tire-derived aggregate (TDA), rubberized asphalt concrete (RAC), and organic materials. As discussed previously, AB 939 requires each County in California to prepare a Countywide Integrated Waste Management Plan (CIWMP). The CIWMP is a countywide planning document that describes programs to be implemented in unincorporated and incorporated areas of the county to manage solid waste effectively and to promote and implement the hierarchy of the Integrated Waste Management Act. The CIWMP consists of a Summary Plan (SP), a Source Reduction and Recycling Element (SRRE), a Household Hazardous Waste Element (HHWE), a Non-Disposal Facility Element (NDFE), and a Countywide Siting Element (CSE).

- **Summary Plan (SP) -** A Summary Plan is a solid waste planning document required by Public Resources Code Section 41751, in which counties or regional agencies provide an overview of significant waste management problems faced by the jurisdiction, along with specific steps to be taken, independently and in concert with cities within their boundaries.

- **Source Reduction and Recycling Element (SRRE) -** The SRRE consists of the following components: waste characterization, source reduction, recycling, composting, solid waste facility capacity, education and public information, funding, special waste, and integration. Each city and county is required to prepare, adopt, and submit to the Board an SRRE that includes a program for managing solid waste generated within its local jurisdiction. The SRREs must include an implementation schedule for the proposed implementation of source reduction, recycling, and composting programs. In addition, the plan identifies the amount of landfill and transformation capacity needed for solid waste that cannot be reduced, recycled, or composted.

✓ **California Solid Waste Reuse and Recycling Act-** The California Solid Waste Reuse and Recycling Act of 1991 was enacted to assist local jurisdictions with accomplishing the goals of AB 939. In accordance with AB 2176, any development project that has submitted an application for a building permit must include adequate, accessible areas for the collection and loading of recyclable materials.

✓ **Household Hazardous Waste Element (HHWE) -** Each city and county is required to prepare, adopt, and submit to the Board a HHWE that identifies a program for the safe collection, recycling, treatment, and disposal of hazardous wastes that are generated by households. The HHWE specifies how household hazardous waste generated within the jurisdiction must be collected, treated, and disposed of. An adequate HHWE contains the following components: Evaluation of Alternatives, program selection, funding, implementation schedule, and education and public information.

- ✓ **Non-Disposal Facility Element (NDFE) -** Each city and county is required to prepare, adopt, and submit to the Board an NDFE that includes a description of new facilities and expansion of existing facilities, and all solid waste facility expansions (except disposal and transformation facilities) that recover for reuse at least five percent of the total volume. The NDFE is to be consistent with the implementation of a local jurisdiction's SRRE. Each jurisdiction must also describe transfer stations located within and outside the jurisdiction that recover less than 5% of the material received.

- ✓ **Countywide Siting Element (CSE) -**Counties are required to prepare a CSE that describes areas that may be used for developing new disposal facilities. The element also provides an estimate of the total permitted disposal capacity needed for 15 years if counties determine that their existing disposal capacity will be exhausted within 15 years or if additional capacity is desired (PRC Sections 41700-41721.5).

- ✓ **California Safe Drinking Water Act -** The California Safe Drinking Water Act was enacted in 1976, the California Safe Drinking Water Act and codified in Title 22 of the California Code of Regulations (CCR). Potable water supply is managed through local agencies and water districts, the State Department of Water Resources (DWR), the Department of Health Services (DHS), the SWRCB, the EPA, and the U.S. Bureau of Reclamation. Water right applications are processed through the SWRCB for properties claiming riparian rights or requesting irrigation water from State or federal distribution facilities. The DWR manages the State Water Project (SWP) and compiles planning information on supply and demand within the State.

- ✓ **Water Recycling Act -** The Water Recycling Act was enacted in 1991 and established water recycling as a priority in California. The Act encourages municipal wastewater treatment districts to implement recycling programs to reduce local water demands.

- ✓ **California Water Code (Section 13240) -** The California Water Code directs SWRCB and RWQCBs to prepare Water Quality Control Plans (Basin Plans), establishing water quality objectives and beneficial uses for each body of water within the regional boundaries, including groundwater basins. NPDES permits are required for wastewater treatment facilities that discharge to the surface waters of the United States. The permits establish effluent quantity and quality limitations and provide monitoring provisions to evaluate compliance. For point-source discharges (e.g., wastewater treatment facilities), the RWQCBs prepare specific effluent limitations for constituents of concern, such as toxic substances, total suspended solids (TSS), biochemical oxygen demand (BOD), and organic compounds. The limitations are based on the Basin Plan objectives and tailored to the specific receiving waters, allowing some discharges greater flexibility with certain constituents because the receiving waters can accommodate the effluent without significant impact.

The RWQCB issues waste discharge requirements (WDRs) for discharges of privately or publicly treated domestic wastewater to locations other than surface water. These WDRs are usually designed to protect beneficial uses of groundwater basins but can also be issued to protect surface waters in areas where groundwater is known to infiltrate them. Many municipal wastewater treatment facilities do not have NPDES permits but are instead issued WDRs for discharges to surface impoundments and percolation ponds. The RWQCB also issues waste reclamation requirements (WRRs) for treated wastewater used exclusively for reclamation projects such as irrigation and groundwater recharge. Title 22 of the California Code of Regulations lists allowable reclamation uses, including landscape irrigation, recreational impoundments, and groundwater recharge.

In addition to federal and state restrictions on wastewater discharges, most incorporated cities in California have adopted local ordinances for wastewater treatment facilities. Local ordinances generally require treatment system designs to be reviewed and approved by the City before construction. Larger urban areas with elaborate infrastructure would generally prefer new developments to hook into the existing system rather than construct new discharges. Other communities promote individual septic systems to avoid constructing potentially growth-accommodating treatment facilities. The RWQCBs generally delegate management responsibilities of septic systems to local jurisdictions.

- ✓ **Safe, Clean, and Reliable Drinking Water Supply Act of 2010 (the Water Bond) -** Signed into law by the California legislature in 2009, a reexamination of the Water Bond's provisions appeared on the November 2014 General Election ballot. The approved measure enacted the Water Quality, Supply, and Infrastructure Improvement Act of 2014, replacing the previous 2010 Water Bond and creating savings for local governments on water projects. A measure (Proposition 68) passed on the June 2018 ballot authorizing state and local parks, environmental protection and restoration projects, water infrastructure projects, and flood protection projects.

- ✓ **Sustainable Groundwater Management Act (SGMA) –** Governor Brown signed the Sustainable Groundwater Management Act in 2014. The legislation allows for local agencies to tailor groundwater suitability plans to meet the specific economic and environmental needs of the region. The Act, for the first time in the State's history, provides a framework for sustainable, local groundwater management. Senate Bill (SB) 13, signed in 2015, further outlines technical requirements for groundwater sustainability agency formation, the process for State Water Board jurisdiction, and guidelines for basins given high and medium priority.

- ✓ **California Health and Safety Code -** State fire regulations are outlined in Sections 13000 *et seq.* of the California Health and Safety Code, which includes regulations for building standards (as outlined in the California Building Code), fire protection and notification systems, fire protection devices, and fire suppression training.

Environmental Setting

Police Protection Services

Police protection within all unincorporated areas of the County is provided by the Merced County Sheriff's Department (MCSD). MCSD maintains stations in Merced, Los Banos, and Delhi, and also operates the John Lotorraca Correctional Center in El Nido. Typically, newly incorporated municipalities are assisted by the County Sheriff's department to serve their citizens by providing an established police force to protect the jurisdiction as it grows. City police departments are mostly found in the older, larger cities within the County. The California Highway Patrol (CHP) service area is located along the State Route (SR) and Interstate highway system that dissects through the region. The CHP cooperates with both the county and city police departments when the need arises.

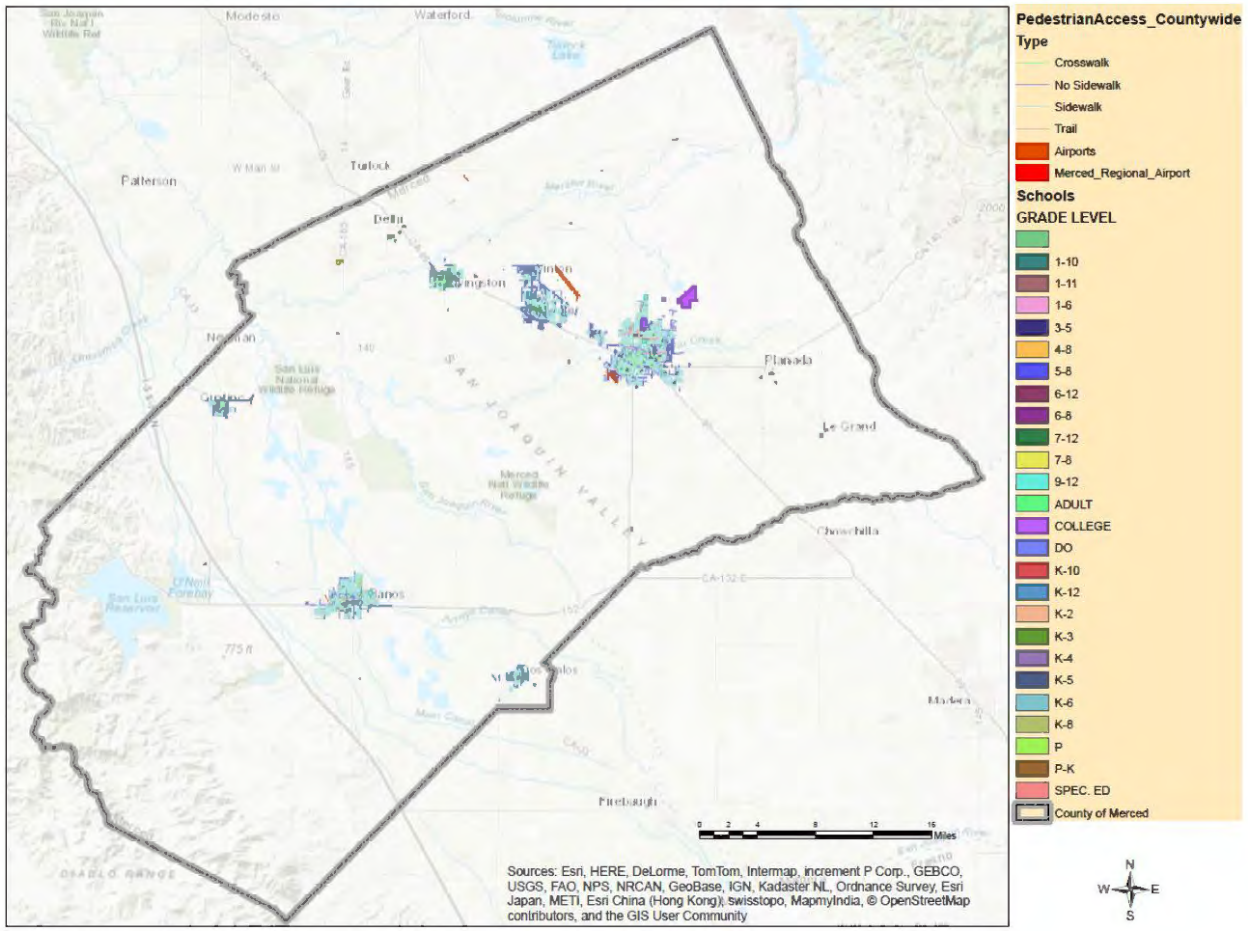
Fire Protection Services

The Merced County Fire Department provides fire prevention/suppression, rescue, and emergency medical services to the unincorporated areas of the County as well as those municipalities that contract with the County for fire protection. For the most part, private companies are contracted for ambulance services. As with police services, City Fire Departments are more common in older and/or larger municipalities. Cal Fire and the U.S. Forest Service provide fire protection services in the remote areas of the County and within the State and National Parks and forest lands.

Schools

Public education facilities and services are provided to the residents of Merced County. There are 120 school sites in Merced County, including elementary, middle, and high schools; adult/alternative/continuation, special education, and court schools; preschools; and one community college with two campuses and one university. Figure 3-22 shows the concentration of schools in Merced County alongside additional infrastructure, including sidewalks, trails, and airports.

FIGURE 3-22
MCAG Infrastructure



Gas and Electric

Pacific Gas and Electric (PG&E), Southern California Edison (SCE), and the Merced and Turlock Irrigation Districts operate in Merced County, as well as numerous solar power equipment providers. Merced Irrigation District has recently endeavored to provide low-cost electric power through a local initiative. PG&E is the sole provider of natural gas in Merced County.

Telephone and Cellular Phone Service

Local and long-distance phone service is provided primarily by AT&T, and several independent telephone companies also operate within the County. Throughout much of the County, cellular telephone service is provided by AT&T, Verizon Wireless, Sprint, and others.

Cable Television and Internet Services

Internet services in Merced County are provided by a variety of wireline, fiber, fixed wireless, cellular, and satellite providers. Major providers include AT&T, Xfinity (Comcast), Charter Spectrum, EarthLink, Fire2Wire, unWired Broadband, Frontier Communications, T-Mobile Home Internet, Verizon Home Internet, Cal.net, Starlink, HughesNet, and Viasat. Fixed wireless and satellite providers play an important role in serving rural portions of the County where traditional cable and fiber infrastructure may be limited. Television services are primarily provided by AT&T, Xfinity from Comcast, Charter Spectrum, DISH Network, and DIRECTV. Increasingly, many households also access television programming through internet-based streaming services.

Cable fibers are generally co-located and installed concurrently with other utility infrastructure. This infrastructure is installed underground within new developments to reduce visual and aesthetic impacts and potential safety hazards.

Emergency Services

- ✓ **County Offices of Emergency Services**
  The Merced County Office of Emergency Services (OES) coordinates planning and preparedness, response, and recovery efforts for disasters occurring within the County's unincorporated area. OES is tasked with coordinating with partner agencies, including the six unincorporated cities in the County, special districts, and other key private agencies, to provide efficient planning, response, recovery, and mitigation measures in the event of disaster-related events.

  Providing access to healthcare and emergency medical services is a goal of every community. Most hospitals are private, nonprofit, or for-profit organizations that operate independently of cities or counties. Hospital facilities are sized and sited in compliance with federal and state requirements, and local jurisdictions may not be involved in coordinating sizing and siting.

- ✓ **Federal Emergency Management Agency**
  Merced County is within Federal Emergency Management Agency (FEMA) Region IX, which covers Arizona, California, Hawaii, Nevada, Guam, American Samoa, the Commonwealth of Northern Mariana Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, and more

than 150 sovereign tribal entities. Region IX serves a population of over 47 million people and covers 399,000 square miles. Major threats facing the Region include earthquakes, wildfires, floods, and tsunamis.

- ✓ **Transportation Security Administration**
  The Transportation Security Administration (TSA) 's responsibilities in the Merced County region focus on protecting people and commerce, including deployments at County airports.

- ✓ **National Incident Management System**
  The State of California adopted the National Incident Management System (NIMS) in 2005 by Executive Order S-2-05. The six unincorporated cities and the County of Merced conform to NIMS through California's Offices of Emergency Services/Offices of Emergency Management.

- ✓ **United States Coast Guard**
  The Eleventh Coast Guard District encompasses the states of California, Arizona, Nevada, and Utah, as well as the coastal and offshore waters of Mexico and Central America, down to South America. Coast Guard operational units are located throughout California. The Eleventh District now includes 43 units and employs 2,400 active duty, reserve, and civilian employees. These resources carry out Search and Rescue, Homeland Security, Law Enforcement, Marine Safety, and Aids to Navigation missions over 3.3 million square miles of water.

- ✓ **California Department of Transportation (Caltrans)**
  Merced County is located within the jurisdiction of Caltrans District 10. Caltrans, in coordination with the California Highway Patrol (CHP), operates Transportation Management Centers (TMCs) to rapidly detect and respond to incidents and manage the resulting congestion. This is accomplished by gathering real-time information from sources such as pavement-mounted electronic sensors, freeway call boxes, video cameras, 911 calls, and officers on patrol. Caltrans highway crews, ramp meter sensors, earthquake monitors, motorist cellular calls, and commercial traffic reporters.

Social Services

Social services are a range of public services provided by government agencies, private not-for-profit organizations, and private for-profit organizations for their residents, including health care, public housing, and social security. Services include alcohol, drug, and mental health services; adult education and job training; child support services; civic buildings and community centers; courts and parole offices; health and disability services; homeless and housing assistance; human assistance; and Veterans Affairs.

Information provided below is referenced from the Merced County General Plan EIR. Updated information is not available. Growth and development in Merced County have not increased significantly since Nolte Associates (now NV5) completed the original research.

The existing water supply for northern and eastern Merced County was obtained from groundwater pumping and from diversions of the Tuolumne and Merced Rivers. Western Merced County receives federal and state water project deliveries via the Delta Mendota Canal and the California Aqueduct. Implementation of the Project would increase demand for potable water for developed urban uses. Urban development, both in the unincorporated County's urban areas and within cities, is projected to require up to an additional 92,000 acre-feet per year under full buildout conditions. Of this amount, approximately 26,700 acre-feet of demand would come from planned unincorporated development, primarily from The Villages of Laguna San Luis and the community of Santa Nella (Nolte, 2012). The preservation and promotion of additional agricultural lands for operation under the 2030 General Plan would also likely increase water needs. Existing water supply sources are already under strain, with competition increasing for state and federal surface water sources, particularly during times of drought, and with declining groundwater levels and recurring overdraft in many parts of the County, including El Nido, Livingston, and Merced. Several community water districts are already individually implementing projects to alleviate the strain, including the Merced Irrigation District (MID), the Merced Area Groundwater Pool Interests (MAGPI), and the Turlock Groundwater Basin Association (TGBA). These entities have begun substituting surface water for groundwater supplies in some agricultural areas and have implemented conservation projects to stabilize the decline in groundwater elevation. The details of this overview are discussed further in the following sections of this impact statement.

According to the County General Plan EIR, the largest use of water in Merced County is agricultural irrigation, followed by municipal demands and habitat support. Together, municipal demands and habitat support account for roughly 5-15 percent of the total used for agricultural purposes. Supply sources include local groundwater, surface water, large-scale state, and federally contracted water conveyances. A large portion of the agricultural water comes from outside the County, from surface water sources delivered by the Delta Mendota Canal, the San Luis Canal, the California Aqueduct, and the Merced and San Joaquin Rivers (Nolte, 2012). Merced County sits within the 15,880-square-mile San Joaquin River drainage basin, where dams and reservoirs regulate and divert surface water for uses upstream and within the County. The majority of urban uses east of the San Joaquin River are served by groundwater; west of the river, the majority of water supplied for urban uses comes from surface water sources originating north of Merced County and delivered through the canals described above (Nolte, 2012). As stated earlier, agricultural uses require the largest share of the water supply in Merced County. Various irrigation districts provide water for agricultural users throughout the county. Existing urban water demands for incorporated and unincorporated areas in Merced County, based on available data, are presented in Section 3.11, along with estimated future demands derived from community urban development plans and an assumed buildout rate of 2,000 gallons per day (gpd) per acre. Urban water demands reflect

information extracted from previous planning studies, water usage considering population data, and projected water demand assuming development within designated urban community areas.

Water supply systems obtain water from several sources, including groundwater, surface water (lakes and rivers), and conservation. In most cases, the water is then purified, disinfected through chlorination, and sometimes fluoridated. Treated water then either flows by gravity or is pumped to reservoirs, which can be elevated (water towers) or on the ground. Once water is used, wastewater is typically conveyed through a sewer system and treated at a wastewater treatment plant before being released into a body of water or reused for landscaping, irrigation, or industrial purposes.

Potable water supply comes from *surface water* and *groundwater* sources. In most urban areas of the region, surface water accounts for the majority of the water supply. In more rural areas of the region, where agricultural water demand is higher, groundwater and rainfall/snowmelt make up a larger share of the water supply. However, the amount of groundwater available largely depends on the area's geological makeup. Water demand for non-potable uses, such as landscape irrigation, can be met by *recycled water*, in addition to the other sources mentioned above.

Additional review of water supply systems is available in Section 3.11, Hydrology and Water Quality.

Sewer Disposal and Treatment

Several sanitation districts and wastewater collection and treatment facilities are located throughout the County. Primary treatment refers to the physical and chemical treatment of wastewater; secondary treatment involves continuing the process with biological decomposers to remove living organisms from the effluent.

Merced County and its unincorporated areas are served by smaller community sanitary sewer systems, which branch out into additional sewer collection services and contracted wastewater treatment and disposal. Smaller communities with limited sanitary infrastructure rely on individual and community on-site sanitary treatment systems.

Environmental Impacts, Mitigation Measures, and Significance after Mitigation

Methodology

This public services and utilities analysis evaluates those public services and utilities most likely to be affected by the construction and implementation of the various types of transportation improvement projects and future land use development projects included in the 2026 RTP/SCS.

Criteria for Significance

The following significance criteria were used to determine potentially significant impacts on public services and utilities resulting from the implementation of proposed improvement projects and future land use development. Significance criteria were developed in accordance with State CEQA guidelines. Public services and utilities will experience significant adverse impacts if improvement projects and future land use development were:

- ✓ Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: fire protection, police protection, schools, parks, and other public facilities.
- ✓ Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
- ✓ Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- ✓ Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- ✓ Have sufficient water supplies available to serve the project from existing entitlements and resources, or the need for new or expanded entitlements.
- ✓ Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
- ✓ Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.
- ✓ Comply with federal, state, and local statutes and regulations related to solid waste.

Impact PU 3.15.1 – 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:

Construction and implementation of improvement and future land use development projects could affect the level of police, fire, medical, and other public services and facilities in the County. With mitigation, this would have a less-than-significant impact. With RTP/SCS improvements, there may be reduced congestion and slowdowns, thereby improving emergency responder response times.

Numerous agencies within multiple jurisdictions in the County provide fire protection, emergency medical services, and police services. Depending on the timing, location, and duration of construction activities, proposed transportation improvement and land use development projects could delay emergency response times or otherwise disrupt the delivery of emergency services. Emergency routes would be impaired if one or more lanes of a roadway in Merced County were closed due to transportation or land use development construction activities. Traffic delays and the prevention of access to calls for service could potentially result.

While these impacts would be short-term, they could be significant. Each individual improvement or land use development project will be analyzed to determine its impact on emergency services as part of a project-specific environmental review. Adherence to road encroachment permits by the implementing agency could reduce construction-related impacts on emergency vehicle access and response times for individual improvement projects. As part of the construction mitigation strategy, a traffic control plan should be prepared to further reduce impacts on traffic and emergency response vehicles. Additionally, there may be a need for increased police, fire, and medical services at project construction sites to ensure safety. The impact of the construction sites themselves on police, fire, and emergency medical services is anticipated to be short-term in nature and less-than-significant.

The Project includes several types of improvement and future land use development projects that, upon completion, would require varying levels of police, fire, and medical services. Projects involving new roadways are expected to require police, fire, and emergency medical services for safety. In many cases, transit-related projects would involve the construction of transit stations. Upon completion, these transit stations would require police, fire, and emergency medical services. In some cases, the governing transit authority provides security. Additionally, increased use of transit modes of transportation, such as buses and trains, would increase the need for police, fire, and emergency medical services for protection and rescue. Finally, future land use developments, such as residential and commercial uses, increase the need for emergency services.

Rail projects, aside from transit stations and other future land use development, such as many industrial and office facilities, are anticipated to require minimal additional fire, police, and emergency medical services for safety purposes. The improvement and use of non-motorized transportation methods, such

as bike routes, are anticipated to require minimal additional police, fire, and emergency medical services. If restrooms or drinking fountains were incorporated into non-motorized transportation projects, these uses would require minimal police, fire, and emergency medical services for security and safety.

Public service and utility providers have historically accommodated increases in demand throughout the County. For the most part, improvement projects and future land use developments would not generate a substantial need for additional police, fire, and emergency medical services, except in cases where new facilities are constructed. Local jurisdictions are expected to be equipped to handle any increased demand for fire and medical services generated by facilities and developments, such as transit stations and major government facilities. If any new transit police staff or facilities are deemed necessary (as documented in the individual improvement project-level CEQA documentation), they will need to be funded by the appropriate transit authority. The total projected demand for each of these project types is not anticipated to be significant, based on demand for public services and utilities in similar projects and on the current capacities of existing fire, police, and medical services.

As discussed in Section 3.14 of this PEIR (Population and Housing), the County's population will increase over the next 23 years, with or without the Project. In general, MCAG does not anticipate that the Project will substantially affect regional population distribution. However, transportation projects and future land use developments in the region's less-developed areas could experience a corresponding increase in demand due to the RTP/SCS. Depending on the extent of population growth, demand for these services could significantly impact those areas. However, any construction resulting from the Project within the County will be subject to further environmental review. With the following mitigation measures, this impact would be reduced to an insignificant level.

It is possible that underground utility lines (sewer, gas, electricity, telephone, and water) could be uncovered and severed during transportation project construction or future land use development. Above-ground power, phone, and cell towers could also be affected by construction projects.

The risk of encountering underground utility lines and potentially severing them exists with any groundbreaking in the Merced region. However, prior to construction, the implementing agency would be required to incorporate the locations of existing utility lines into the construction schedule.

Mitigation Measures

The specific impacts on public services and utilities will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that

MCAG does not have land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **PU 3.15.1-1** Prior to construction, the project implementation agency will ensure that all necessary local and state permits are obtained. The project implementation agency will also comply with all applicable conditions of approval. As deemed necessary by the governing jurisdiction, road encroachment permits may require the contractor to prepare a traffic control plan in accordance with professional engineering standards prior to construction. Traffic control plans should include the following requirements:

  - Identify all roadway locations where special construction techniques (e.g., directional drilling or night construction) would be used to minimize impacts to traffic flow.
  - Develop circulation and detour plans to minimize impacts to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone.
  - Schedule truck trips outside of peak morning and evening commute hours.
  - Limit lane closures during peak hours to the extent possible.
  - Use haul routes to minimize truck traffic on local roadways, to the extent possible.
  - Include detours for bicycles and pedestrians in all areas that may be affected by the construction of individual improvement projects.
  - Install traffic control devices as specified in the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones.
  - Develop and implement access plans for highly sensitive land uses such as police and fire stations, transit stations, hospitals, and schools. Access plans will be developed with the facility owner or administrator. To minimize disruption to emergency vehicle access, affected jurisdictions will be asked to identify detours for emergency vehicles, which the contractor will then post. The facility owner or operator will be notified in advance of the timing, location, and duration of construction activities, as well as the locations of detours and lane closures.
  - Store construction materials only in designated areas.
  - Coordinate with local transit agencies to temporarily reroute or relocate bus stops in work zones, as necessary.

- ✓ **PU 3.15.1-2** Transportation and future land use development projects requiring police protection, fire service, and emergency medical service will coordinate with the local fire department and police department to ensure that the existing public services and utilities will be able to handle the increase in demand for their services. If the current levels of service at the individual improvement project or future land use development site are found to be inadequate, infrastructure improvements and personnel requirements for the appropriate public service will be identified in each individual improvement project's CEQA documentation.

- ✓ **PU 3.15.1-3** The growth-inducing potential of individual transportation and future land use development projects will be carefully evaluated so that the full implications of the 2026 RTP/SCS are understood. Individual environmental documents will quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities. Lead and responsible agencies should then make any necessary adjustments to the applicable general plan.

- ✓ **PU 3.15.1-4** As part of a transportation project-specific or future land use development project-specific environmental review, implementing agencies will evaluate the impacts resulting from the potential for severing underground utility lines during construction activities. Appropriate mitigation measures will be identified for all impacts. The implementing agencies will be responsible for ensuring adherence to mitigation measures. MCAG will be provided with documentation indicating compliance with mitigation measures.

- ✓ **PU 3.15.1-5** Prior to construction, the implementing agency or contractor will identify the locations of existing utility lines. All known utility lines will be avoided during construction.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on public services, such impacts are likely to remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact PU 3.15.2 – Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Wastewater treatment facilities and collection systems must have adequate capacity to prevent overflows, spills, or the release of untreated or partially treated wastewater, which can pollute surface and ground waters, threaten public health, adversely affect aquatic life, and impair the recreational use and enjoyment of surface waters. Untreated wastewater often contains high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oil, and grease, and an overflow could result in the closure of beaches and other recreational areas, inundate properties, and pollute rivers and streams.

Forecast growth and land use changes expected to occur as part of the 2026 RTP/SCS would primarily focus on previously developed urban areas served by existing wastewater treatment facilities and collection systems. Increases in population and housing density would result in a corresponding increase in wastewater volume relative to existing conditions, potentially requiring expansion of treatment facilities and collection systems to ensure sufficient capacity. In rural areas, new development could require the construction of on-site wastewater treatment systems.

Impacts to wastewater treatment requirements are typically controllable and can be mitigated below a level of significance through actions of the implementing agency, including adherence to existing regulations, such as those issued and enforced through the State Water Resources Control Board (SWRCB), Regional Water Quality Control Board (RWQCB), and Best Management Practices (BMPs).

Mitigation Measures

The specific impacts on wastewater treatment facilities will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **PU 3.15.2-1** During the CEQA review process for individual facilities, implementing agencies should apply necessary mitigation measures to reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or expansion should be avoided or reduced by imposing conditions to be followed by those directly involved in the activities.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce the identified impacts on wastewater treatment, these impacts are likely to remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact PU 3.15.3 – 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?

Demand for solid waste, wastewater, and potable water services in the County could be affected by the construction and implementation of transportation improvement projects and future land use developments.

Transportation and future land use and development projects have the potential to generate significant amounts of solid waste during construction through grading and excavation. Any increases in demand for wastewater and potable water services resulting from the 2026 RTP/SCS are expected to be minimal during construction. Construction debris would be recycled or transported to the nearest landfill for appropriate disposal. Currently, several landfills in the region function at or below their permitted capacity. Therefore, the proposed projects are not expected to significantly impact solid waste facilities during construction. Nevertheless, the amount of debris generated by an individual improvement project or a future land use development project would need to be evaluated on a project-by-project basis prior to construction.

It is assumed that upon completion, projects will require additional public services and utilities to meet increased demand for wastewater and solid waste services, potable water, and, in some cases, reclaimed water for landscaping. These increases would need to be evaluated on a project-by-project basis. Projects involving roadway construction and future land use development are anticipated to require potable or reclaimed water for landscaping. These increases would need to be evaluated on a project-by-project basis.

Transit-related projects would, in many cases, involve constructing transit stations. Incremental amounts of potable water would be generated at these transit stations for restrooms, public drinking water, and landscaping. Additionally, a minimal increase in demand for potable water, wastewater services, and solid waste collection would result from increased use of transit methods, such as buses and trains.

With the exception of transit-related rail, rail projects that do not involve constructing additional railways or facilities are not anticipated to require additional wastewater, solid waste, or potable water services. Improvements and increased use of non-motorized transportation methods, such as bike routes, are not anticipated to require additional levels of solid waste, wastewater, or potable water service, other than for drinking fountains. If restrooms are incorporated into non-motorized transportation projects, these uses would also require minimal amounts of solid waste (for trash receptacles), wastewater (for toilets, water fountains, and faucets), and potable water (for faucets, drinking fountains, and landscaping) services.

Public service and utility providers have accounted for increases in public needs throughout the County. In most cases, wastewater and potable water infrastructure operate well below their capacity. In addition, solid waste facilities, including transfer stations and landfills, commonly accept levels of solid waste well below their maximum capacities. Based on the demand for public services and utilities for similar projects, and on the current capacities of existing public services and utilities, the local projected demand for each of these types of projects is not anticipated to be significant, but will need to be analyzed on a project-by-project basis.

Stormwater drainage facilities are necessary to drain excess water from paved streets, parking lots, sidewalks, and roofs to prevent flooding after rain events. Ensuring adequate capacity and design of stormwater drainage facilities enables the safe management of large volumes of water and the conveyance of runoff to a point of disposal.

Growth, development, and transportation improvements expected to occur as part of the 2026 RTP/SCS would primarily focus on previously developed urban areas. Urban areas have limited amounts of vacant land where rainwater and urban runoff can percolate into the soil, and new infill development would not substantially increase impervious surfaces. In addition, development in urban areas would be served by existing storm drain collection systems.

A limited number of new developments in urban areas would convert undeveloped land to impermeable surfaces, increasing stormwater runoff that could exceed the capacity of existing stormwater drainage facilities.

Development in rural areas would convert undeveloped land to impermeable surfaces through the construction of rooftops, parking lots, roads, and driveways, thereby increasing stormwater runoff. In these areas, there are typically no stormwater drainage systems, and increases in impermeable surfaces could result in runoff volumes that require the construction of new facilities or the expansion of existing ones. The local projected demand for stormwater facilities is not anticipated to be significant, but will need to be analyzed on a project-by-project basis.

In addition, transporting construction materials to and from the sites during individual transportation improvement projects or future land use development projects could cause soil to accumulate on roadways surrounding the construction sites. Hauling trucks could track soil from the construction site onto adjacent streets during construction, particularly for projects involving excavation. Since street cleaning activities typically occur only once a month or less in a particular area, increased soil on local streets would increase the demand for street cleaning.

Mitigation Measures

The specific impacts on public services and utilities will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **PU 3.15.3-1** Projects requiring wastewater service, solid waste collection, or potable water service will coordinate with the local agencies to ensure that the existing public services and utilities will be able to handle the increase. If the current infrastructure servicing the individual transportation improvement or future land use development project sites is found to be inadequate, infrastructure improvements for the appropriate public service utility will be identified in each individual transportation improvement or future land use development project's CEQA documentation.

- ✓ **PU 3.15.3-2** Reclaimed water will be used for landscaping purposes instead of potable water wherever feasible.

- ✓ **PU 3.15.3-3** Each of the proposed transportation improvement projects or future land use developments will comply with applicable regulations related to solid waste disposal.

- ✓ **PU 3.15.3-4** The construction contractor will work with Recycling Coordinators to ensure that source reduction techniques and recycling measures are incorporated into individual transportation improvement or future land use development project construction.

- ✓ **PU 3.15.3-5** The amount of solid waste generated during construction will be estimated prior to construction, and appropriate disposal sites will be identified and utilized.

- ✓ **PU 3.15.3.6** During the CEQA review process for individual RTP/SCS projects, implementing agencies with responsibility for the construction of new storm water drainage facilities or the expansion of existing facilities to adequately meet projected capacity needs should apply necessary mitigation measures, including actions set forth in regional watershed management plans, to avoid or reduce significant environmental impacts associated with the construction or expansion of such facilities. The environmental impacts associated with such construction or expansion should be avoided or reduced by imposing conditions to be followed by those directly involved in the construction or expansion activities.

- ✓ **PU 3.15.3.7** As part of transportation project-specific and future land use development project-specific environmental review, implementing agencies will evaluate the impacts resulting from soil accumulation during construction of the transportation projects and future land use developments. Appropriate mitigation measures will be identified for all impacts. The implementing agencies will be responsible for ensuring adherence to the mitigation measures. MCAG will be provided with documentation indicating compliance with mitigation measures.

- ✓ **PU 3.15.3.8** Implementing agencies should implement appropriate measures, such as the washing of construction vehicles' undercarriages before leaving the construction site or increasing the use of street cleaning machines, to reduce the amount of soil on local roadways as a result of construction.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on solid waste, wastewater, and potable water services, it is likely that such impacts will remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact PU 3.15.4 – Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Demand for potable water services in the County could be affected by the construction and implementation of transportation improvement projects and future land use developments. Any increases in demand for potable water services resulting from the 2026 RTP/SCS are expected to be minimal during construction.

It is assumed that upon completion, projects will require additional public services and utilities to meet increased demand for potable water and, in some cases, reclaimed water for landscaping. These increases would need to be evaluated on a project-by-project basis. Projects involving roadway construction and future land use development are anticipated to require potable or reclaimed water for landscaping. These increases would need to be evaluated on a project-by-project basis.

Transit-related projects would, in many cases, involve constructing transit stations. Incremental amounts of potable water would be generated at these transit stations for restrooms, public drinking water, and

landscaping. Additionally, a minimal increase in demand for potable water would result from increased use of transit methods, such as buses and trains.

With the exception of transit-related rail, rail projects that do not involve the construction of additional railways or facilities are not expected to require additional potable water service. Improvements and increased use of non-motorized transportation methods, such as bike routes, are not anticipated to require additional levels of potable water service beyond drinking fountains. If restrooms are incorporated into non-motorized transportation projects, these uses would also require minimal amounts of potable water (for faucets, drinking fountains, and landscaping) services.

Public service and utility providers have accounted for increases in public needs throughout the County. In most cases, potable water infrastructure operates well below its capacity. Based on the demand for public services and utilities in similar projects and the current capacities of existing public services and utilities, the local projected demand for potable water is not anticipated to be significant, but will need to be analyzed on a project-by-project basis.

Mitigation Measures

The specific impacts on public services and utilities will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **PU 3.15.4-1** Projects requiring potable water service will coordinate with the local agencies to ensure that the existing public services and utilities will be able to handle the increase. If the current infrastructure servicing the individual transportation improvement or future land use development project sites is found to be inadequate, infrastructure improvements for the appropriate public service utility will be identified in each individual transportation improvement or future land use development project's CEQA documentation.

- ✓ **PU 3.15.4-2** Reclaimed water will be used for landscaping purposes instead of potable water wherever feasible.

- ✓ **PU 3.15.4-3** In January 2014, the Governor declared an emergency drought declaration for the State. Long-term water supply documents anticipate that drought (including severe single-year droughts) are regular occurrence within the State. Because the 2026 RTP/SCS does not propose or approve any

development of any water demand projects, the Governor's drought declaration does not indicate that there is a significant water supply impact associated with the RTP/ SCS.

- ✓ **PU 3.15.4-4** Local agencies shall form Groundwater Sustainability Agencies (GSAs) in accordance with the collection of State legislation [AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley)] known as the Sustainable Groundwater Management Act (SGMA), as applicable, to manage high and medium priority basin sustainably and requires those GSAs to adopt Groundwater Sustainability Plans (GSPs) for crucial groundwater basins in California.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on potable water services, such impacts may remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact PU 3.15.5 – Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Demand for wastewater services in the County could be affected by the construction and implementation of transportation improvement projects and future land use developments. Any increases in demand for wastewater services resulting from the 2026 RTP/SCS are expected to be minimal during construction. It is assumed that upon completion, projects will require additional public services and utilities to meet increased wastewater demand. These increases would need to be evaluated on a project-by-project basis.

Transit-related projects would, in many cases, involve constructing transit stations. A minimal increase in demand for wastewater services would result from increased use of transit methods, such as buses and trains.

With the exception of transit-related rail, rail projects that do not involve constructing additional railways or facilities are not anticipated to require additional wastewater service. Improvements and increased use of non-motorized transportation, such as bike routes, are not anticipated to require additional levels of

wastewater service. If restrooms are incorporated into non-motorized transportation projects, these uses would also require minimal amounts of wastewater services (for toilets, water fountains, and faucets).

Public service and utility providers have accounted for increases in public needs throughout the County. In most cases, wastewater infrastructure operates well below its capacity. Based on the demand for public services and utilities for similar projects, and on the current capacities of existing public services and utilities, the local projected demand for each of these types of projects is not anticipated to be significant, but will need to be analyzed on a project-by-project basis.

Mitigation Measures

The specific impacts on public services and utilities will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **PU 3.15.5-1** Projects requiring wastewater service will coordinate with the local agencies to ensure that the existing public services and utilities will be able to handle the increase. If the current infrastructure servicing the individual transportation improvement or future land use development project sites is found to be inadequate, infrastructure improvements for the appropriate public service utility will be identified in each individual transportation improvement or future land use development project's CEQA documentation.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on wastewater services, such impacts are likely to remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact PU 3.15.6 – 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?

Demand for solid waste services in the County could be affected by the construction and implementation of transportation improvement projects and future land use developments. Transportation and future land use and development projects have the potential to generate significant amounts of solid waste during construction through grading and excavation. Construction debris would be recycled or transported to the nearest landfill for appropriate disposal. Currently, several landfills in the region function at or below their permitted capacity. Therefore, the proposed projects are not expected to significantly impact solid waste facilities during construction. Nevertheless, the amount of debris generated by an individual improvement project or a future land use development project would need to be evaluated on a project-by-project basis prior to construction.

It is assumed that, upon completion, projects will require additional public services and utilities to handle increased demand for solid waste services. These increases would need to be evaluated on a project-by-project basis. Transit-related projects would, in many cases, involve constructing transit stations. A minimal increase in demand for solid waste collection would result from increased use of transit methods, such as buses and trains.

With the exception of transit-related rail, rail projects that do not involve constructing additional railways or facilities are not anticipated to require additional solid waste service. Improvements and increased use of non-motorized transportation methods, such as bike routes, are not anticipated to require additional solid waste management capacity. If restrooms are incorporated into non-motorized transportation projects, these uses would also require minimal solid waste (for trash receptacles) service. Public service and utility providers have accounted for increases in public needs throughout the County. In most cases, solid waste facilities, including transfer stations and landfills, commonly accept levels of solid waste well below their maximum capacities. Based on the demand for public services and utilities for similar projects and the current capacities of existing public services and utilities, the local projected demand for solid waste services is not anticipated to be significant, but it will need to be analyzed on a project-by-project basis.

Mitigation Measures

The specific impacts on public services and utilities will be evaluated as part of the implementation agencies' project-level environmental review process for their proposed individual transportation improvement project(s) and future land use development(s). Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage the inclusion of the mitigation measures referenced below.

- ✓ **PU 3.15.6-1** Projects requiring solid waste collection will coordinate with the local agencies to ensure that the existing public services and utilities will be able to handle the increase. If the current infrastructure servicing the individual transportation improvement or future land use development project sites is found to be inadequate, infrastructure improvements for the appropriate public service utility will be identified in each individual transportation improvement or future land use development project's CEQA documentation.

- ✓ **PU 3.15.6-2** Each of the proposed transportation improvement projects or future land use developments will comply with applicable regulations related to solid waste disposal.

- ✓ **PU 3.15.6-3** The construction contractor will work with Recycling Coordinators to ensure that source reduction techniques and recycling measures are incorporated into individual transportation improvement or future land use development project construction. Implementing agencies should address the new regulations set forth in SB 1383, finalized by CalRecycle in November 2020 and taking effect in January 2026.

- ✓ **PU 3.15.6-4** The amount of solid waste generated during construction will be estimated prior to construction, and appropriate disposal sites will be identified and utilized.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts on solid waste services, such impacts are likely to remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Impact PU 3.15.7 – Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Construction and implementation of transportation improvement projects and future land use developments included in the 2026 RTP/SCS could generate solid waste requiring management, handling, transportation, recycling, and disposal in accordance with applicable federal, state, and local regulations. Construction and operation of projects could generate a variety of waste streams, including excavation

materials, demolition debris, asphalt, concrete, vegetation, packaging materials, municipal solid waste, and potentially recyclable materials. Without proper handling and disposal, these materials could undermine local jurisdictions' ability to comply with applicable waste diversion and reduction requirements.

Federal, state, and local regulations establish standards and procedures intended to reduce landfill disposal and encourage source reduction, reuse, recycling, composting, and recovery of materials. Applicable requirements include the federal Resource Conservation and Recovery Act (RCRA), the California Integrated Waste Management Act (AB 939), AB 341 mandatory commercial recycling requirements, Senate Bill (SB) 1383 organics diversion requirements, local Countywide Integrated Waste Management Plans (CIWMPs), and applicable local ordinances and waste reduction programs. These regulations require jurisdictions and project proponents to incorporate waste diversion practices and, where feasible, reduce the disposal of recyclable and compostable materials. The regulatory framework applicable to the RTP/SCS already identifies these requirements and establishes compliance mechanisms. During construction, transportation, and future land use development projects, substantial quantities of construction and demolition debris could be generated temporarily. Depending on project type and location, failure to incorporate recycling and diversion practices could conflict with adopted solid waste reduction goals. Upon completion, operational activities associated with future growth may generate additional solid waste requiring collection and disposal services. However, implementation agencies would be required to comply with applicable federal, state, and local solid waste regulations and permit requirements.

Project-specific environmental review conducted by implementing agencies would evaluate compliance requirements and identify any necessary project-specific measures to ensure consistency with applicable statutes and regulations. Compliance with these requirements would reduce impacts related to solid waste management and reduction goals. With mitigation, this impact would be less than significant.

Mitigation Measures

The specific impacts related to compliance with solid waste regulations will be evaluated as part of the implementation agencies' project-level environmental review process for proposed individual transportation improvement projects and future land use developments. Implementation agencies will ultimately be responsible for ensuring adherence to the mitigation measures identified prior to construction. Given that MCAG does not have land use authority to approve development projects, its role will be to encourage inclusion of the mitigation measures referenced below.

- ✓ **PU 3.15.7-1** Prior to construction, implementing agencies shall ensure project compliance with all applicable federal, state, and local statutes, regulations, permits, and ordinances related to solid waste management, reduction, recycling, and disposal.

- ✓ **PU 3.15.7-2** Individual transportation improvement projects and future land use developments shall prepare and implement construction waste management practices that identify methods for source reduction, reuse, salvage, recycling, and disposal of construction and demolition debris, where feasible.

- ✓ **PU 3.15.7-3** Implementing agencies shall coordinate with local waste management agencies and service providers to ensure consistency with applicable Countywide Integrated Waste Management Plans, Source Reduction and Recycling Elements, and local waste diversion requirements.

- ✓ **PU 3.15.7-4** Projects shall comply with current CalRecycle regulations and applicable state waste diversion requirements, including AB 341, SB 1383, and any future amendments in effect at the time of project implementation.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, local jurisdictions, and other agencies with jurisdiction over project areas. Implementation and monitoring of the above mitigation measures would provide the framework and direction necessary to ensure compliance with applicable federal, state, and local statutes and regulations related to solid waste management and reduction. Because implementing agencies would be required to comply with existing regulatory requirements and incorporate project-specific mitigation measures, impacts associated with compliance with solid waste regulations would be reduced to a less-than-significant level.

3.16 SOCIAL & ECONOMIC EFFECTS

This section explores the social environment in Merced County by describing its demographic and income profile. The analysis includes information on minority and low- and moderate-income populations, as well as the potential impact of the Project (2026 RTP and SCS) on areas with high concentrations of minority, low-income, or moderate-income populations.

According to CEQA Guidelines Section 15358(b), impacts to be analyzed in the EIR must be "related to physical changes" in the environment, not in economic or social conditions. In fact, CEQA Guidelines Section 15131(a) does not require an analysis of a project's social or economic effects because such impacts are not, in and of themselves, considered significant effects on the environment. Section 15131(a) states:

"Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes."

The CEQA Guidelines also provide that those physical effects on the environment related to changes in land use, population, and growth rate induced by a project may be indirect or secondary impacts of the project and should be analyzed in the EIR only if the physical effects would be significant (CEQA Guidelines Section 15358(a)(2)). Indeed, "evidence of economic and social impacts that do not contribute to or are not caused by physical changes in the environment is not substantial evidence that the project may have a significant effect on the environment" (CEQA Guidelines, § 15064(f)(6)). The California Supreme Court has explained that "[a]n EIR is to disclose and analyze the direct and the reasonably foreseeable indirect environmental impacts of a proposed project if they are significant…. Economic and social impacts of proposed projects, therefore, are outside CEQA's purview" (Anderson First Coalition v. City of Anderson [2005] 130 Cal. App.4th 1173, 1182 [citing CEQA Guidelines, §§15126.2, 15064(d)(3)] [emphasis in original]). Accordingly, it is only "[w]hen there is evidence … that economic and social effects caused by a project … could result in a reasonably foreseeable indirect environmental impact, such as urban decay or deterioration, then the CEQA lead agency is obligated to assess this indirect environmental impact" (Ibid).

"Environmental Justice (EJ)" is a term often used to describe the types of social effects that are outside the realm of CEQA. Specifically, Environmental Justice is the principle that environmental laws, policies, and impacts should be applied so that projects do not disproportionately affect populations comprising ethnic minorities and/or underprivileged groups. An analysis of Environmental Justice, however, is a required element of environmental review under the National Environmental Policy Act (NEPA), not CEQA

(see United States Code, title 42, §§ 4331(a), 4342, 4344). Under CEQA, as set forth above, a lead agency is obligated to analyze impacts on the physical environment, not on social or economic impacts. Accordingly, an Environmental Justice analysis is not required.

Regardless, on February 11, 1994, President Clinton issued an "Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (Executive Order 12898, 1994). This Order is designed to focus federal attention on environmental and human health conditions in minority communities and low-income communities. The Order is further intended to promote non-discrimination in federal programs that substantially affect human health and the environment and to provide for access to information and public participation relating to such matters.

Although not required by CEQA, the Environmental Justice analysis below is intended to comply with the letter and spirit of Executive Order 12898 and other federal requirements by addressing whether and how the impacts of the Proposed Project and alternatives may disproportionately affect minority and low-income populations.

Regulatory Setting

Federal and state transportation planning laws require that RTPs, along with the projects, programs, and policies developed by agencies, such as MCAG, comply with civil rights and nondiscrimination requirements, including Title VI of the Civil Rights Act and related state requirements. These requirements are intended to ensure that transportation investments do not discriminate against people of protected classes (i.e., race, color, and national origin) and that agencies analyze potential disparate impacts on vulnerable or disadvantaged communities. The intent is to promote fair and equitable distribution of transportation benefits and burdens and to meaningfully consider the needs of diverse communities throughout the planning process.

At the federal level, requirements include civil rights protections against discrimination in federally funded programs based on a person's race, color, or national origin, and federal environmental justice objectives aimed at avoiding disproportionately high and adverse effects on minority and low-income populations. At the state level, requirements include civil rights protections against discrimination based on sex, race, color, religion, ancestry, national origin, ethnic group identification, age, mental disability, physical disability, medical condition, genetic information, marital status, or sexual orientation. At the regional level, MCAG has adopted environmental justice principles and objectives that promote equity throughout the agency's regional planning efforts.

Environmental justice addresses equal and fair access to a healthy environment, with the goal of protecting minority and low-income communities from disproportionate negative environmental impacts.

The analysis helps policymakers, local jurisdictions, and the public understand the equity-related implications of implementing the RTP in the region, especially in the disadvantaged communities.

Environmental Justice is concerned with ensuring that adverse human health or environmental effects of governmental activities do not disproportionately fall on minority and low-income populations. For transportation, environmental justice means assessing the nature, extent, and incidence of probable impacts, both negative and positive, from any transportation-related activity. The transportation activities include the transportation planning process through the implementation of individual transportation projects.

On February 11, 1994, former President Clinton signed Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. The Executive Order directs every Federal agency to make environmental justice part of its mission by identifying and addressing the effects of all programs, policies, and activities on underrepresented groups and low-income populations. Minority populations are currently protected from discrimination under Title VI of the Civil Rights Act of 1964. However, the new order, Executive Order 12898, specifically calls attention to the protection of minority populations and to low-income populations. Title VI states that "No person…shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Title VI requires transportation agencies to disclose to the public the benefits and burdens of proposed projects on minority populations. The understanding of civil rights has expanded to include gender, religion, and disability. Title VI was further amended in 1987 to extend non-discrimination requirements for recipients of federal aid to all of their programs and activities, not just those funded with federal funds.

The United States Department of Transportation (DOT) recognizes that transportation programs and policies may disproportionately burden low-income and minority communities. Hence, the U.S. DOT has issued its own order, 5680.2, to clarify and reinforce environmental justice policies for minorities and low-income populations. The Federal Highway Administration (FHWA), a branch of the DOT, has begun carrying out the order and requiring environmental justice analyses in its transportation programs and activities. FHWA has set policies for integrating environmental justice principles into existing operations, preventing disproportionately high and adverse effects, and taking action to address such effects on low-income and minority populations. All federally funded transportation planning and decisions must include an environmental justice assessment process that explicitly considers adverse effects or the potential for adverse effects on populations.

FHWA wants to ensure that social, economic, and environmental impacts are addressed up front, from early in the planning process through implementation of individual improvement projects. As a federally designated metropolitan transportation planning organization, MCAG is required to comply with rules and policies set forth by FHWA. MCAG's planning and programming activities have the potential to

disproportionately affect human health or the environment, especially for minority and low-income populations. Metropolitan Planning Organizations (MPOs) and other related agencies will explicitly consider the effects of transportation activities on minority and low-income populations. This could include establishing procedures or providing meaningful opportunities for public involvement by members of minority populations and low-income populations during the planning and development of programs. Agencies should also provide public access to public information concerning human health or environmental impacts of programs, policies, and activities. There are three main elements to FHWA's environmental justice policy:

- ✓ Avoid, minimize, or mitigate disproportionate high and adverse human health or environmental effects, including social and economic effects on minority populations, and low-income populations.
- ✓ Ensure full and fair participation by all potentially affected communities in the transportation decision-making process.
- ✓ Prevent denial of reduction in or significant delay in the receipt of benefits by minority populations and low-income groups.

Federal RTP Requirements

Federal regulations for the development of RTPs are directed at the federally designated Metropolitan Planning Organizations (MPOs). The primary federal requirements for RTPs are set forth in the metropolitan transportation planning rules described below.

Title 23 CFR Part 450.324 et seq., Federal Highway Administration (FHWA) describes the development and contents of RTPs as the long-range blueprint for investing in the regional transportation system. It is required to include short- and long-term strategies to develop an integrated, intermodal system, including policies, strategies, and projects, as well as to preserve existing infrastructure and link transportation demands to regional land use, housing, and employment goals. Title 23 CFR Part 450.324(a) and (c) identify the development and content of the RTP. The metropolitan transportation planning process provides for consideration of the following federal planning factors:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency
2. Increase the safety of the transportation system for motorized and non-motorized users
3. Increase the security of the transportation system for motorized and nonmotorized users
4. Increase accessibility and mobility of people and freight
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between (regional) transportation improvements and State and local, planned growth, housing, and economic development patterns
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight
7. Promote efficient system management and operation

8. Emphasize the preservation of the existing transportation system
9. Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation
10. Enhance travel and tourism.

The Social Equity Analysis helps Merced County's RTP address factors 2, 4, 5, 6, and 10.

Equal Access to Participate in Transportation Planning

Title VI of the Civil Rights Act of 1964, 42 U.S.C. § 2000d et seq. ("Title VI") prohibits discrimination on the basis of race, color, and national origin (including limited English proficiency) in programs and activities receiving federal financial assistance, including access to regional transportation planning processes. Under the Civil Rights Restoration Act of 1987, when an MPO receives federal funding for only a limited purpose, such as a specific service or project, it is still subject to Title VI in all of its "policies, programs, or activities," whether or not they are directly supported with the federal funds.

The Americans with Disabilities Act of 1990, Sec. 12132. ensures that no qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of services, programs, or activities of a public entity, or be subjected to discrimination by any such entity. The Rehabilitation Act, Section 504 states that "no qualified individual with a disability in the United States shall be excluded from, denied the benefits of, or be subjected to discrimination under any program or activity that either receives Federal financial assistance or is conducted by any Executive agency.

Most federal funding agencies have regulations implementing Title VI that prohibit recipient practices that have the effect of discrimination on the basis of race, color, national origin, disability, age, sex, religion, or other protected characteristics.[1,2] In 2023, the DOT issued a fact sheet clarifying that Title VI prohibits certain forms of antisemitic, Islamophobic, and related forms of discrimination (i.e., against individuals who are or are perceived to be Jewish, Christian, Muslim, Sikh, Hindu, Buddhist, or of another religious group).[3,4] Furthermore, the U.S. DOT is guided by § 21.5 Part 21 of Title 49, "Nondiscrimination in Federally-Assisted Programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964" (CFR 2011, Title 49, part 21[5]), which includes:

[1] U.S. Department of Justice (2025). "Civil Rights Division | Title VI of the Civil Rights Act of 1964." March 24, 2025. <https://www.justice.gov/crt/fcs/TitleVI> Accessed January 9, 2026.
[2] U.S. Department of Health and Human Services Office for Civil Rights (2025). "Filing a Civil Rights Complaint." September 12, 2025. <https://www.hhs.gov/civil-rights/filing-a-complaint/index.html> Accessed January 9, 2026.
[3] U.S. Department of Justice (2025). "Civil Rights Division | Title VI of the Civil Rights Act of 1964." March 24, 2025. <https://www.justice.gov/crt/fcs/TitleVI> Accessed January 9, 2026.
[4] U.S. Department of Transportation, Departmental Office of Civil Rights (2023). "Fact Sheet: Protecting Individuals from Discrimination Based on Shared Ancestry or Ethnic Characteristics." <https://www.transportation.gov/sites/dot.gov/files/2023-11/DOT%20Title%20VI%20Fact%20Sheet%20%28Sept%202023%29%20%28002%29.pdf> Accessed January 9, 2026.
[5] U.S. Department of Transportation Office of the Secretary of Transportation (2011). "§ 21.5 Part 21, Nondiscrimination in Federally-Assisted Programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964." <https://www.govinfo.gov/content/pkg/CFR-2011-title49-vol1/pdf/CFR-2011-title49-vol1-part21.pdf> Accessed January 9, 2026 via the U.S. Department of Justice's webpage, "Agency-Specific Civil Rights Information" https://www.justice.gov/crt/agency-specific-civil-rights-information.

§ 21.5(b)(7) This part does not prohibit the consideration of race, color, or national origin if the purpose and effect are to remove or overcome the consequences of practices or impediments which have restricted the availability of, or participation in, the program or activity receiving Federal financial assistance, on the grounds of race, color, or national origin. Where prior discriminatory practice or usage tends, on the grounds of race, color, or national origin, to exclude individuals from participation in, to deny them the benefits of, or to subject them to discrimination under any program or activity to which this part applies, the applicant or recipient must take affirmative action to remove or overcome the effects of the prior discriminatory practice or usage. Even in the absence of prior discriminatory practice or usage, a recipient in administering a program or activity to which this part applies is expected to take affirmative action to assure that no person is excluded from participation in or denied the benefits of the program or activity on the grounds of race, color, or national origin.

It is important that MPOs comply with these federal civil rights requirements during the RTP development process.

Assessment of Disparate Impacts

FTA Circular 4702.1B,"Title VI Requirements and Guidelines for FTA Recipients,"[6] describes the Title VI Program for MPOs and transit agencies in large, urbanized areas as including an analysis of any disparate impacts based on race, color, or national origin (including limited English proficiency). The Social Equity Analysis methodology to identify disadvantaged community TAZs also aligns with the following requirements for the Title VI analysis:

- ✓ A demographic profile of the metropolitan area that includes identification of the locations of minority populations in the aggregate, and
- ✓ A description of the procedures by which the mobility needs of minority populations are identified and considered within the planning process.

The FTA's requirement of a disparate impact analysis on race, color, or national origin align with the Social Equity Analysis methodology of identification of vulnerable/disadvantaged communities. While efforts to avoid, minimize, or mitigate disparate impacts should always be prioritized, there may be situations where such impacts cannot be fully avoided. FTA guidance recommends a structured approach: agencies should evaluate all available alternatives, and if a potential disparate impact remains, the chosen policy or action must have a substantial legitimate justification and be determined to be the least discriminatory alternative.

[6] U.S. Department of Transportation, Federal Transit Administration (2012). "FTA C 4702.1B, Subject: Title VI Requirements and Guidelines for Federal Transit Administration Recipients." October 1, 2012. <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Title_VI_FINAL.pdf> Accessed January 9, 2026.

Public Participation Plan

The Social Equity Analysis aligns with MCAG's Public Participation Plan (PPP). Federal requirements for the PPP include that MPOs describe "Seeking out and considering the needs of those traditionally underserved by existing transportation systems, such as low-income households, people of color, and LEP individuals, who may face challenges accessing employment and other services."

Consistent with these requirements, MCAG implemented a comprehensive and inclusive outreach program during development of the 2026 RTP/SCS to ensure that all residents had meaningful opportunities to participate in the planning process. Special emphasis was placed on engaging communities that have historically been underrepresented in transportation decision-making, as well as populations identified through the Social Equity Analysis as potentially experiencing disproportionate transportation burdens or barriers to participation.

Outreach activities were designed to reduce barriers to participation and increase accessibility through a variety of engagement methods, including community workshops, stakeholder meetings, online engagement opportunities, public hearings, targeted outreach to disadvantaged and underserved communities, and multilingual materials and translation services where appropriate. These efforts helped ensure that input was collected from a broad cross-section of the region's population and that the perspectives of Title VI protected populations, environmental justice communities, and LEP individuals were incorporated into the planning process. Additional information regarding outreach activities conducted in support of the RTP/SCS is provided in Chapter 5 and Appendix C.

State Planning Requirements

Protected Classes Against Which Discrimination is Prohibited

Under California Gov. Code section 11135, recipients of state funds are prohibited from discrimination on the basis of actual or perceived race, color, and national origin, ethnic group identification, religion, age, sex, sexual orientation, genetic information, and disability.

GHG Reduction Laws AB 32, SB 32, and Executive Order B-55-18

AB 32[7] established California's first comprehensive, long-term framework for addressing climate change through planning efforts aimed at reducing greenhouse gas (GHG) emissions. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020, which is a reduction of approximately 15 percent below emissions expected under a "business as usual" scenario. Building on AB 32, SB 32[8] and Governor's Executive Order B-55-18[9], established more aggressive statewide GHG emissions reduction goals (40

[7] AB 32 (Nunez, Chapter 488, Statutes of 2006).
[8] SB 32 (Pavley, Chapter 249, Statutes of 2016).
[9] Executive Order B-55-18. September 2018. Available at: https://www.gov.ca.gov/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf.

percent below 1990 levels by 2030 and carbon neutrality by 2045) than were in place when SB 375 was signed into law in 2008.

To implement these goals, the California Air Resources Board (CARB) must prepare a Scoping Plan that identifies and recommends measures to achieve the State's established climate goals.[10] In 2022, CARB updated its Climate Change Scoping Plan to reflect the State's more aggressive GHG emission reduction targets and to identify the need for greater GHG emission reductions from all sectors, including passenger vehicle travel, and for integrated land conservation and development strategies, which is SB 375's foundation.

SB 375 – Sustainable Communities and Climate Protection Act

SB 375[11] requires MPOs to create an action-oriented RTP/SCS, which includes transportation, land use, and housing planning efforts to reduce GHG emissions. The law also requires MPOs to consider equity, access to opportunity, and disparities in benefits and burdens. The Social Equity Analysis performs a comprehensive evaluation of equity, access, and disparities across the Merced region for the 2026 SCS. The analysis supports SB 375 planning efforts by providing data to inform coordination of regional growth patterns and transportation planning to reduce GHG emissions.

Disadvantaged Communities Definition

At the state level, the identification of disadvantaged communities is guided by CalEnviroScreen 4.0 (CES 4.0), a standardized screening tool developed by the California Office of Environmental Health Hazard Assessment (OEHHA). CES 4.0 ranks census tracts based on cumulative pollution burden and population characteristics, serving as a foundational tool to identify equity-priority populations for planning and programming activities.

While CES 4.0 is a valuable tool for identifying disadvantaged communities, its relative scoring compares census tracts across all of California. As a result, much of Merced County is identified as disadvantaged, which limits the tool's ability to distinguish variation within the region. To better reflect local conditions and support meaningful analysis, MCAG has developed a regional definition of vulnerable and disadvantaged communities. Furthermore, MCAG developed a customized methodology for the following reasons: (1) to meet the requirements of the RTP/SCS, including consideration of limited English proficient households and CES 4.0 pollution burden indicators for use in future calls for projects and planning efforts; and (2) to support the SCS social equity analysis by assessing the benefits and burdens of planned transportation investments.

[10] Health & Safety. Code § 38561.
[11] SB 375 (Steinberg, Chapter 488, Statutes of 2008)

Additionally, census tract-level data can obscure localized disparities in small or dispersed communities, and certain transportation-specific vulnerabilities — such as lack of sidewalks and bike lane access, exposure to air toxins, high transportation costs, or isolation from employment and essential services — are not fully captured by CES indicators alone. Because of the aforementioned factors, the MCAG social equity analysis uses Traffic Analysis Zones (TAZs) as the geographic units of analysis. Often smaller than a census tract, TAZs are used in travel demand models to analyze travel behavior, estimate trip generation and attraction, forecast traffic volumes, and evaluate transportation system performance. TAZs align more directly with transportation modeling and can provide a finer-grained understanding of transportation impacts and benefits of projects.

Section 11135 of the California Government Code expands Title VI protections to prevent discrimination in state activities on the basis of sex, religion, ancestry, ethnic group identification, age, mental disability, physical disability, medical condition, genetic information, marital status, or sexual orientation.

Environmental justice is the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, in the development, implementation, and enforcement of environmental laws, regulations, and policies. Issues of environmental justice affect low-income, minority, and low-mobility populations and may include, but are not limited to, concerns related to human health and safety, economic development, society and culture, accessibility, and the natural environment.

Based on federal and state requirements, MCAG has two primary responsibilities in addressing EJ while developing the 2023 FTIP. First, MCAG must ensure equity in the distribution of potential benefits and burdens associated with the proposed transportation investments identified in the 2023 FTIP. Second, MCAG's planning process must provide an equal opportunity for all segments of the population to contribute input to the transportation planning process.

The goal of this process is to ensure racial, low-income, and geographic equity of transportation investment benefits. Populations considered high minority or low-income should realize equal levels of benefit from transportation investments compared to other population groups. Transportation investments should not be concentrated in a single geographic region but should be fairly distributed. Finally, all members of the community must have an equal opportunity to provide input into the transportation planning process.
This equity analysis involves three key steps:

1. Collect socio-economic data on target populations;
2. Identify and locate low-income and minority populations (i.e., EJ communities or EJ areas);
3. Quantitatively assess the benefits and burdens of the transportation plan with respect to EJ communities.

Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies.

Meaningful involvement means that:

- ✓ People have an opportunity to participate indecision about activities that may affect their environment and/or health.
- ✓ The public's contribution can influence the regulatory agency's decision.
- ✓ Community concerns will be considered in the decision-making process.
- ✓ The decision makers seek out and facilitate the involvement of those potentially affected.

Minority Populations: "Minority population" means "any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy, or activity."[12] Minority populations include persons who identify as any of the following groups, as defined by the Census Bureau[13] in accordance with guidelines provided by the U.S. Office of Management and Budget, as well as DOT Order 5610.2(a).

- ✓ Black or African-American – A person having origins in any of the Black racial groups of Africa.
- ✓ Hispanic or Latino – A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.
- ✓ American Indian or Alaska Native – A person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment.
- ✓ Asian – A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippines, Thailand, and Vietnam.
- ✓ Native Hawaiian or Other Pacific Islander – A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

The non-Environmental Justice population includes persons who identify as white and are not Hispanic or Latino.

[12] DOT Order 5610.2(a), https://www.transportation.gov/transportation-policy/environmental-justice/department-transportation-order-56102a

[13] US Census Bureau's definitions for race and ethnicity, see: http://www.census.gov/topics/population/race/about.html.

Low-Income Populations: Low-income population means any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy, or activity.[14] *MCAG defines persons as low-income if they live in a household with an income below 150 percent of the federal poverty level.*

The U.S. Department of Health and Human Services (HHS) publishes annual federal poverty guidelines based on household size and composition. Effective January 2026, the federal poverty guideline was $15,650 for a one-person household and $32,150 for a family of four. These guidelines are used to determine eligibility for a variety of federal assistance programs.

According to the U.S. Census Bureau's American Community Survey (ACS) 2020–2024 five-year estimates, approximately 18.4 percent of Merced County residents lived below the federal poverty level. Poverty rates vary among communities and demographic groups within the County and are an important consideration in evaluating equity, access to opportunities, and environmental justice issues.

Environmental Setting

MCAG aims to ensure that the benefits and burdens of transportation investment from the 2026 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) are distributed equitably across all communities, regardless of race, income, or background. This chapter presents MCAG's Social Equity

Analysis of the 2026 RTP/SCS, prepared to satisfy federal and state equity-related planning requirements, including Title VI of the Civil Rights Act of 1964, the 2024 RTP/SCS development guidelines issued by the California Transportation Commission (CTC), and the 2019 SCS Program and Evaluation Guidelines issued by the California Air Resources Board (CARB).

The chapter examines how the 2026 RTP/SCS's long-range investments, policies, and land use strategies affect historically underserved populations, including low-income households, communities of color, persons with limited English proficiency, persons with disabilities, and other protected groups. In support of this analysis, MCAG conducted a county-wide Health and Environmental Justice Analysis (HEJA) that deepens the understanding of community vulnerabilities through a public health lens and identifies the region's disadvantaged communities, informed by findings from extensive engagement with diverse community groups. By identifying and addressing potential disparate impacts, this chapter demonstrates

[14] DOT Order 5610.2(a), https://www.transportation.gov/transportation-policy/environmental-justice/department-transportation-order-56102a

MCAG's commitment to advancing a transportation system that is not only efficient and sustainable but also equitable and accessible for all residents of the Merced region.

Merced County Demographics

Merced County is a predominantly rural, socioeconomically disadvantaged county in California's San Joaquin Valley, according to CES 4.0 and census data, characterized by a diverse population and relatively low incomes. The county has a population of roughly 290,000 residents, with a high proportion of Hispanic or Latino residents.

Age

Census block groups within Atwater, Merced, and Los Banos have a higher percentage of infants/toddlers and children/youth (0-4 and 5-17) than the rest of the county (i.e., more residents are children than in other parts of the county). Children and youth ages 5 to 17 are well represented in communities within and surrounding Planada. In addition, the unincorporated communities of Midway[15] and South Dos Palos, along with the western portion of the City of Dos Palos, have a strong presence of children and youth between the ages of 5 and 17, while the eastern part of Dos Palos has an especially high percentage of older adults (65 and older). Merced, Los Banos, and Atwater have select pockets of census block groups of older adults. The unincorporated area of Gustine is part of a large tract with a high older-adult population.

Disability

Within Merced County, census tracts that include Delhi, Franklin, Gustine, and parts of the City of Merced have the highest percentage of residents with disabilities (18-23%). Countywide, the most prevalent types of disabilities include ambulatory difficulty[16], a cognitive difficulty[17], and an independent living difficulty[18]. When disaggregated by race/ethnicity, Black or African American, White, and multiracial residents have higher rates of disability than other racial/ethnic groups.

Language

More than half of Merced County residents speak a language other than English at home. The American Community Survey data category C16001 reports on the languages spoken at home by individuals aged 5 and older. According to the 2023 estimates, 47.1 percent of Merced County residents spoke only English at home, while 52.9 percent spoke a language other than English. Spanish was the most spoken non-English language at 44.5 percent, followed by Other Indo-European languages (4.1%) and Other Asian and Pacific Island languages (2.8%).

[15] "Midway" is an area located between the City of Dos Palos and South Dos Palos, sometimes considered part of South Dos Palos.
[16] Having serious difficulty walking or climbing stairs.
[17] Having difficulty remembering, concentrating, or making decisions because of a physical, mental, or emotional problem.
[18] Having difficulty doing errands alone such as visiting a doctor's office or shopping because of a physical, mental, or emotional problem.

Limited English Proficiency (LEP) refers to individuals who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English. In transportation planning, public outreach, and social equity analyses, LEP populations are important because language barriers can limit access to transportation services, public information, and meaningful participation in planning and decision-making processes. Countywide, LEP residents are present across each of these language groups. 2023 ACS estimates indicate that 18 percent of Merced County residents speak only Spanish and are considered LEP, meaning they speak English less than "very well." Other Indo-European languages had the next-highest concentration of LEP residents at 4.1 percent, followed by Other Asian and Pacific Islander languages at 2.8 percent.

Spatially, census block groups within and surrounding Atwater, Delhi, Dos Palos, Dos Palos Y, El Nido, Gustine, Hilmar, Le Grand, Livingston, Los Banos, Merced, Planada, South Dos Palos, Santa Nella, and Winton have a high concentration of LEP residents and linguistically isolated households.

For Spanish, the census tracts with the highest percentage of adult LEP Spanish speakers (40%-57% of residents 18 and older who speak Spanish) are located in the City of Merced, south of State Route 99 (SR 99)/downtown, and the tract that includes Planada.

For the Indo-European language group, census tracts in Livingston, Delhi, Hilmar, South Dos Palos, and Los Banos have the largest proportion of LEP residents (4-6% of adults).

- ✓ **Asian Indian:** The tracts that include Livingston and Delhi have both higher percentages of LEP adult residents and speak an Indo-European language other than English and Spanish, and concentrations of Asian Indian residents. Given this, Indic languages such as Punjabi and Hindi are likely the primary languages used by linguistically isolated households within these communities. After these tracts, the largest Asian Indian population lives in tracts north of SR 99 in the City of Merced and south of SR 99 in Atwater.

- ✓ **Non-Asian:** Given the small number of Asian Indian residents in the tracts with South Dos Palos, Hilmar, and Los Banos, the predominant language among limited English proficient residents in these communities is likely Portuguese.

Merced County census tracts with the largest proportions of adult residents who speak Asian and Pacific Islander languages and have limited English proficiency are clustered in the City of Merced and Franklin (3-4% of adult residents in the tracts). In these census tracts, the most common Asian ethnic groups are as follows.

- ✓ **Hmong**: Most prevent in Franklin and the City of Merced, both north and south of the SR 99, primarily in tracts with higher percentages of limited English proficient adult residents who speak Asian and Pacific Island languages, followed by tracts in Atwater and Winton.

- ✓ **Filipino**: Most prevalent in parts of the City of Merced north of the SR 99 that have lower percentages of limited English proficient adult residents who speak Asian and Pacific Island languages, Los Banos, South Dos Palos, Livingston, and Delhi.

- ✓ **Vietnamese**: Most prevalent north of the SR 99 in tracts of the City of Merced and Atwater, with lower percentages of limited English proficient adult residents who speak Asian and Pacific Island languages, Franklin, and the western part of Los Banos.

- ✓ **Laotian**: Most prevalent in the western part of the City of Merced and Franklin, both north and south of SR 99.

- ✓ **Mien**: Most prevalent in the western part of the City of Merced, both north and south of SR 99.

- ✓ **Japanese**: Most prevalent in parts of the City of Merced and the City of Dos Palos, with lower percentages of LEP adult residents who speak Asian and Pacific Island languages.

- ✓ **Korean**: Most prevalent in Atwater and parts of the City of Merced, with lower percentages of limited English proficient adult residents who speak Asian and Pacific Island languages.

- ✓ **Thai**: Most prevalent in Franklin in a tract with a higher percentage of limited English proficient adult residents who speak Asian and Pacific Island languages, followed by other tracts in Atwater and the City of Merced.

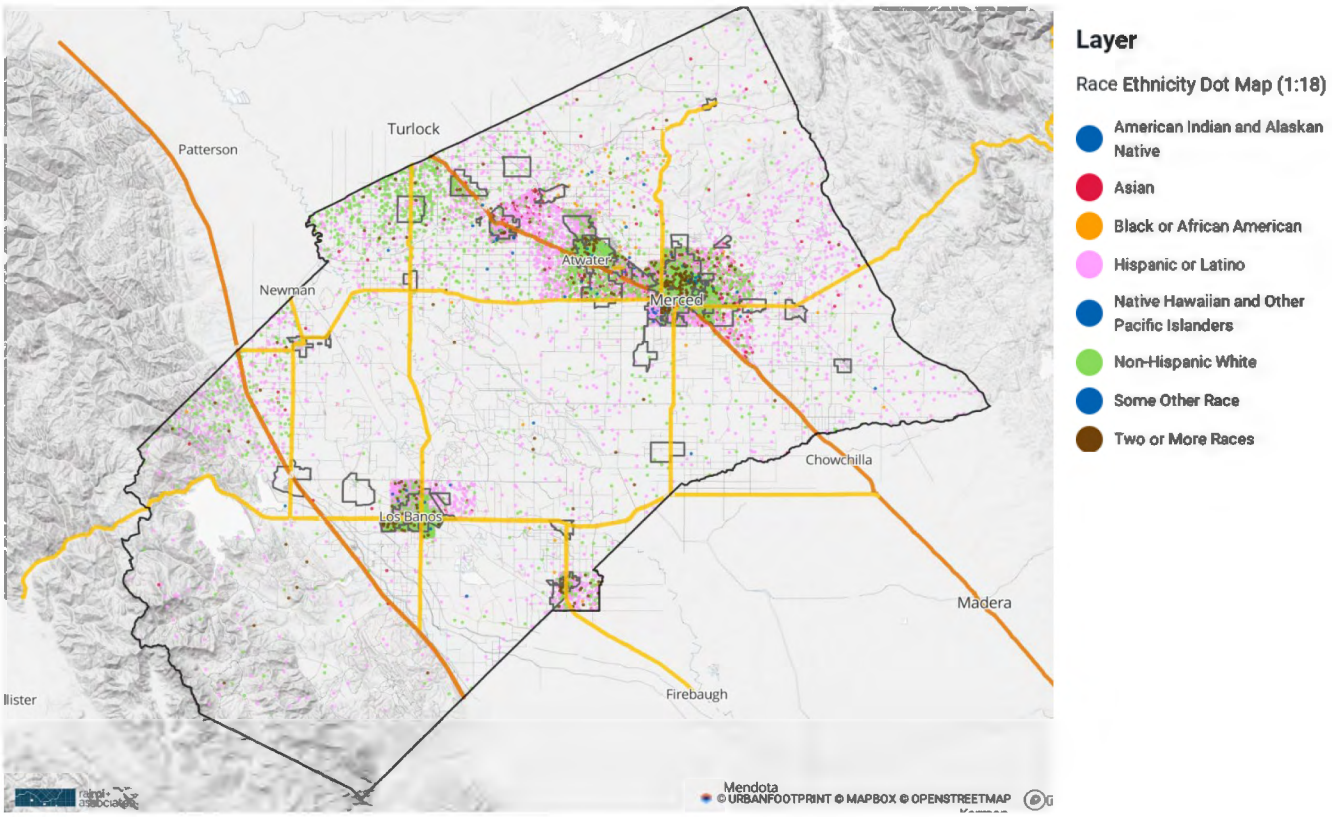
- ✓ **Chinese**: Most prevalent in tracts north of the SR 99 in the City of Merced (near University of California, Merced (UC Merced)) and the City of Atwater.

Race/Ethnicity

The racial/ethnic distribution of the county mirrors the county's population distribution. Nearly all census block groups in the county have more than 50 percent residents of color (reference Figure 3-23). The only block groups in the county with a majority of residents who are non-Hispanic and White alone (i.e., not multiracial) are: those that include and surround Hilmar, one block group immediately southwest of the SR 152/SR 165 intersection in Los Banos, McSwain, two block groups on and adjacent to the northeastern part of the City of Merced, the rural area surrounding Planada, and the area that includes and surrounds Snelling. The areas with the highest percentage of Hispanic/Latine residents (78 percent and above) are in Delhi, Le Grand, Livingston, the City of Merced immediately south of the SR 99, the central and western

parts of Los Banos, Planada, South Dos Palos, and Winton. Multiple neighboring block groups with 90 percent or more residents of color are in Livingston, Planada, South Dos Palos, and South Merced.

FIGURE 3-23
Density of All Race/Ethnicity Residents



Source: U.S. 2020 Census Bureau.

Socioeconomic Status

In 2025, the Area Median Incomes (AMI) in Merced County ranges from $65,750 for a single-person household to $116,450 for a 7-person household - all remain below the statewide average of $118,100 for a 4-person household[19], reflecting broader regional economic challenges (reference Figure 3-24). Area Median Income (AMI) is calculated annually for each California county and used to classify household income into tiers — such as "Moderate Income" (80–120% AMI) and "Low Income" (50–80% AMI) — that vary by household size. These thresholds determine eligibility for deed-restricted affordable housing and define the affordability levels each jurisdiction must accommodate to meet its Regional Housing Needs Allocation (RHNA) targets.

[19] HUD 2025 State Income Limits Memorandum: https://www.hcd.ca.gov/sites/default/files/docs/grants-and-funding/income-limits-2025.pdf.

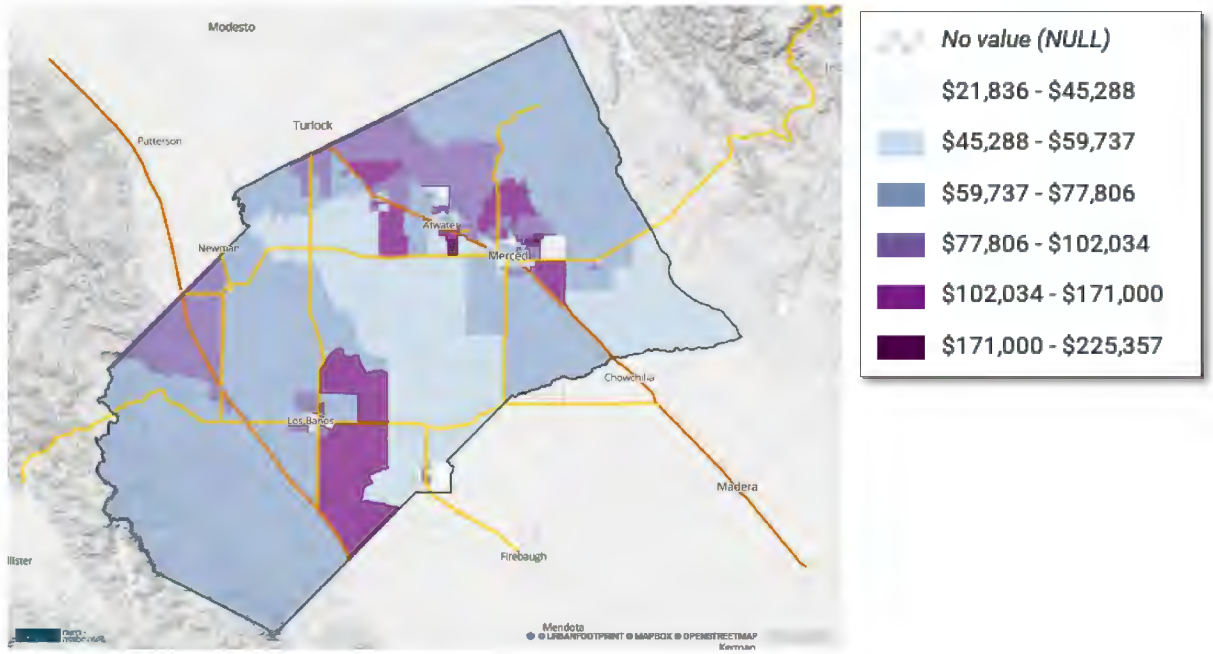
Many communities experience elevated levels of socioeconomic vulnerability, including higher rates of poverty, lower educational attainment, and lower overall socioeconomic status indices. In 2023, the maximum income for a 4-person household in Merced County to qualify as "Low Income" was $69,950. The 2023 ACS 5-year included the median annual household income in 2023 dollars for households of all sizes in each census block group, each census tract, and for the entire county. Half of the households in any geographic area have annual incomes that are lower than the median annual household income for that area, while the other half of households make more than the median. Because the 2023 ACS 5-year estimates identified the average household size in Merced County as 3.27 people (and the average household size for family households as more than 4 people), the 2023 income levels for a 4-person household were used to classify the median annual income for census tracts and census block groups.

Some census tracts in the county have the highest median income, but also have the highest percentage of households that are severely housing cost burdened. The tracts identified as very low median income are in Atwater, the eastern portion of Dos Palos, Livingston, Los Banos, central Merced, and Winton. There are census tracts in Atwater, Delhi, El Nido, Gustine, Le Grand, Livingston, eastern and southern Los Banos, Planada, outskirts of Merced, and Winton are considered low income. Census block groups in Atwater, Delhi, Gustine, Livingston, Los Banos, Merced, and Winton are identified as areas who have the highest percentage of households who are paying more than 50 percent of their annual household income on housing costs.

The demographic conditions described above intersect with environmental burdens (e.g., ozone, particulate matter 2.5, and diesel particulate matter), as evidenced by CalEnviroScreen 4.0 results showing that a substantial share of the county's census tracts rank in the top 25 percent of disadvantaged communities statewide (reference Figure 3-25). In fact, many rural and unincorporated communities, such as Planada, South Los Banos, and El Nido, frequently exhibit CES percentile scores in the 70th to 80th percentile range or higher, with a countywide median around the 77th percentile. This indicates that much of Merced County faces cumulative environmental and socioeconomic stressors, reinforcing its classification as a highly burdened and environmentally disadvantaged region within California.

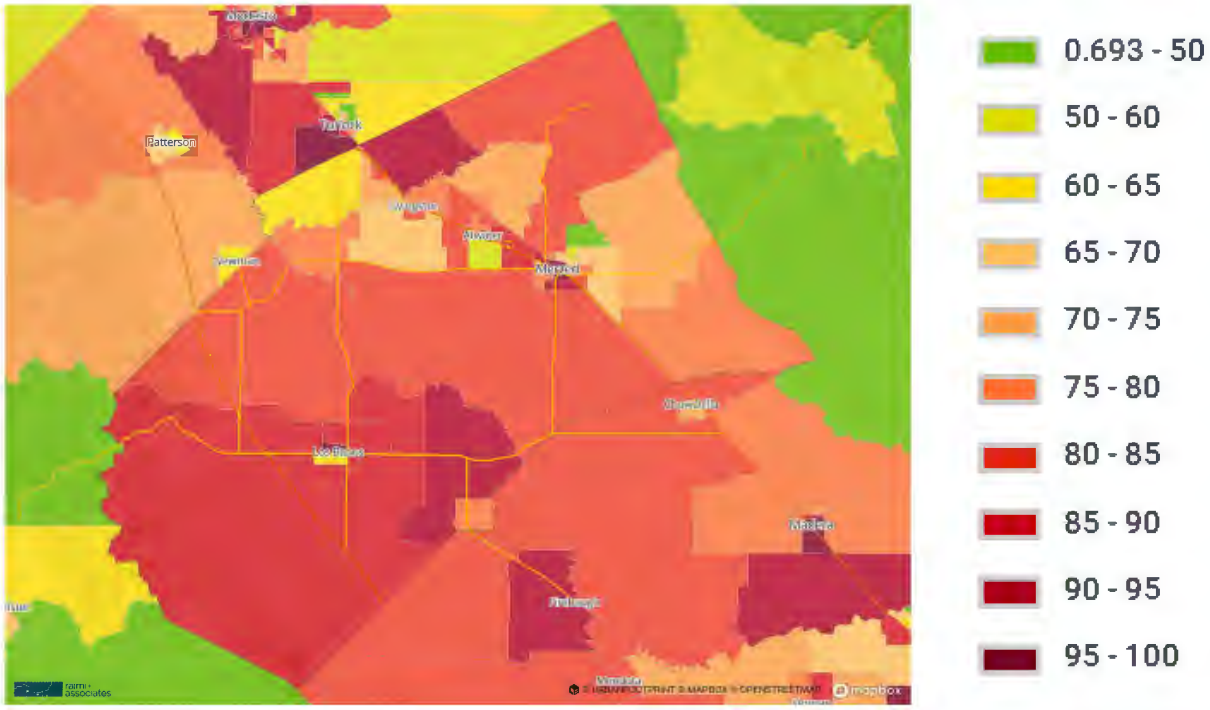
FIGURE 3-24

Median Household Income



Source: U.S. Census Bureau, American Community Survey, 2019-2023 5-year estimates.

FIGURE 3-25
Overall CalEnviroScreen Percentiles



Source: California Office of Environmental Health Hazard Assessment.

Community Engagement Summary

As part of developing the 2026 Health and Environmental Justice Analysis (HEJA), MCAG engaged with community groups, residents, and community leaders throughout the county to gather information on the needs of vulnerable and disadvantaged communities, opportunities and concerns related to transportation investments, and preferred approaches and strategies for community engagement. In addition to gathering information for the HEJA, the engagement helped to strengthen and develop new relationships. Key leader interviews were also used to educate community leaders unfamiliar with regional transportation planning about the plan's frequency, purpose, and opportunities.

Community Surveys

In September and October 2025, MCAG collected intercept surveys at 8 community events. MCAG identified surveying opportunities and coordinated all aspects of each engagement. MCAG staff also participated in many of these events. Available in both English and Spanish, the 15-question survey was printed on a single piece of double-sided paper. It captured participants' typical modes of travel, transportation challenges, barriers to active transportation, and social media usage.

Key Leader Interviews and Focus Groups

As part of the HEJA community engagement process, MCAG conducted seven key leader interviews (KLIs) and two focus groups between September and November 2025 to gather insights from community members across Merced County. The KLIs and focus groups were designed to capture lived experiences, transportation challenges, and community needs to inform the broader HEJA analysis and support MCAG in strengthening relationships with underserved communities.

Key leader interviewees were selected for their extensive experience, often spanning decades working with vulnerable and disadvantaged populations in Merced County, including agricultural workers, Hmong residents, unincorporated community members, and low-income residents. Their deep community ties enabled them to speak to both shared experiences and broader trends, as well as key differences across geographic areas and population groups.

The KLIs also served as an opportunity to educate community leaders who were less familiar with regional transportation planning about the RTP's frequency, purpose, and engagement opportunities. Interviews were conducted remotely via Zoom with representatives from seven organizations: Leadership Counsel for Justice & Accountability, Líderes Campesinas, Hlub Hmong Center, Tres Comunidades Unidos/California Rural Legal Assistance, North Valley Thrive/Merced County Workforce Development Board, the Interagency Transportation Equity Advisory Committee, and the Merced County Community Action Agency.

Two in-person focus groups were conducted with community members: one with parents of probation-involved youth through Pathways to Success (20 participants) and another with teenagers from Le Grand High School and surrounding areas (18 participants).
The semi-structured discussion format encouraged participants to share their experiences, helping MCAG better understand key transportation challenges and opportunities faced by communities experiencing barriers.

Across these discussions, several consistent areas of concern emerged, particularly among disadvantaged and vulnerable populations, including agricultural workers, members of the Hmong community, and low-income residents. Safety concerns were frequently cited as a deterrent to using public transit and active transportation. Extreme weather conditions and inadequate infrastructure further restrict access, while limitations in transit reliability and service convenience reduce usability. Participants also noted gaps in infrastructure maintenance and broader economic constraints that affect affordability and access to essential goods and services. Collectively, these factors highlight interconnected challenges related to mobility, accessibility, and overall quality of life.

Regional Transportation Plan Roundtable Committee

The RTP Roundtable serves as an advisory committee dedicated to shaping the development of the 2026

RTP/SCS. Comprising representatives from local jurisdictions, key stakeholders, and other engaged community members across Merced County, the Roundtable provides valuable input throughout the planning process. In addition to providing feedback, the Roundtable also votes on the selection of the social equity analysis methodology and reviews preliminary analysis results to help guide technical decisions. A total of 8 meetings were held bimonthly in most of 2025 and early 2026.

Identification of Merced County Disadvantaged Communities

Building on the findings from the HEJA and the community engagement process described above, MCAG identified key areas of equity concern through a bottom-up approach grounded in community input. Insights from the engagement process informed the development of a tiered framework for identifying disadvantaged communities, reflecting varying levels of need and priority across the region.

MCAG classifies three tiers of disadvantaged communities using the indicators shown in Table 3-74. These indicators integrate qualitative insights from community engagement with quantitative data to support a more comprehensive and context-sensitive equity analysis.

TABLE 3-74

Disadvantaged Communities Identification Indicators

Indicator	Vulnerable Community	Disadvantaged Community	Severely Disadvantaged Community
Socioeconomic Disadvantage	X	X	X
Concentration of Residents of Color (i.e., any race other than White alone and/or Hispanic)	X	X	X
Concentration of Linguistically Isolated Households (defined as: no one in the household older than 4-years-old speak English 'very well')	X		
Cumulative Pollution Burden	X		
Percent of County's Total Population Living in Area	90%	82%	29%

Vulnerable Communities

At the census tract level, vulnerable communities are defined as areas where median household income is

below 80 percent of the county median income or where 70 percent or more of residents are persons of color (reference Figure 3-26). These communities also experience significant linguistic isolation, defined as either more than 20 percent of households being linguistically isolated with at least 250 affected households, or 400 or more linguistically isolated households regardless of percentage. Vulnerable communities also exhibit elevated environmental burdens, scoring above the 75th percentile for cumulative pollution burden in CalEnviroScreen 4.0 or above the 80th percentile for PM2.5 exposure (reference Figure 3-27).

FIGURE 3-26
Methodology for Identifying Vulnerable Communities

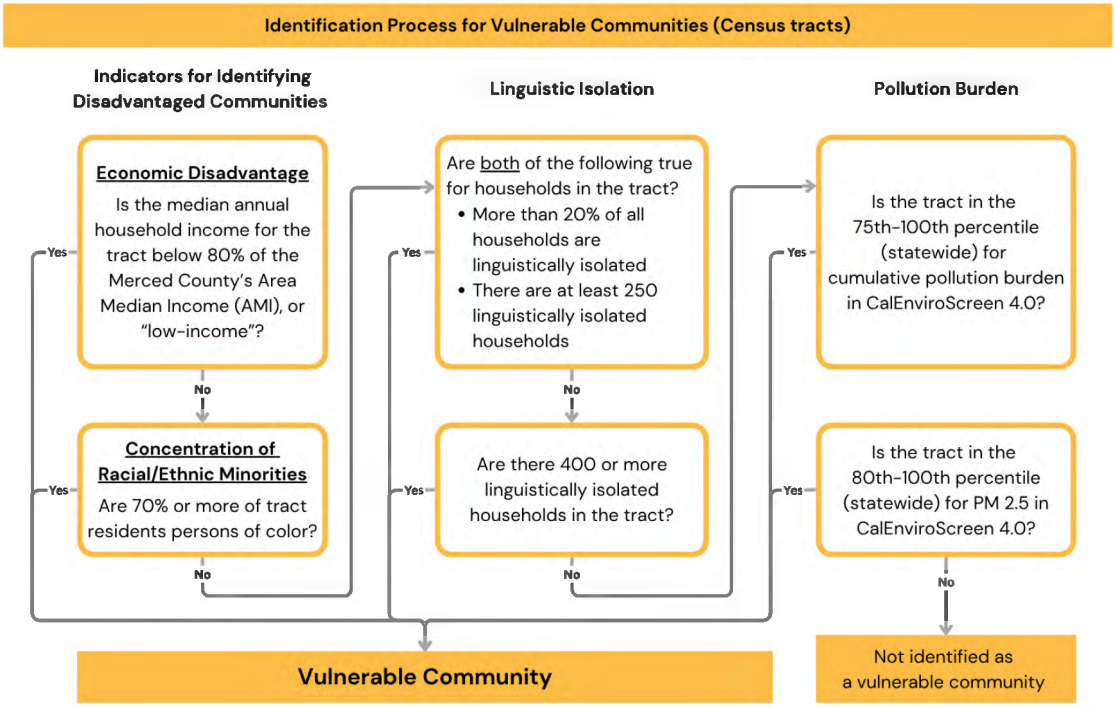
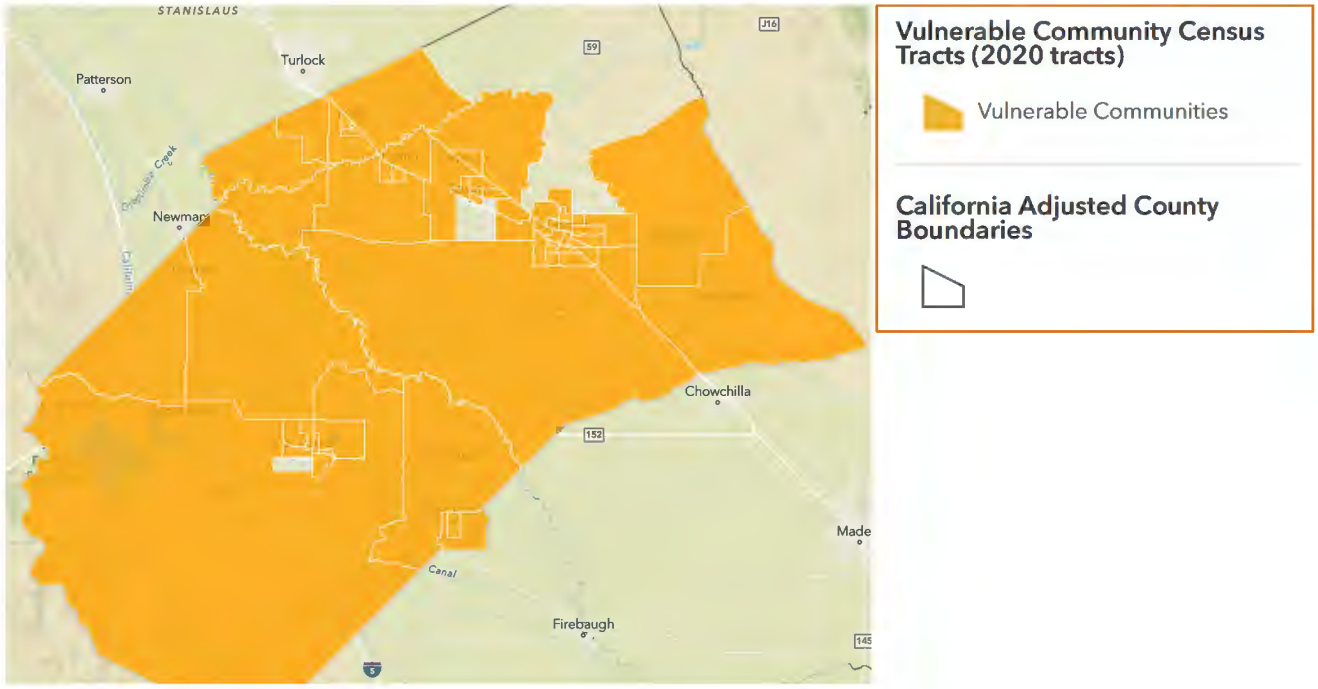


FIGURE 3-27
Vulnerable Community Tracts

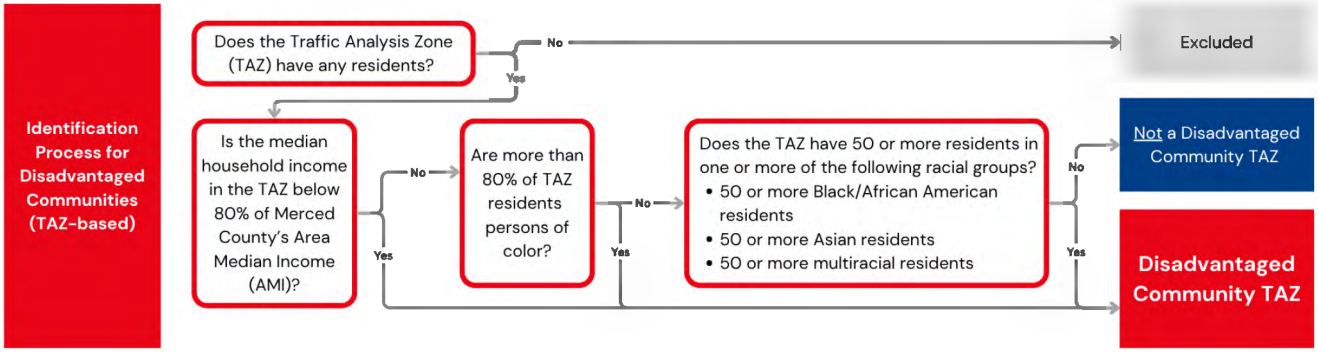


Disadvantaged Communities

Traffic Analysis Zones (TAZs) are the geographic unit of analysis used in transportation modeling, including the RTP/SCS. TAZs are smaller than both Census tracts and Census block groups and enable MCAG's Travel Demand Model to calculate more precise estimates.

Defined at the TAZ level as having a median household income below 80 percent of Merced County's area median income, more than 80 percent persons of color, and at least 50 residents from one of the following groups: Black/African American, Asian, or multiracial (reference Figure 3-28).

FIGURE 3-28
Methodology for Identifying Disadvantaged Communities



Severely Disadvantaged Communities

Defined at the TAZ level, severely disadvantaged communities are those that first meet the criteria for a disadvantaged community and also satisfy one of the following conditions: the TAZ has a median household income below 50 percent of Merced County's area median income; the TAZ falls within the top quintile for percentage of residents of color, with more than 87 percent of residents identifying as persons of color; **or** the TAZ has a median household income between 50 and 80 percent of the county's area median income and at least 80 percent of residents are persons of color (reference Figure 3-29 and 3-30).

Most disadvantaged TAZs have more than 80 percent residents of color—but are not 100 percent residents of color. Median household income means half of resident households make less than it and half make more than it, so TAZs with a median income higher than the 80 percent AMI may still have some resident households that make less than 80 percent AMI each year.

Note: Some residents of disadvantaged TAZs are white non-Hispanic residents who have moderate or high income, and some socioeconomically disadvantaged residents and residents of color live in TAZs that are *not* identified as vulnerable or disadvantaged.

FIGURE 3-29

Methodology for Identifying Severely Disadvantaged Communities

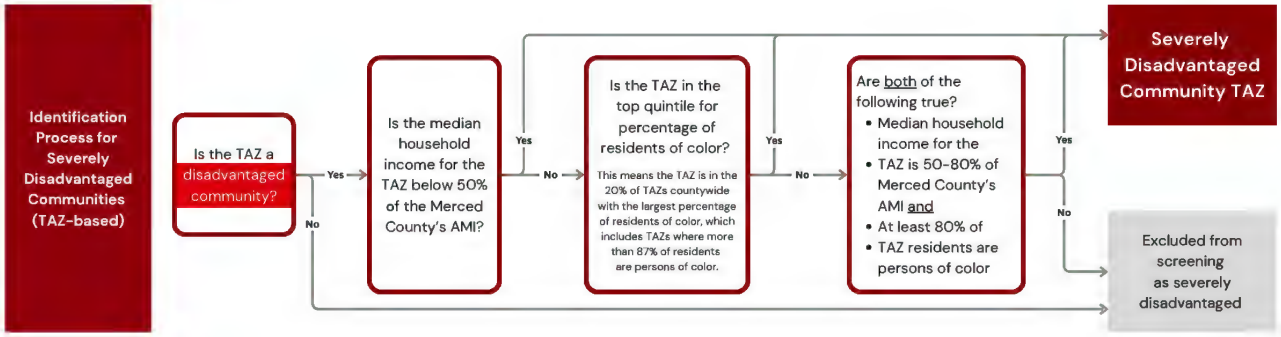
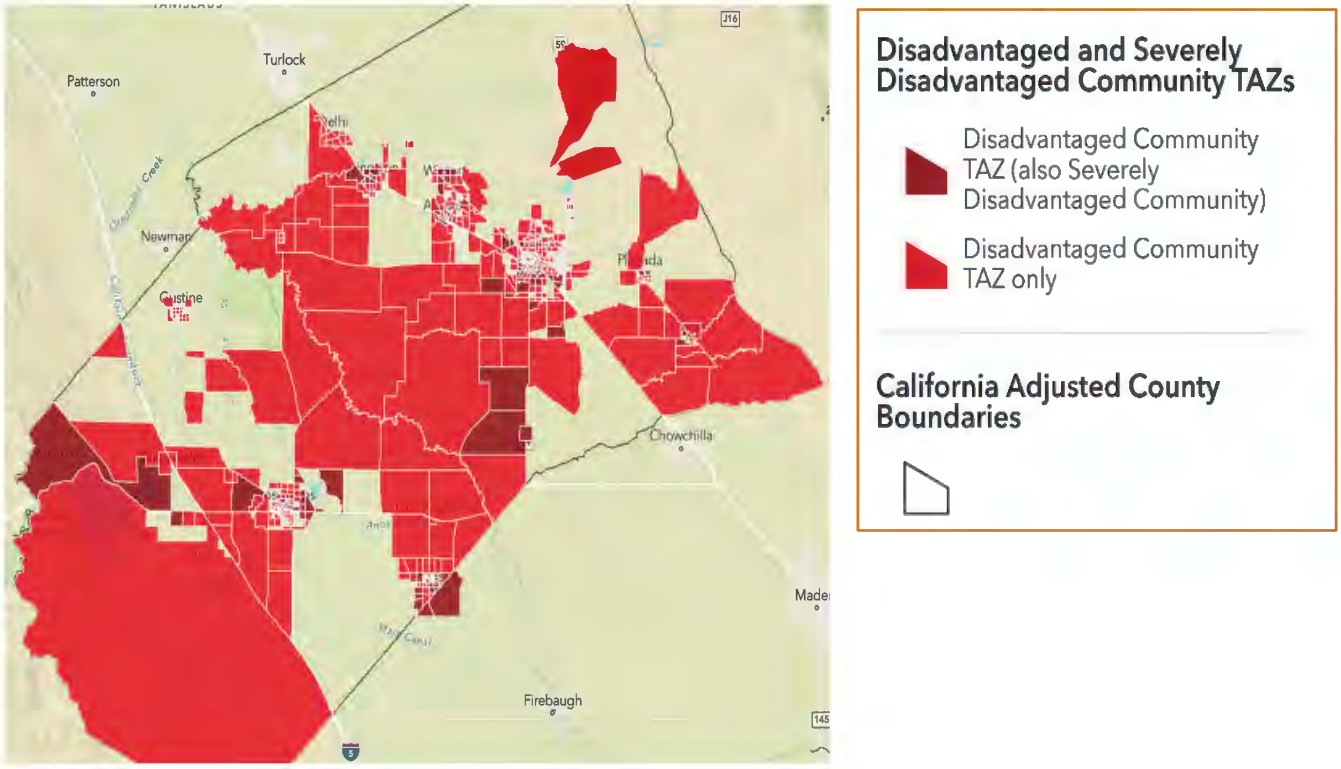


FIGURE 3-30

Disadvantaged and Severely Disadvantaged Community TAZs



The vulnerable communities, disadvantaged communities, and severely disadvantaged communities maps were approved by the Merced County Association of Governments MCAG RTP Roundtable

Committee in February 2026 and by the Governing Board in March 2026 as part of MCAG's Health and Environmental Justice Analysis.

Social Equity Analysis Results

The Social Equity Analysis evaluates the benefits and burdens of the transportation investments included in the 2026 RTP/SCS to ensure that disadvantaged and severely disadvantaged communities in Merced County share equitably in the Plan's benefits and are not disproportionately impacted by its burdens.

To systematically measure the benefits and burdens of programmed 2026 RTP/SCS projects on different communities, the RTP Roundtable reviewed and approved the following four quantitative performance measures. These measures were selected to capture a range of transportation outcomes — from mobility and access to environmental exposure and infrastructure investment — that most directly affect the daily lives of Merced County residents:

- ✓ Access to Jobs and Services
- ✓ Air Toxin Exposure
- ✓ Transportation Investment per Capita
- ✓ Distribution of Active Transportation Projects

MCAG utilized the Travel Demand Model to quantitatively analyze these measures for programmed 2026 RTP/SCS projects and compared outcomes between DAC communities — including Disadvantaged TAZs and Severely Disadvantaged TAZs — and non-DAC communities, which include all remaining TAZs.

Access to Jobs and Services

Description:

Access to Jobs and Services is defined as the ability to move throughout the region. It is measured by the time it takes to reach desired destinations from one's home during the morning commute hours. Jobs and services were defined as major job centers, medical facilities, retail facilities, schools, and other essential destinations.

Methodology:

This indicator measures the ease of reaching desired destinations during the morning hours. Average morning travel times are calculated using MCAG's Travel Demand Model (reference Table 3-75).

Table 3-75
Average Morning Travel Time in 2035 (Minutes)

DAC Areas	Non DAC Areas
20.30	21.75

As shown in Table 3-75, the DAC areas will have slightly shorter travel time than the non-DAC areas in 2035 and 2049 as a result of the investment from the 2026 RTP/SCS. While the difference in travel times between DAC and non-DAC areas is modest, the results indicate that implementation of the RTP/SCS is not expected to create disproportionate barriers to regional mobility for disadvantaged populations. Instead, the planned transportation network is anticipated to support equitable access to jobs and essential services, helping ensure that residents of disadvantaged communities can benefit from the region's economic and social opportunities.

Air Toxics Exposure

Description

Merced County, along with many other counties in the San Joaquin Valley, is located within a federally designated nonattainment area for the National Ambient Air Quality Standards (NAAQS). Vehicle emissions are the most significant source of air pollution, especially in densely traveled urban areas. Research has shown that people living near freeways may face higher rates of asthma, respiratory illness, reduced lung function, and cardiovascular disease. Air toxics pollution, such PM 2.5, was also identified as a key community concern through outreach and analysis conducted as part of the Health and Environmental Justice Analysis.

Methodology

Roadways with projected daily traffic volumes of 10,000 vehicles or more are identified as major sources of air toxics emissions, and areas within 500 feet of these roadways are considered exposure zones for vehicle tailpipe pollutants.

Analysis results shown in Tables 3-76 and 3-77 indicate that slightly more new housing units located within DAC areas are within air toxics exposure zones than new housing units in the non-DAC areas. However, the proportion of new housing units within these zones is expected to decrease over time. Between 2035 and 2049, the share of new housing units located within exposure zones declines from 7.9 percent to 4.9 percent in DAC areas.

TABLE 3-76

Percent of New Housing Units from 2023-2035 Within Air Toxics Exposure Zone

DAC Areas	Non DAC Areas
7.9%	2.4%

TABLE 3-77
Percent of New Housing Units from 2023-2049 Within Air Toxics Exposure Zone

DAC Areas	Non DAC Areas
4.9%	2.6%

Several strategies included in the 2026 RTP/SCS are intended to help mitigate the impacts of air toxics on residents of DAC areas, including investments that support transit, active transportation, and reduced reliance on single-occupancy vehicle travel. The location of future housing near major transportation corridors is also consistent with the SCS, which seeks to concentrate growth in areas with access to existing and planned transportation options, including transit services. In addition, transportation-related air toxics emissions are expected to decline over the planning horizon as California transitions toward zero-emission vehicles. California's Executive Order N-79-20 requires all new passenger car and light-duty truck sales to be zero-emission by 2035, while the California Air Resources Board's Innovative Clean Transit Regulation requires public transit agencies to transition to fully zero-emission bus fleets by 2040. As the share of zero-emission vehicles increases, exposure risks associated with living near major transportation corridors are expected to decrease.

Transportation Investment per Capita

Description

Transportation investment per capita measures the distribution of RTP/SCS transportation investments relative to population across DAC areas and non-DAC areas. This indicator is used to evaluate the relative allocation of transportation resources to provide context on how overall and project-specific investments are distributed across communities. In addition to total spending, the analysis examines how investments vary by project type to better understand the nature of transportation improvements across different geographies.

Methodology

Transportation projects included in the 2026 RTP/SCS were spatially assigned to DAC and non-DAC areas based on their locations. Total transportation expenditures from 2023 through 2049 were aggregated by geography and used to calculate total and per-capita spending based on the projected 2049 population, as shown in Table 3-78.

Projects were also categorized by major investment type, including maintenance and operations, bike and pedestrian, capacity-increasing, non-infrastructure, and other projects. Spending totals and percentages were calculated for each project type by geographic area (DAC versus non-DAC) to evaluate the distribution of investment priorities across project categories (Table 3-79).

TABLE 3-78

Transportation Investment by Project Type (in $1,000s from 2023 – 2049)

Project Type	Total	% Within DAC	DAC Total
Maintenance and Operations	$1,830,701	66%	$1,212,127
Bike and Pedestrian	$506,078	75%	$377,628
Capacity Increasing	$1,041,693	84%	$879,565
Non-Infrastructure	$17,256	58%	$9,999
Other	$68,747	26%	$17,536
Gross Spending	$3,464,475	72%	$2,496,855

TABLE 3-79

Transportation Investment Per Capita (in $1,000s from 2023-2049)

	DAC Areas	Non DAC Areas	Total
Transportation Investment	$2,496,855	$967,620	$3,464,475
Population in 2049	271,246	59,542	330,788
Per Capita	$9.20	$16.25	$10.47

Higher proportions of spending in DAC areas are observed for projects that expand multimodal transportation options, including bike and pedestrian improvements (75 percent) and capacity-increasing projects (84 percent). These investments indicate a concentration of both active transportation and system expansion projects in communities with higher equity-priority designations. Non-infrastructure investments also show a majority share in DAC areas (58 percent), reflecting ongoing support for programs and planning activities. Overall, approximately 72 percent of total RTP/SCS transportation spending is allocated to DAC areas, consistent with the distribution of population and transportation needs across the region.

Per capita spending indicates that Non-DAC areas receive higher levels of investment per resident. However, transportation investments in the RTP/SCS are distributed across multiple project types, with varying allocations to DAC areas. As shown in Table 3-78, a substantial share of RTP/SCS funding in DAC areas (approximately $1.21 billion, or 66 percent of total spending) is dedicated to maintenance and operations. These investments support system preservation and mobility services that directly benefit residents of disadvantaged communities.

While the majority of total RTP/SCS funding is directed to DAC communities, the higher per capita spending observed in Non-DAC areas is largely due to the relatively small population in those mainly rural

areas. Additionally, many roads located in Non-DAC areas serve residents throughout the region, including those living in DAC communities, by providing access to jobs, education, healthcare, and other essential destinations. As a result, the benefits of these maintenance projects extend beyond the areas where they are physically located.

Distribution of Active Transportation Projects

Description

Expanding active transportation infrastructure is important because it improves access to safe, reliable mobility options and supports public health outcomes. Bicycle and pedestrian facilities encourage physical activity, improve connectivity to essential destinations, and can help reduce vehicle emissions and associated air pollution, particularly in disadvantaged communities that often have limited transportation options. This indicator compares the lane miles programmed for bicycle and pedestrian projects in the 2026 RTP between DAC and non-DAC areas (reference Table 3-80 and Figure 3-31).

Methodology

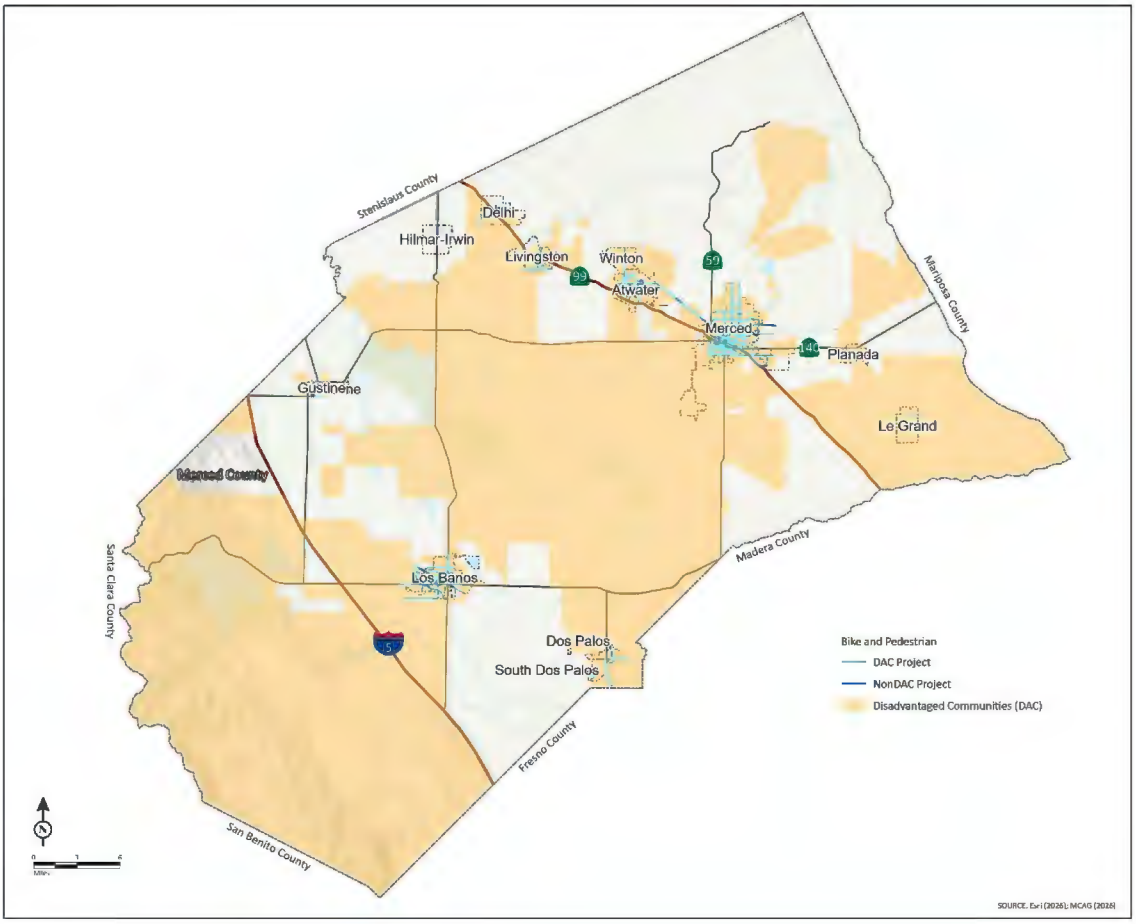
This analysis compares the lane miles of bicycle and pedestrian projects programmed in the 2026 RTP among disadvantaged communities and non-disadvantaged communities.

TABLE 3-80

Active Transportation Projects Expected to Be Built (Lane Miles, 2023–2049)

DAC	Non DAC Areas
113.79	12.93

FIGURE 3-31
Bike and Pedestrian Projects (2023-2049)



The results shown in Table 3-80 and Figure 3-29 indicate that DAC areas within Merced County are anticipated to receive approximately 114 lane miles of bicycle and pedestrian facilities by the 2049 horizon year, compared to approximately 13 lane miles in non-DAC areas. This represents roughly 780 percent more active transportation infrastructure in DAC areas. The distribution of projects is consistent with California's emphasis on directing active transportation investments toward disadvantaged communities through programs such as the Active Transportation Program (ATP). These results suggest that disadvantaged communities are expected to receive a substantial share of the benefits associated with improved bicycle and pedestrian connectivity, accessibility, and safety.

Conclusion

The Social Equity Analysis demonstrates that disadvantaged communities in Merced County are expected to benefit from the investments in the 2026 RTP/SCS. Across all four performance measures, DAC areas perform comparably to or better than non-DAC areas. DAC communities are projected to benefit from

slightly shorter average commute times by 2035, receive more total transportation investment, a substantial share of the overall investments in the RTP/SCS, and significantly more miles of bicycle and pedestrian infrastructure. Although there will be slightly more future housing in the DAC areas exposed to transportation-related air pollution than in the non-DAC areas, EV penetration in California will reduce exposure to air pollution near major roadways.

These findings reflect the 2026 RTP/SCS's commitment to equitable transportation planning and investment. The results of this analysis indicate that the RTP/SCS does not have disproportionately high or adverse impacts on DAC communities, and that the benefits of regional transportation investment are distributed in ways that support improved mobility, accessibility, public health, and quality of life for all residents. Overall, the analysis demonstrates that the 2026 RTP/SCS advances the region's vision of a safe, efficient, reliable, and sustainable transportation system that serves the needs of all communities.

Impact SE 3.16.1 – Construction impacts on minority and low-income populations

Construction of some improvement projects will be located in areas with minority and low-income populations.

The improvement and future land use development projects may have direct, short-term impacts on surrounding communities related to construction, including noise, air quality, and traffic. However, none of these projects is expected to have a disproportionate impact on minority or low-income communities**.** The Project is designed to serve the entire population of the County, and the transportation and future land use development projects are dispersed throughout the region.

While many transportation and future land use development projects are located in urban areas where a higher proportion of low-income and minority communities live, more existing transportation routes and facilities are located in those areas. Since more of the existing facilities are located in those areas, major improvements to address existing deficiencies and accommodate projected population growth are also needed there.

Furthermore, MCAG works with cities, counties, and other implementing agencies to encourage improvement projects that serve those communities with the greatest transit needs, such as low-income or minority communities in urban core areas. The location, design, and alignment of transportation facilities and routes are planned to reduce potential impacts to the extent feasible and to ensure that, if impacts occur, they do not disproportionately affect low-income or minority populations.

Numerous construction sites for individual improvement and future land use development projects throughout the region may experience short-term noise, air quality, and traffic impacts. Mitigation measures have been identified in Sections 3.4, 3.12, and 3.14 to minimize potential impacts and protect

sensitive uses that may be located near the individual improvement and future land use development project sites, including low-income and minority communities.

It is not anticipated that minority and low-income communities would be disproportionately and adversely affected. As a result, short-term impacts are considered less-than-significant.

The Population and Housing section identified potential construction impacts resulting from implementation of the Project that would remain significant and unavoidable after mitigation due to the potential displacement or relocation of homes and businesses. This section also found that some transportation and future land use development projects have the potential to disrupt or divide a community by separating community facilities, restricting community access, and eliminating community amenities. In addition, the Land Use section identified potential impacts to sensitive receptors, including residences, educational facilities, medical facilities, and places of worship, that would remain significant and unavoidable after mitigation.

It is not anticipated that minority and low-income communities would be disproportionately and adversely affected, as compared to other communities. As a result, long-term impacts are considered less-than-significant.

Mitigation Measures

- ✓ Impact is considered less-than-significant; no mitigation is required.

Significance After Mitigation

- ✓ Not applicable.

Impact SE 3.16.2 – Operational impacts on low-income and minority populations

Some improvements and future land use development projects will be implemented in areas with low-income and minority populations.

The improvement and future land use development projects are designed specifically to improve transit accessibility, address existing deficiencies, including congestion, and accommodate projected population growth to the extent feasible within the existing funding constraints. As discussed previously, the improvement projects are located throughout the region and are not disproportionately concentrated in low-income or minority areas. (There are more transportation improvements, and future land use development projects are planned for urban areas. This is because more transportation facilities and

services are located in those areas serving large concentrations of people. As a result, these facilities need improvements and maintenance to continue serving the rapidly growing urban populations.

The RTP/SCS will improve the transportation system through a variety of projects. These improvements are intended to improve traffic flow and reduce congestion, and to address existing deficiencies associated with the projected population increases. A beneficial impact of the Project will be greater transit accessibility for low-income and minority residents. These improvements are particularly important for low-income and minority communities, as these groups typically rely on public transit to a much greater extent than higher-income communities. Improvements will also allow more people in the region to reduce their dependence on automobiles and will provide enhanced connections to employment and housing.

It is anticipated that the improvement projects will increase accessibility and address existing problems with the transportation network. The projects are not expected to disproportionately affect low-income communities, since they are dispersed throughout the region and designed to improve transportation facilities where they are needed most. As a result, this impact is considered less-than-significant.

Mitigation Measures

- ✓ Impact is considered less-than-significant; no mitigation is required.

Significance After Mitigation

- ✓ Not applicable.

3.17 TRANSPORTATION

Implementation of the Project will improve existing regional transportation and circulation systems. Proposed improvements are intended to meet the region's transportation needs. Proposed street and highway programs aim to reduce existing traffic and other transportation/circulation conflicts, as well as the resulting accident hazards. Implementation of planned improvements to the street and highway network, improvements to County airports, provision of public transit facilities, identification of additional bikeways and pedestrian improvements, and improved transportation systems that accommodate goods movement will have beneficial effects on a region-wide basis to address the 2026 RTP/SCS objectives.

Regulatory Setting

Federal Regulations

- ✓ **U.S. Environmental Protection Agency (EPA) and Federal Clean Air Act (CAA)** - The Federal Clean Air Act, first adopted in 1967 and periodically amended since then, established federal ambient air quality standards. An 1987 amendment to the Bill set a deadline for the attainment of these standards. That deadline has since passed. The other CAA Bill Amendments, passed in 1990, share responsibility with the State in reducing emissions from mobile sources. The U.S. Environmental Protection Agency (EPA) is responsible for enforcing the 1990 amendments.

  CAA Section 176(c) (42 U.S.C. 7506(c)) and EPA transportation conformity regulations (40 CFR 93 Subpart A) require that each new RTP and Transportation Improvement Program (TIP) be demonstrated to conform to the State Implementation Plan (SIP) before the RTP and TIP are approved by the Metropolitan planning organization (MPO) or accepted by the U.S. Department of Transportation (DOT). The conformity analysis is a federal requirement designed to demonstrate compliance with the national ambient air quality standards.

- ✓ **National Environmental Policy Act (NEPA) -** The National Environmental Policy Act (NEPA) provides general information on the effects of federally funded projects. The act was implemented through regulations in the Code of Federal Regulations (40 CFR 6). The code requires careful consideration concerning the environmental impacts of federal actions or plans, including projects that receive federal funds. The regulations address impacts on land uses and conflicts with state, regional, or local plans and policies, among others. They also require that projects subject to NEPA review seek to avoid or minimize adverse effects of proposed actions and to restore and enhance environmental quality as much as possible.

- ✓ **Infrastructure Investment and Jobs Act/Bipartisan Infrastructure Law (BIL) -** On November 15, 2021, President Biden signed the Infrastructure Investment and Jobs Act (IIJA) (Public Law 117-58, also

known as the "Bipartisan Infrastructure Law") into law. The Bipartisan Infrastructure Law is the largest long-term investment in our infrastructure and economy in our Nation's history. It provides $550 billion over fiscal years 2026 through 2026 in new Federal investment in infrastructure, including roads, bridges, and mass transit, water infrastructure, resilience, and broadband.

With respect to the Metropolitan Planning Program, the BIL continues many of the programs and regulations established under the Fixing America's Surface Transportation (FAST) Act and the Moving Ahead for Progress in the 21st Century Act (MAP-21). Some key changes are noted below:

- The BIL requires each MPO to use at least 2.5% of its PL funds (and each State to use 2.5% of its State Planning and Research funding under 23 U.S.C. 505) on specified planning activities to increase safe and accessible options for multiple travel modes for people of all ages and abilities. A State or MPO may opt out of the requirement, with the approval of the Secretary, if the State or MPO has Complete Streets standards and policies in place and has developed an up-to-date Complete Streets prioritization plan that identifies a specific list of Complete Streets projects to improve the safety, mobility, or accessibility of a street. For the purpose of this requirement, the term "Complete Streets standards or policies" means standards or policies that ensure the safe and adequate accommodation of all users of the transportation system, including pedestrians, bicyclists, public transportation users, children, older individuals, individuals with disabilities, motorists, and freight vehicles.
- The BIL requires the United States Department of Transportation to amend Federal regulations to define a metropolitan transportation plan's outer year as beyond the first four years.
- The BIL requires an MPO that serves an area designated as a transportation management area, when designating officials or representatives for the first time and subject to the MPO's bylaws or enabling statute, to consider the equitable and proportional representation of the population of the metropolitan planning area.
- The BIL allows MPOs to use social media and other web-based tools to encourage public participation in the transportation planning process.

The BIL makes several changes to include housing considerations in the metropolitan transportation planning process, including:

- updating the policy to include, as items in the national interest, encouraging and promoting the safe and efficient management, operation, and development of surface transportation systems that will better connect housing and employment;
- adding officials responsible for housing as officials with whom the Secretary shall encourage each MPO to consult;
- requiring the metropolitan transportation planning process for a metropolitan planning area to provide for consideration of projects and strategies that will promote consistency between transportation improvements and State and local housing patterns (in addition to planned growth and economic development patterns);

- adding assumed distribution of population and housing to a list of recommended components to be included in optional scenarios developed for consideration as part of the development of the metropolitan transportation plan;
- adding affordable housing organizations to a list of stakeholders MPOs are required to provide a reasonable opportunity to comment on the metropolitan transportation plan; and
- within a metropolitan planning area that serves a transportation management area, permitting the transportation planning process to address the integration of housing, transportation, and economic development strategies through a process that provides for effective integration, including by developing a housing coordination plan.

✓ **Metropolitan Planning General Requirements –** Under BIL, as previously established in MAP-21, the U.S. Department of Transportation (USDOT) requires that metropolitan planning organizations, such as MCAG, prepare long-range transportation plans (RTPs) and update them every four years if they are in areas designated as "nonattainment" or "maintenance" for federal air quality standards. Prior to the enactment of MAP-21, the primary federal requirements regarding RTPs were set forth in the metropolitan transportation planning rules, 23 CFR Part 450 and 49 CFR Part 613. Key federal requirements for long-range plans include the following:

- RTPs must be developed through an open and inclusive process that ensures public input; seeks out and considers the needs of those traditionally underserved by existing transportation systems; and consults with resource agencies to ensure potential problems are discovered early in the RTP planning process.
- RTPs must include a financially constrained element, transportation revenue assumptions must be reasonable, and the long-range financial estimate must account for construction-related inflation costs.
- RTPs must include a description of the performance measures and targets used to assess the transportation system's performance.
- RTPs must include a system performance report that evaluates the system's condition and performance against state-adopted performance targets, and details progress over time.
- RTPs may include multiple scenarios for consideration and evaluation relative to state performance targets and locally developed measures.
- RTPs must conform to the applicable federal air quality plan, called the State Implementation Plan (SIP), for ozone and other pollutants for which an area is not in attainment; and
- RTPs must consider planning factors and strategies in the local context.

✓ **Transportation Security Administration (TSA) -** The TSA is responsible for the security of the nation's transportation system. Highways, railroads, buses, mass transit systems, and ports are all monitored by the TSA in conjunction with state, local, and regional partners to ensure safety. The TSA focuses most of its resources on aviation security.

State Regulations

- ✓ **California Environmental Quality Act (CEQA) -** CEQA defines a significant impact on the environment as a substantial, or potentially substantial, adverse change in the physical conditions within the area affected by the individual improvement project. Land use is a required impact assessment category under CEQA. CEQA documents generally evaluate land use in terms of compatibility with existing land uses and consistency with local general plans and other local land use controls (zoning, specific plans, etc.).

- ✓ **Senate Bill 226 –** In 2011, Senate Bill 226 (SB 226) was passed by the legislature and signed into law. SB 226 revises the CEQA Guidelines, advancing an efficient review process for infill projects and establishing performance standards to determine an infill project's eligibility for that review. One of the requirements for streamlined review demands that the project be consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy.

- ✓ **2013 Zero Emission Vehicle Action Plan -** Governor Brown issued Executive Order B-16-2012 in 2012, which calls for the rapid commercialization of zero emission vehicles (ZEV). The goal of this Executive Order is to have 1.5 million ZEVs on California's roads by 2025. The order targets the transportation sector and calls for a reduction of GHG emissions to 80 percent below 1990 levels by 2020.

- ✓ **California Transportation Commission Regional Transportation Plan Guidelines -** The CTC publishes and periodically updates guidelines for the development of long-range transportation plans. Pursuant to Government Code Section 65080(d), each nonattainment regional transportation planning agency (RTPA) is required to adopt and submit an updated regional transportation plan (RTP) to the California Transportation Commission (CTC) and the Department of Transportation (Caltrans) at least every four years and attainment RTPAs every five years.

  Under Government Code Section 14522, the CTC is authorized to prepare guidelines to assist in preparing RTPs. The CTC's RTP guidelines suggest that projections used in the development of an RTP should be based upon available data (such as from the Bureau of the Census), use acceptable forecasting methodologies, and be consistent with the Department of Finance baseline projections for the region. The guidelines further state that the RTP should identify and discuss any differences between the agency projections and those of the Department of Finance.

  The most recent update to the RTP guidelines was published in 2024 and includes updates to State Climate Change Legislation and Executive Orders, as well as guidance on the applicability of the RTP Guidelines. It also describes Senate Bill 743 and the anticipated future change to transportation analysis for transit priority areas.

- ✓ **AB 32 (California Global Warming Solutions Act of 2006) -** California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599), which established regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and established a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be achieved by enforcing a statewide cap on GHG emissions, phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

  AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions sufficient to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in larger, growing GHG sectors, such as transportation, than in sectors not anticipated to significantly increase emissions. Under AB 32, CARB was required to adopt regulations by January 1, 2011, to achieve reductions in GHGs to meet the 1990 emission cap by 2020.

  On December 11, 2008, CARB adopted its initial Scoping Plan, which serves as a roadmap for CARB's efforts to achieve the GHG reductions required by AB 32 through regulations subsequently enacted. CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan. The current plan has identified new policies and actions to accomplish the State's 2030 GHG limit.

- ✓ **California Global Warming Solutions Act of 2006: emissions limit**, or **SB 32** – SB 32 is a California Senate bill expanding upon AB 32 to reduce greenhouse gas (GHG) emissions. The lead author is Senator Fran Pavley, and the principal co-author is Assembly member Eduardo Garcia. SB 32 was signed into law on September 8, 2016, by Governor Edmund Gerald "Jerry" Brown Jr. SB 32 sets the mandated reduction target for GHG emissions as outlined in Executive Order B-30-15. SB 32 requires a reduction in GHG emissions to 40% below 1990 levels by 2030. Greenhouse gas emissions include carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons. The California Air Resources Board (CARB) is responsible for ensuring that California meets this goal. The provisions of SB 32 were added to Section 38566 of the Health and

Safety Code subsequent to the bill's approval. The bill went into effect on January 1, 2017. SB 32 builds on Assembly Bill (AB) 32, written by Senator Fran Pavley and Assembly Speaker Fabian Nunez passed into law on September 27, 2006. AB 32 required California to reduce greenhouse gas emissions to 1990 levels by 2020, and SB 32 continues that timeline to reach the targets set in Executive Order B-30-15. SB 32 provides another intermediate target between the 2020 and 2050 targets set in Executive Order S-3-05.

- ✓ **Senate Bill 375 -** Sen. Bill No. 375 (Stats. 2008, Ch. 728) (SB 375) requires MPOs to prepare a Sustainable Communities Strategy (SCS) that demonstrates how the region will meet its greenhouse gas (GHG) reduction targets through integrated land use, housing, and transportation planning. Specifically, the SCS must identify a transportation network that is integrated with the forecasted development pattern for the plan area and will reduce GHG emissions from automobiles and light trucks in accordance with targets set by the California Air Resources Board. Sections 3-4 and 3-6 in this Chapter include more in-depth discussions of SB 375 and its implications for the proposed RTP.

- ✓ **Senate Bill 743 (SB 743) -** On September 27, 2013, Governor Brown signed Senate Bill 743 (Steinberg, 2013). Among other things, SB 743 establishes a process for changing the analysis of transportation impacts under CEQA. Currently, environmental review of transportation impacts focuses on the delay that vehicles experience at intersections and on roadway segments. That delay is measured using a metric known as "level of service," or LOS. Mitigation for increased delay often involves increasing capacity (i.e., the width of a roadway or size of an intersection), which may increase auto use and emissions and discourage alternative forms of transportation. Under SB 743, the focus of transportation analysis will shift from driver delay to the reduction of greenhouse gas emissions, the creation of multimodal networks, and the promotion of a mix of land uses.

  Specifically, SB 743 requires the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines (Title 14 of the California Code of Regulations sections and following) to provide an alternative to LOS for evaluating transportation impacts. Particularly within areas served by transit, those alternative criteria must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." Measurements of transportation impacts may include "vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated." OPR also has discretion to develop alternative criteria for areas that are not served by transit, if appropriate.

  Formal adoption of SB 743 into CEQA occurred in December 2018 with a required implementation date of July 1, 2020. CEQA evaluations conducted after July 1, 2020, now use vehicle miles traveled (VMT) as the performance measure for determining transportation impacts.

- ✓ **Executive Order (EO) B-32-15, Sustainable Freight Transport Initiative –** Governor Brown signed Executive order B-32-15 on July 17, 2015 to require the Secretary of the California State Transportation Agency, the Secretary of Cal/EPA, and the Secretary of the Natural Resources Agency to lead other relevant State departments including the CARB, the Caltrans, the California Energy Commission (CEC), and the Governor's office of Business and Economic Development to improve freight efficiency, transition to zero-emission technologies, and increase competition of the State's freight system.

- ✓ **Intelligent Transportation System (ITS) -** Intelligent Transportation System (ITS) incorporates the use of advanced applications to improve the safety and coordination of surface transport networks. ITS provides a non-traditional alternative to transportation applications and new infrastructure. As travel demand on road transport systems grows, there is a need to increase capacity and improve the systems through better management. Collaboration between transportation planning and operations is critical in metropolitan regions and high-volume corridors, where multiple jurisdictions, agencies, and service providers are responsible for the safety, security, and operation of transportation systems. The success of ITS depends on careful coordination and communication among all parties at all levels; it is equally important that there be a regional forum to achieve this effectively.

- ✓ **Assembly Bill 1358, the Complete Streets Act of 2008 (AB 1358) -** The California Government Code Section 65302 was amended by AB 1358 to require all substantive revisions to city and county Circulation Element include accommodations for all roadway users. This included bicyclists and pedestrians.

- ✓ **California Bicycle Transportation Act -** This act, passed in 1994, requires the adoption of a bicycle master plan by all cities and counties before being considered eligible to apply for funding from the Bicycle Transportation Account.

- ✓ **Senate Bill 1014** - The Clean Miles Standard and Incentive Program (SB 1014) requires the California Public Utilities Commission (CPUC) and California Air Resources Board (CARB) to establish and implement greenhouse gas emission reduction targets and goals for transportation network companies (TNCs). The State is establishing targets in 2021. TNCs will be required to develop GHG emission reduction plans beginning January 1, 2026, with targets and goals starting in 2023. In the proposed rulemaking, TNCs will be able to comply with the rule through any combination of electrification, reduction of miles without passengers, increased ridesharing, and optional credits.

- ✓ **Road Repair and Accountability Act of 2017 -** SB 1, also referred to as the Road Repair and Accountability Act of 2017, was signed into law on April 28, 2017, increasing transportation funding and instituting reforms. SB 1 includes an annual investment of $5.4 billion to repair roads, freeways, and bridges in communities throughout the state. SB 1 is intended to address a backlog of repairs and

upgrades to the state's transportation facilities, while simultaneously ensuring a sustainable travel network for the future. Funds from SB 1 are split equally between state and local investments.

- ✓ **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 focused on making California a national leader in active transportation (Caltrans 2025b). The ATP is administered jointly by the California Transportation Commission (CTC) and Caltrans and combines many federal and state funding streams previously used for bicycle and pedestrian safety and related purposes into a single funding stream. In 2017, the Road Repair and Accountability Act (SB 1) added approximately $100 million per year in additional funds for the program (SANDAG 2018a). The purpose of the ATP includes the following objectives:

  - Increase the proportion of biking and walking trips.
  - Increase safety for nonmotorized users.
  - Increase mobility for nonmotorized users.
  - Advance the efforts of regional agencies to achieve greenhouse gas reduction goals;
  - Enhance public health, including reducing childhood obesity, through projects eligible for funding under the Safe Routes to Schools program.
  - Ensure disadvantaged communities fully share in program benefits (25 percent of the program).
  - Provide a broad range of projects to benefit a wide range of active transportation users.

- ✓ **California Transportation Plan 2050 -** The California Transportation Plan 2050 (CTP 2050) provides a common framework for guiding transportation decisions and investments by all levels of government and the private sector. Statutorily mandated federal and state law require that Caltrans facilitate, develop, and prepare the CTP. The development of the CTP 2050 was a multi-year effort involving cross-sector coordination with State, regional, and local partners; extensive research; public engagement; technical analysis; and oversight from multiple committees. The CTP 2050 builds on concurrent efforts included in Caltrans' planning documents, RTPs, other statewide plans, and studies such as the 2017 Climate Change Scoping Plan, Strategic Highway Safety Plan, and Statewide Housing Assessment. It also draws on research on demographic shifts, technology trends, and economic growth to help clarify where the state is headed, what strategies can be employed, and what challenges and opportunities it may face along the way. To evaluate future conditions and plan benefits, the CTP 2050 employed a suite of technical tools and models to help inform policy decision-making. Caltrans will continue to work with stakeholders and the public to update the CTP every five years (Caltrans 2021a).

- ✓ **The California Freight Mobility Plan -** The California Freight Mobility Plan (CFMP) is a comprehensive plan that governs the immediate and long-range planning activities and capital investments by the state with respect to freight movement. The plan summarizes the ongoing state of freight in California and makes recommendations on further investments in freight mobility. The plan details short- and long-term policies, strategies, and investments for trucking, including parking, truck-only lanes, tolling, and autonomous trucks. The CFMP also complies with California State Government Code Section 13978.8(b)(1) (Assembly Bill 14, Lowenthal) and the provisions of United States Code 49 USC 70202: State freight plans (Infrastructure Investment and Jobs Act, or IIJA), which requires each state that receives funding under the National Highway Freight Program to develop a State Freight Plan every four years (Caltrans 2023).

- ✓ **Assembly Bill 130** - Assembly Bill 130 (AB 130) was signed into law in June 2025. The bill primarily focuses on incentivizing infill housing development in urban areas by exempting such projects from CEQA. AB 130 also requires that the California Governor's Office of Land Use and Climate Innovation (LCI) develop a mitigation fee program that allows projects to mitigate their associated VMT-related impacts by paying a fee to fund transit-oriented development and affordable housing throughout the state. The fees will be deposited into a fund administered by the Department of Housing and Community Development (HCD) that will fund VMT-reducing projects, including "affordable housing or related infrastructure projects, including infrastructure necessary for higher density uses." LCI is required to issue initial guidance on using this new mitigation by July 1, 2026, and to issue subsequent guidance at least once every three years, including starting the rulemaking process for any subsequent guidance by January 1, 2028.

- ✓ **Strategic Highway Safety Plan** - The California Strategic Highway Safety Plan (SHSP) is a comprehensive, statewide transportation safety plan that provides a collaborative framework for reducing fatalities and serious injuries across all travel modes and on all public roads. The SHSP uses a data-driven process to identify key safety needs and guide resource and investment decisions with the greatest potential to achieve the plan's goal of zero traffic fatalities and serious injuries on all of California's public roadways. Per the Federal Highway Administration, "A Strategic Highway Safety Plan (SHSP) is a major component and requirement of the Highway Safety Improvement Program (HSIP) (23 USC. § 148). It is a statewide-coordinated safety plan that provides a comprehensive framework for reducing highway fatalities and serious injuries on all public roads. (Caltrans 2020b).

- ✓ **Climate Action Plan for Transportation Infrastructure** - The Climate Action Plan for Transportation Infrastructure was adopted on July 12, 2021, and updated in January 2025 (CalSTA 2025). The Climate Action Plan for Transportation Infrastructure 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. The 2021 Climate Action Plan for Transportation Infrastructure was built 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% of all emissions, to reach the State's ambitious climate goals. The 2025 update includes new strategies and actions to further implement the existing investment framework (CalSTA 2025).

- ✓ **Director's Policy 37** - Caltrans Director's Policy 37 (DP 37) recognizes that walking, biking, transit, and passenger rail are integral to a vision of delivering a brighter future for all through a world-class transportation network. Accordingly, all transportation projects funded or overseen by Caltrans will provide comfortable, convenient, and connected Complete Streets facilities for people walking, biking, and taking transit or passenger rail, unless an exception is documented and approved. This policy establishes Caltrans's organizational priority to encourage and maximize walking, biking, transit, and passenger rail as a strategy to not only meet State climate, health, equity, and environmental goals but also to foster socially and economically vibrant, thriving, and resilient communities.

Regional and Local Statutes

- ✓ **Local Agency General Plans -** State law requires cities and counties to adopt general plans, which must include a transportation element. The transportation element describes the acceptable operating standards, levels of service, classifications, and transportation-related goals of a given city or county; it is typically a multimodal section that addresses roads, public transit, bicycle facilities, and pedestrian facilities. This EIR does not explicitly identify localized traffic issues that might be the focus of a city's general plan; rather, it will address overall system performance from a regional perspective.

- ✓ **City and County Modal Plans -** City- and county-wide bicycle and pedestrian master plans, active transportation plans, freight/goods movement plan, 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 standards, levels of service, facility classifications, and mode-specific goals and policies of a given city or county.

Environmental Setting

The existing conditions section for the transportation and circulation systems within Merced County has been broken down into six subsections and is generally described below. Further details regarding the existing systems, system needs, and system actions are provided in Chapter 2 of this EIR.

Multi-modal Transportation System

The planned transportation/circulation system provides the basic network used for the movement of goods and people in the region. Regional streets and highways are used by nearly all travel modes,

including automobiles, ridesharing vehicles, public and common carrier transit, intra- and interregional trucking, bicyclists, pedestrians, and other non-motorized modes of transportation. These systems must operate efficiently in order to reduce traffic congestion, improve air quality, and move people and goods safely.

The RTP systems consist of regional streets and roads, including federal interstate and State highways, regional arterials, and other regional street and road facilities. The RTP also addresses the needs of future transportation/circulation systems, including mass transportation, aviation, non-motorized, and goods movement. A list of planned improvement projects for each of these systems is provided in the RTP, and that list is included in Section 2 of this Draft EIR. These planned projects are considered "financially constrained"; therefore, the likelihood of implementation prior to the horizon year of 2049 is assumed. The impact analysis of each mode on the planned transportation/circulation system is provided below. The analysis was developed with the assumption that only financially constrained projects would be implemented during the life of the Project.

The sprawling pattern commonly associated with California transportation networks provides fewer modal options to commuters. Multimodal efforts in Merced County focus on improving existing conditions and creating environmentally favorable travel patterns. Based on information provided in the RTP, transportation planning has relied heavily in the past on the analysis of separate, discrete transportation modes. However, as the County tries to address congestion and air pollution, there is a growing awareness that solutions must be evaluated within the context of an integrated system rather than by individual modes alone. This systematic look at the region's capabilities encourages analysis and planning to examine transportation systems that can meet the needs of travel and the movement of goods. This approach is helped by looking at the characteristics of our region, which may affect travel demands, including but not limited to those that follow:

- ✓ Merced is the major population center for the County.
- ✓ State Route 140 is a key access roadway to Yosemite National Park, one of the two most visited national parks in the nation. More than 5 million people visited Yosemite National Park in 2016, 93% of whom came by automobile.
- ✓ As a large producer of farm commodities, Merced County has a strong "farm-to-market" travel demand affecting local roads and the state highway system. Freight movement occurs throughout the County, as farm, agricultural, and other commodities are brought to market on interregional routes.
- ✓ The county is crossed by two north-south corridors, Freeway 99 and Interstate 5, each of which is vital to the statewide transportation network.
- ✓ Recreational trips are served by several state highways: Routes 99, 132, and 140, and Interstate 5.
- ✓ Amtrak serves Merced and is experiencing increasing ridership, despite limited rail service to Sacramento and a lack of service to Southern California. Merced also serves as the rail transfer point for Amtrak bus services to Yosemite National Park.

- ✓ While the distances between destinations and low housing densities have encouraged automobile travel, there are still both urban and rural populations that rely on public transit service. The transit systems are responsible for meeting State and Federal farebox and ridership requirements.
- ✓ The climate and terrain are compatible with bicycle ridership for short commutes and recreational trips.
- ✓ Existing rail lines offer potential for an expanding share of commodity movement.

The ultimate state of multimodal transportation service would be a system in which a traveler could make a "seamless" journey with connections between modes, requiring minimal effort and incurring minimal delay. Currently, such an ideal state can be achieved only in the country's largest and most densely populated cities. In these areas, land use densities and developed commuter rail lines, subways, transit buses, trolleys, airport shuttles, and taxis offer a variety of choices and scheduling flexibility that make travel times and accessibility reliable. In the Central Valley, where cities have experienced much of their growth since the automobile's debut, residential densities tend to be comparatively low, with streets and land uses designed to encourage automobile use and storage.

On hot summer days, when temperatures can remain around 100 degrees, an air-conditioned car is highly attractive. It will require an even stronger commitment to air quality and quality-of-life goals in Merced County to implement the "seamless" multimodal system. It involves people making conscious choices to use alternative transportation modes and providing those alternative systems in a manner that encourages their use. To succeed, those efforts would have to focus on long-term changes, which are part of the preferred scenario, Connect and Conserve Merced County:

- ✓ Increasing land use intensity and residential densities, particularly along corridors used for transit.
- ✓ Facilitating mixed land use districts that promote living, working, shopping, and recreation accessible by foot or bicycle, and that are served by centrally located transit routes
- ✓ Expanding transit systems and service frequency.
- ✓ Developing connected bikeway systems and encouraging their use.
- ✓ Improving connectivity between transit and rail, cycling and transit, etc.
- ✓ Reserving future "park-and-ride" opportunities.
- ✓ An organized public education effort.
- ✓ Appropriate financing, including both operational and capital investment.

Details regarding the multi-modal transportation system in Merced County are provided in Chapter 2.

Highways, Streets, and Roads

MCAG has identified a Regional Roadway System that serves as the backbone of the transportation system in Merced County. The Regional Roadway System includes Interstate facilities, other freeways and expressways, principal and minor arterials, and major collectors. The system also incorporates planned

facilities that have not yet been constructed but are expected to play a significant role in the future network. Minor collectors and local roads are not included, as these facilities primarily serve local circulation rather than regional travel.

Public Transit Existing Conditions

Existing public transit services in Merced County consist of both bus transit and AMTRAK rail passenger service. Transit services include inter-city, fixed-route, and demand-responsive operations. Common carriers within Merced County include Amtrak, Greyhound, and others.

In Merced County, urban public transportation is provided by the Transit Joint Powers Authority of Merced County (The Bus). Currently, The Bus operates 15 fixed routes and two deviated fixed routes throughout the region and provides paratransit service for qualifying individuals who cannot access the fixed-route service. Since 2021, it has offered flexibly routed microtransit services (the MicroBus on the Westside of the County, with plans to offer microtransit on the Eastside as well. The Bus carries approximately 1,000,000 passengers per year.

Bus transportation to Yosemite National Park is provided by the Yosemite Area Regional Transportation System (YARTS).

Passenger rail service is provided by the Amtrak Gold Runner trains, which will soon be supplemented by the Altamont Corridor Express (ACE) Rail Service and a future high-speed rail passenger service, as described in the Railroad and Goods Movement section of this Section.

Details regarding these and other public transit systems, and graphics depicting the systems within the County, are provided in Chapter 2 of this EIR.

Aviation

Merced County has several public-use airports, as depicted in Chapter 2, with Merced Regional Airport (MCE) as the primary passenger airport in the region.

Details on these and other public-use airports, along with a graphic depicting the airports within the County, are provided in Chapter 2 of this EIR.

Active Transportation Existing Conditions

A Regional Active Transportation Plan was adopted in 2024 and identifies opportunities to improve and expand walking and biking options and to expand access to public transportation systems across the County and its Cities. It identifies a network of safe and attractive trails, sidewalks, and bikeways that connect Merced County residents to key destinations, especially local schools, parks, and transit, and

establishes a network of regional bikeways that allows bicyclists to safely ride within cities and access regional destinations.

For many, using bicycles as a means of transportation has several appealing aspects. Bicycling has positive air quality, energy, economic, and health impacts, and can reduce automobile congestion. From an air quality perspective, every bicycle trip that substitutes for auto travel results in cleaner air. Bicycles do not consume scarce fuel, maintenance is low, and they can be used for commuting as well as recreation, while promoting physical exercise. Existing and planned urban bikeways are shown in Chapter 2.

The bicycle's door-to-door capability for short trips makes it an attractive alternative mode of transportation in the Merced region during mild weather, as the flat terrain is ideal for riding. Implementation of a bikeway system will provide connectivity between cities and access to destinations of regional interest, as well as commuter lanes in Merced County.

Goals for the development of bicycle transportation in Merced County are as follows:

- ✓ Planning - Recognizing and integrating bicycling and walking as valid and healthy transportation modes in transportation planning activities.
- ✓ Physical Facilities - Safe, convenient, and continuous routes for bicyclists and pedestrians of all types that interface with and complement a multimodal transportation system.
- ✓ Safety and Education - Improved bicycle and pedestrian safety through education and enforcement
- ✓ Encouragement - Increased acceptance of bicycling both as a legitimate transportation mode on public roads and highways and as a transportation mode that is a viable alternative to the automobile.
- ✓ Implementation - Maximizing funding opportunities to increase development of the regional bikeways system, related facilities, and pedestrian facilities.

Further details on the planned bikeway system are provided in Chapter 2 of this EIR, along with figures depicting the existing and planned systems. The plan calls for community routes and routes linking communities to provide access to activity centers, including major commercial and employment centers, major recreational sites, and schools. All of the cities in the County and the County itself have planned bikeway facilities, although limited available funding has had an impact on their construction. Nevertheless, local agencies continue to add to the inventory of completed bikeways, particularly in conjunction with new development.

Railroad and Goods Movement

The Gold Runner Amtrak route provides passenger rail service to Oakland, Sacramento, and Bakersfield several times daily. Amtrak also provides bus service from various rail stations along the Gold Runner route to cities that are not accessible by rail, such as Los Angeles and San Diego.

The rail network in Merced County consists of operating main and branchline right-of-way (reference Chapter 2. Union Pacific Railroad (UP) and the Burlington Northern Santa Fe Railway (BNSF) each operate one mainline that passes through Merced County. Additionally, the railroads operate many spur lines to serve industrial and agricultural clients, some of which operate on adjacent property by agreement between the railroad and the property owner.

The Amtrak Gold Runners service continues to play an important role in the San Joaquin Valley's balanced transportation system, filling a service gap in mass transit between intercity bus and airline services. The San Joaquin Joint Powers Authority (SJJPA) manages the Gold Runner service, with Amtrak operating five trains per day between Bakersfield and Oakland and two per day between Bakersfield and Sacramento, each making one daily round trip. This allows for seven north-bound and seven south-bound trains each day at Merced County's Amtrak Station in downtown Merced. Amtrak also operates a dedicated bus service connecting rail stations with cities not directly served by the Gold Runners trains. These Amtrak thruway buses are critical to system performance, providing connections at the Sacramento, Lodi, Stockton, Oakland, Emeryville, Martinez, Merced, Hanford, and Bakersfield stations.

The San Joaquin Regional Rail Commission (SJRRC) operates the Altamont Corridor Express (ACE) train service, which has an anticipated extension into Merced with stations and Atwater and Livingston. ACE will provide commuter-oriented connections to San Jose, Sacramento, and points in between.

RTP Policies

The RTP Policy Element seeks to identify the transportation goals, objectives, and policies that meet the regional needs. Goals, objectives, and policies are established to direct the courses of action that will provide efficient, integrated multimodal transportation systems to serve the mobility needs of people, including accessible pedestrian and bicycle facilities, and freight, while fostering economic prosperity and development, and minimizing mobile sources of air pollution. The 2026 RTP reflects transportation planning for Merced County through the year 2049. Because Merced County is one of eight MPOs that make up the San Joaquin Valley Air Basin, we are linked for regional transportation planning through air quality guidelines. As such, the Needs Assessment is addressed on the regional Valley level and can be found in RTP/SCS Appendix B, the *San Joaquin Valley Regional Transportation Chapter*; Transportation Network and Policies and Implementing Actions *Chapter*. The Action Plan describes the programs and actions necessary

to implement the Goals of the RTP/SCS. The Financial Element summarizes the cost of plan implementation constrained by a realistic projection of available revenues.

In addition, the 2026 RTP also includes the Sustainable Communities Strategies (SCS) for Merced County. As such, a separate committee and public participation process were followed. Performance measures/indicators were developed to evaluate the scenario process and are found in the SCS Chapter of the 2026 RTP/SCS.

Additional details regarding the Policy Element are provided in Chapter 2 of this EIR. In developing the Policy Element for the 2026 RTP, broad overarching focus points are evident: preservation of existing facilities, sound financial management by leveraging existing funding, balancing transportation needs with land use, and meeting state targets for greenhouse gas reduction.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

Criteria for Significance

The following significance criteria were used to determine the level of significance of impacts on the transportation system resulting from the proposed Project. Significance criteria were developed based on Appendix G of the State CEQA Guidelines and on professional judgment. In general, an individual improvement project and new development project contained within the RTP/SCS would result in a significant transportation impact if it were:

- ✓ Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
- ✓ Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).
- ✓ Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- ✓ Result in inadequate emergency access.

Generally, proposed projects are of the following two types:

- ✓ New Systems (new highway and transit facilities).
- ✓ Modifications to Existing Systems (widening roads, addition of carpool lanes, grade crossings, intelligent transportation systems, maintenance, and service alterations).

Impact 3.17.1 – Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

A description of the existing transportation system is provided earlier in this section.

The 2026 RTP approach and strategies align with other regional programs, plans, and policies, including MCAG's programs to administer State and federal programs. MCAG partners with other regional and local agencies to ensure alignment of transportation strategies. The core approach of directing growth to infill areas and providing sustainable transportation options to reduce emissions, improve mobility and access, reduce congestion, and increase safety on the transportation system reflects federal, State, and local efforts. Implementation of the proposed Plan is not expected to substantially conflict with any program, plan, ordinance, or policy that addresses the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Mitigation Measures

Not applicable.

Significance After Mitigation

Not applicable.

Impact 3.17.2 – Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

As noted in CEQA Guidelines Section 15064.3(a), vehicle miles traveled is generally the most appropriate measure of transportation impacts. CEQA Guidelines Section 15064.3(b) provides the criteria for analyzing and determining transportation impacts, as follows:

The criteria in Section 15064.3(b) are primarily directed toward the assessment of project-level impacts, whereas the proposed Plan is a regional long-range plan that integrates a region-wide suite of projects, programs, and policies and is analyzed using regional models. While VMT has been established as the new measure of transportation impacts under SB 743 (see the Regulatory Setting section for further discussion of SB 743), CEQA allows lead agencies to determine the methodology for evaluating VMT (CEQA Guidelines Section 15064.3(b)(4) and to establish a threshold of significance (CEQA Guidelines Section 15064.7).

The State has developed resources to help lead agencies evaluate impacts and establish impact thresholds under the new VMT standard. Key guidance relevant to transportation impacts and VMT includes the

Technical Advisory on Evaluating Transportation Impacts in CEQA (Governor's Office of Planning and Research 2018) and the California Air Resources Board's (CARB) 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals (CARB 2019).

The Technical Advisory, prepared by the Office of Planning and Research (OPR), provides guidance on determining significance thresholds and assessing VMT. The Technical Advisory is directed to specific projects by project type (e.g., residential, retail, office) and to local plans (e.g., general plans), and includes recommendations for evaluating transportation impacts. OPR uses the Statewide greenhouse gas targets established through 2050 by State laws and executive orders as the basis for its recommended VMT significance thresholds. For project-level analyses, OPR recommends that "a per capita or per employee VMT that is fifteen percent below that of existing development may be a reasonable threshold" based on their review of relevant research on project-level impact mitigation measures. The OPR guidance addresses general plans (and lesser area plans), but not regional plans: "A general plan, area plan, or community plan may have a significant impact on transportation if proposed new residential, office, or retail land use would, in aggregate, exceed the respective thresholds" for the project level thresholds, a per capita VMT that is fifteen percent below existing development.

In the 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals, CARB describes VMT estimates associated with a scenario developed for the 2017 Scoping Plan Update. The scenario assumed a combination of vehicle technologies, vehicle fuels, and slower VMT growth to achieve the Statewide 2050 GHG emissions reduction targets (80% below 1990 levels by 2050, as established under EO S-03-05). The assessment is based on a scenario CARB developed that would achieve the GHG goals through a combination of cleaner vehicles and fuels and slower VMT growth. Based on the scenario assessment, CARB found that for light-duty vehicle travel, per-capita VMT would need to be 16.8 percent lower than existing levels (Statewide 2015-2018 average VMT per capita) by 2050, and for overall vehicle travel, per-capita VMT would need to be 14.3 percent lower than existing levels to be consistent with the 2050 State climate goals (CARB 2019). However, CARB also stresses that the VMT developed in these estimates "is not household-generated VMT, and the values are not directly comparable to output from a local or regional travel demand model." Based on the above, no thresholds for assessing significant impacts in VMT at the regional level, such as for an RTP/SCS, have been established by the State.

Although the reduction amounts developed by OPR and CARB may not meet the significance thresholds for an RTP/SCS, they establish standards that may serve as guidance for lead agencies, subject to lead agency discretion as discussed above.

It is noted that the aggregate GHG emission reduction sought after by CARB in the 2017 Scoping Plan is 15 percent statewide. This is one reason OPR believes the 15 percent reduction in VMT is appropriate. The aggregate 15 percent GHG emissions reduction applies across all land use and transportation activities

and indicates that the State and its individual MPOs are compliant with the SB 375 goals, the overall State climate change strategy, and Scoping Plan objectives.

CARB establishes GHG targets for each of the 18 MPOs in the State, reviews the SCS's, and makes a determination whether the SCSs would achieve GHG reduction targets if implemented. CARB established a 14 percent GHG reduction target for the MCAG region. The State recognizes that Merced County's contribution to the aggregate 15 percent statewide GHG emission reduction is 14 percent. Other regions may achieve greater reductions to achieve the aggregate statewide goal. As such, a reduction in GHG directly corresponds to a reduction in VMT. To reach the statewide GHG reduction goal of 15 percent, the MCAG region must reduce GHG emissions by 14 percent. The method of reducing GHG by 14 percent is to reduce VMT by 14 percent as well.

Therefore, MCAG's target for this RTP/SCS is to achieve a per-capita VMT of 2049, which is 14 percent below the existing regional per-capita VMT. An inability to achieve that target is considered to be indicative of a significant environmental impact.

The following are VMT results from the 2026 RTP for 2023 Baseline and 2049 Horizon Year conditions. The regional model cannot accurately evaluate the VMT implications of strategies such as telework, TDM/TSM, electric vehicle adoption and charging infrastructure, carpool/vanpool programs, and bicycle/pedestrian infrastructure improvements (reference Table 3-81). Therefore, the future results shown below are considered to be conservative, and the actual VMT reductions would be slightly greater.

TABLE 3-81

VMT and VMT/Capita Estimates

2023 Baseline, 2049 No Project, and 2049 With Project

	2023 Baseline	2049 No Project	2049 With 2026 RTP/SCS (Scenario A)	2049 With 2026 RTP/SCS (Scenario B)	2049 With 2026 RTP/SCS (Scenario C)
VMT:	7,525,218	8,907,871	8,819,638	8,797,398	8,775,056
Population:	285,193	330,788	330,788	330,788	330,788
VMT/Capita	26.39	26.93	26.66	26.60	26.53

All 2026 RTP/SCS scenarios have lower VMT/capita than the 2049 No Project condition but higher VMT/capita than the 2023 Baseline. Therefore, the 2026 RTP/SCS does not meet the regional VMT reduction threshold of 15%.

Mitigation Measures

Implementation of multimodal improvement projects and programs, and land use plans that consolidate growth in transit-served infill areas, will generally lower VMT/capita but will fall short of the reductions needed to achieve a less-than-significant result.

To address VMT impacts, the following mitigation measures are recommended.

- ✓ **TT 3.17.2-1** Measures intended to reduce VMT and reduce VHT or congestion levels are part of the RTP/SCS. These include: increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation, maximizing the benefits of the land use/transportation connection through increased densities, other Travel Demand Management measures described in the RTP and in local agency General Plans, and key transportation investments (such as expanding microtransit service and streamlining and increasing frequencies of bus transit service) targeted to reduce congestion levels and improve LOS.

- ✓ **TT 3.17.2-2** MCAG will continue to secure funding programs considering a project's ability to enhance complete streets objectives where it is feasible.

- ✓ **TT 3.17.2-3** Beyond the currently financially and institutionally feasible measures included in the 2026 RTP/SCS, MCAG will identify further reduction in VMT, and fuel consumption that could be obtained through land use strategies, additional car-sharing programs, additional vanpools, and additional bicycle/pedestrian programs.

- ✓ **TT 3.17.2-4** Transportation Planning: MCAG will assist local jurisdictions to encourage new developments to incorporate both local and regional transit measures into the project design that promote the use of alternative modes of transportation.

- ✓ **TT 3.17.2-5** Local jurisdictions are encouraged to promote ride-sharing programs, e.g., by designating a certain percentage of parking spaces for high-occupancy vehicles, providing larger parking spaces to accommodate vans used for ridesharing, and designating adequate passenger loading and unloading and waiting areas.

- ✓ **TT 3.17.2-6** Local jurisdictions are encouraged to support bicycling and walking by incorporating bicycle lanes into street systems in regional transportation plans, new subdivisions, and large developments, creating bicycle lanes and walking paths directed to the location of schools and other logical points of destination and provide adequate bicycle parking, and encouraging commercial projects to include facilities on-site to encourage employees to bicycle or walk to work.

- ✓ **TT 3.17.2-7** Transit agencies are encouraged to support bicycling to transit facilities by providing additional bicycle parking, locker facilities, and bike lane access to transit facilities when feasible.

- ✓ **TT 3.17.2-8** Project sponsors are encouraged to build or fund a major transit stop within or near the development.

- ✓ **TT 3.17.2-9** Transit agencies are encouraged to continue to provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers.

- ✓ **TT 3.17.2-10** Local jurisdictions and project sponsors are encouraged to incorporate bicycle lanes, routes, and facilities into street systems, new subdivisions, and large developments.

- ✓ **TT 3.17.2-11** Local jurisdictions are encouraged to require amenities for non-motorized transportation, such as secure and convenient bicycle parking.

- ✓ **TT 3.17.2-12** Local jurisdictions are encouraged to ensure that the project enhances, and does not disrupt or create barriers to, non-motorized transportation.

- ✓ **TT 3.17.2-13** Local jurisdictions are encouraged to connect parks and open space through shared pedestrian/bike paths and trails to encourage walking and bicycling.

- ✓ **TT 3.17.2-14** Local jurisdictions are encouraged to create bicycle lanes and walking paths directed to the location of schools, parks, and other destination points.

- ✓ **TT 3.17.2-15** Local jurisdictions are encouraged to work with the school districts to improve pedestrian and bike access to schools and to restore or expand school bus service using lower-emitting vehicles.

- ✓ **TT 3.17.2-16** Local jurisdictions and transit agencies are encouraged to provide information on alternative transportation options for consumers, residents, tenants, and employees to reduce transportation-related emissions.

- ✓ **TT 3.17.2-17** Project Selection: Local jurisdictions are encouraged to give priority to transportation projects that would contribute to a reduction in vehicle miles traveled per capita, while maintaining economic vitality and sustainability.

- ✓ **TT 3.17.2-18** System Interconnectivity: MCAG, in coordination with local jurisdictions, is encouraged to create an interconnected transportation system that allows a shift in travel from private passenger vehicles to alternative modes, including public transit, ride sharing, car sharing, bicycling, and walking, by incorporating the following:

- Provide multimodal transportation centers that allow transportation modes to intersect.
- Provide adequate and affordable public transportation choices, including expanded bus routes and service, as well as other transit choices such as shuttles;
- To the extent feasible, extend service and hours of operation to underserved arterials and population centers or destinations such as colleges;
- Focus transit resources on high-volume corridors and high-boarding destinations such as colleges, employment centers, and regional destinations;
- Coordinate schedules and routes across service lines with neighboring transit authorities;
- Provide safe and convenient access for pedestrians and bicyclists to, across, and along major transit priority streets;
- Use park-and-ride facilities to access transit stations.

✓ **TT 3.17.2-19** Transit System Infrastructure: Local jurisdictions are encouraged to upgrade and maintain transit system infrastructure to enhance public use, including:

- Provide transit stops and bus lanes that are safe, convenient, clean, and efficient;
- Provide transit stops that have clearly marked street-level designation, and are accessible;
- Provide transit stops that are safe, sheltered, with clean benches, and lighting is adequate.
- Place transit stations along transit corridors within mixed-use or transit-oriented development areas at intervals of three to four blocks, or no less than one-half mile.

✓ **TT 3.17.2-20** Customer Service: Transit agencies are encouraged to enhance customer service and system ease-of-use, including:

- Continue to develop the Regional Pass system to reduce the number of different passes and tickets required of system users;
- Expand “Smart Bus” technology, using GPS and electronic displays at transit stops to provide customers with “real-time” arrival and departure time information (and to allow the system operator to respond more quickly and effectively to disruptions in service);
- Improve and maintain the online trip-planning program.
- Before funding transportation improvements that increase roadway capacity and VMT, evaluate the feasibility and effectiveness of funding projects that support alternative modes of transportation and reduce VMT, including transit, bicycle, and pedestrian access.

✓ **TT 3.17.2-21** Local jurisdictions are encouraged to monitor traffic and congestion to determine when and where new transportation facilities are needed in order to increase access and efficiency.

✓ **TT 3.17.2-22** HOV Lanes: MCAG can and should encourage Caltrans to construct high-occupancy vehicle (HOV) lanes or similar mechanisms on State Highways whenever necessary to relieve congestion and reduce emissions.

- ✓ **TT 3.17.2-23** Ride-share Programs: MCAG will continue to support ridesharing through dibs, and local jurisdictions are encouraged to promote ride-sharing programs as well, including:
  - Designate a certain percentage of parking spaces for ride-sharing vehicles;
  - Designate adequate passenger loading, unloading, and waiting areas for ride-sharing vehicles;
  - Provide a website or message board for coordinating shared rides.
  - Hire or designate a rideshare coordinator to develop and implement ridesharing programs.

- ✓ **TT 3.17.2-24** Employer-based Trip Reduction: Local jurisdictions are encouraged to support voluntary, employer-based trip reduction programs, including:
  - Provide assistance to regional and local ridesharing organizations;
  - Advocate for legislation to maintain and expand incentives for employer ridesharing programs;
  - Require the development of Transportation Management Associations for large employers and commercial/ industrial complexes;
  - Provide public recognition of effective programs through awards, top ten lists, and other mechanisms.

- ✓ **TT 3.17.2-25** Local Area Shuttles: Transit agencies are encouraged to utilize shuttles to serve neighborhoods, employment centers, and major destinations.

- ✓ **TT 3.17.2-26** Transit agencies are encouraged to create a free or low-cost local area bus service that includes a fixed route to popular tourist destinations or shopping and business centers.

- ✓ **TT 3.17.2-27** Local jurisdictions are encouraged to support bicycle use as a mode of transportation by enhancing infrastructure to accommodate bicycles and riders and providing incentives.

- ✓ **TT 3.17.2-28** Development Standards for Bicycles: Local jurisdictions are encouraged to establish standards for new development and redevelopment projects to support bicycle use, including:
  - Amending the Development Code to include standards for safe pedestrian and bicyclist accommodations, by incorporating the following:
    - "Complete Streets" policies that foster equal access by all users in the roadway design, wherever feasible;
    - Bicycle and pedestrian access internally and in connection to other areas through easements;
    - Safe access to public transportation and other non-motorized uses through the construction of dedicated paths;
    - Safe road crossings at major intersections, especially for school children and seniors;
    - Adequate, convenient, and secure bike parking at public and private facilities and destinations in all urban areas;
    - Street standards will include provisions for bicycle parking within the public right of way.

- ✓ **TT 3.17.2-29** Local jurisdictions are encouraged to incorporate bicycle facilities, as appropriate, in the new land use, including:
  - Construction of weatherproof bicycle facilities where feasible, and at a minimum, bicycle racks or covered, secure parking near the building entrances;
  - Encourage the development of bicycle stations at intermodal hubs.
  - Conduct a connectivity analysis of the existing bikeway network to identify gaps and prioritize bikeway development where gaps exist.

- ✓ **TT 3.17.2-30** Bicycle and Pedestrian Trails: Local jurisdictions are encouraged to establish a network of multi-use trails to facilitate safe and direct off-street bicycle and pedestrian travel, and will provide bike racks along these trails at secure, lighted locations.

- ✓ **TT 3.17.2-31** Bicycle Safety Program: Local jurisdictions are encouraged to develop and implement a bicycle safety educational program to teach drivers and riders the laws, riding protocols, routes, safety tips, and emergency maneuvers.

- ✓ **TT 3.17.2-32** Bicycle and Pedestrian Project Funding: Local jurisdictions are encouraged to pursue enhanced funding for bicycle and pedestrian facilities and access projects, including, as appropriate:
  - Apply for regional, State, and federal grants for bicycle and pedestrian infrastructure projects;
  - Update traffic impact fee programs to include VMT or establish new VMT mitigation fee programs to help fund future bicycle and pedestrian facilities and/or future transit infrastructure/routes.
  - Use existing revenues, such as State gas tax subventions, sales tax funds, and general fund monies, for projects that enhance bicycle and walking use for transportation.

- ✓ **TT 3.17.2-33** Bicycle Parking: Local jurisdictions are encouraged to adopt bicycle parking standards that ensure sufficient bicycle parking.

- ✓ **TT 3.17.2-34** Pedestrian and Bicycle Promotion: Local jurisdictions are encouraged to work with local community groups and downtown business associations to organize and publicize walking tours and bicycle events, and to encourage pedestrian and bicycle modes of transportation.

- ✓ **TT 3.17.2-35** Bicycle Transportation Support: Local jurisdictions are encouraged to promote and support the use of bicycles as transportation.

- ✓ **TT 3.17.2-36** Transit Access to Municipal Facilities: Transit agencies can and should provide services to municipal facilities.

Significance After Mitigation

The mitigation measures would require implementing agencies to avoid or mitigate impacts to all types of transportation facilities (multi-modal). Although the VMT reduction that could be achieved by implementation of the recommended mitigation measures is unknown and would be difficult to calculate, it is clear that MCAG does not have land use authority, nor does it have the ability to design and construct transportation improvement projects and future land use developments included in the 2026 RTP/SCS, or require local implementing agencies to adopt the above mitigation measures. The responsibility to determine and adopt mitigation and approve land use development rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies. Therefore, for the purposes of this program-level review, the impact is considered significant and unavoidable.

Impact 3.17.3 – Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

While the 2026 RTP/SCS will not directly result in increased hazards due to design features (e.g., sharp curves or dangerous intersections) or increase conflicts between incompatible uses (e.g., farm equipment and other vehicular traffic), measures should be implemented to ensure that traffic hazards are minimized in the design of the individual transportation projects included in the RTP. Land use development in urban areas of Merced County will increase the number of residents in close proximity to public transit. It will also increase opportunities for walking and biking, thereby making it necessary for multimodal facilities to be designed to enhance the safety of these users.

Mitigation Measures

The implementing agency would be responsible for developing and ensuring adherence to necessary mitigation measures. MCAG is not an implementing agency and does not have the ability to design and construct transportation improvement projects included in the RTP/SCS. The responsibility for designing and constructing transportation improvements rests with Caltrans, local jurisdictions, and other responsible agencies.

To address related impacts and to support policies contained in the 2026 RTP/SCS, the following additional mitigation measures are recommended.

- ✓ **TT 3.17.3-1** Implementing agencies should consider safety an objective in the design of RTP projects, and should plan to avoid, improve, or mitigate safety impacts in the course of project-level environmental review.

- ✓ **TT 3.17.3-2** MCAG shall conduct a forum where policymakers can be educated and can develop consensus on regional transportation safety and security policies.

- ✓ **TT 3.17.3-3** MCAG shall work with local officials to assist with the implementation of regional transportation safety and security policies.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts that substantially increase hazards due to a design feature or incompatible uses, such impacts may remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the identified impacts.

Impact 3.17.4 – Result in inadequate emergency access.

Congestion is expected to worsen between now and 2049, which could adversely impact emergency access. While the 2026 RTP/SCS would generally enhance mobility and access to destinations (including emergency vehicles) compared to the No Project Alternative, measures should be implemented to maintain adequate emergency access in the design of RTP projects. Before 2026, RTP projects will be implemented by local jurisdictions, and all projects will undergo additional environmental analysis, as applicable and appropriate, including evaluation of impacts on emergency and public services. The implementing agencies will use these to ensure adequate access when designing individual RTP projects. During emergencies, emergency vehicles demand (and should be given) the right of way, which is signaled through lights and sirens. This will remain the case in the future, allowing emergency vehicles to avoid some congestion.

Mitigation Measures

Implementing agencies should consider emergency access impacts in the design of RTP projects and plan to avoid, improve, or mitigate these impacts during project-level environmental review. The implementing agency would be responsible for requiring and ensuring adherence to necessary mitigation measures. MCAG is not an implementing agency and does not have the ability to design and construct transportation

improvement projects included in the RTP/SCS. The responsibility for designing and constructing transportation improvements rests with Caltrans, local jurisdictions, and other responsible agencies.

To address related impacts and to support policies contained in the 2026 RTP/SCS, the following additional mitigation measures are recommended.

- ✓ **TT 3.17.4-1** MCAG shall support local agencies with the rapid repair of transportation infrastructure in the event of an emergency. This will be accomplished by MCAG, in cooperation with local and State agencies, identifying critical infrastructure needs necessary for: a) emergency responders to enter the region, b) evacuation of affected facilities, and c) restoration of utilities. In addition, MCAG shall establish transportation infrastructure practices that promote and enhance security.

Significance After Mitigation

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above mitigation measures will provide the framework and direction to avoid or reduce impacts that result in inadequate emergency access, such impacts may remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the identified impacts.

3.18 WILDFIRE

This section discusses potential wildfire impacts in the MCAG region as they relate to the 2026 Regional Transportation Plan/Sustainable Communities Strategy (2026 RTP/SCS).

Regulatory Setting

Federal Agencies and Regulations

- ✓ **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 funding through the Hazard Mitigation Grant Program. The State of California Multi-Hazard Mitigation Plan (SHMP) complies with this act.

State Agencies and Regulations

- ✓ **The California Fire Plan** - The Strategic Fire Plan for California is the State's road map for reducing the risk of wildfire. The most recent version of the Plan was finalized in August 2026 and directs each CAL FIRE Unit to revise and update its locally specific Fire Management Plan (CAL FIRE 2026b). These plans assess the fire situation within each of the 21 CAL FIRE units and six contract counties. The plans address wildfire protection areas, initial attack success, assets and infrastructure at risk, pre-fire management strategies, and accountability within their geographical boundaries.

- ✓ **California Building Code** - The *California Building Code* is another name for the body of regulations contained in Title 24, Part 2, of the California Code of Regulations, which is a portion of the California Building Standards Code (CBSC, 1995). Title 24 is assigned to the California Building Standards Commission, which coordinates all building standards. Under state law, all building standards must be centralized in Title 24, or they are not enforceable. Published by the International Conference of Building Officials, the Uniform Building Code (UBC) is a widely adopted model building code in the United States. The California Building Code incorporates by reference the UBC with necessary California amendments. About one-third of the text within the California Building Code has been tailored for California earthquake conditions. Although widely accepted and implemented throughout the United States, local, city, and county jurisdictions can adopt the UBC either in whole or in part.

- ✓ **California Office of Emergency Services** - The California Office of Emergency Services prepares the SHMP, which identifies hazard risks and includes a vulnerability analysis and a hazard mitigation strategy. The SHMP is required under the Disaster Mitigation Act of 2000 in order for the State to

receive federal funding. The Disaster Mitigation Act of 2000 requires a State mitigation plan as a condition of disaster assistance.

- ✓ **California Fire Code** - The 2019 California Fire Code (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, location, maintenance, removal, and demolition of buildings or structures, and any appurtenances connected or attached to such buildings or structures, throughout California.

Local Agencies and Regulations

- ✓ **General Plans** - Local planning policies related to wildfire hazards are established in each jurisdiction's general plan, generally in the Safety Element or equivalent chapter. For emergency services, relevant policies include coordinating with other agencies 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.

- ✓ **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

Environmental Setting

Merced County is defined by distinct geographical features, including the nearly level alluvial plains of the San Joaquin Valley, the foothills of the Coast Ranges, and the foothills/mountains of the southern Sierra Nevada.

Environmental Impacts, Mitigation Measures, and Significance After Mitigation

This impact analysis examines each significance criterion individually and assesses how implementing the proposed RTP, including changes to the transportation network and land use patterns, may affect geology, seismicity, soils, and mineral resources. The analysis is programmatic and considers potential regional impacts on both land use and transportation.

Criteria for Significance

- ✓ If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

- ✓ If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, 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?

- ✓ If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, 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?

- ✓ If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, 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?

CAL FIRE has mapped portions of eastern Merced County, particularly within foothill and wildland areas, as High or Very High Fire Hazard Severity Zones within State Responsibility Areas (SRAs) and designated Local Responsibility Areas (LRAs). The land use scenario envisioned by the 2026 RTP/SCS concentrates forecasted population and employment growth in urban areas and corridors of the County, such as incorporated cities, unincorporated towns, and major roadways, where the risk of wildfire is lower than in more rural areas with more abundant fuels. However, as evidenced by the 2022 Camp Fire in Northern California, urban areas are also susceptible to wildfires, despite the lower abundance of typical wildfire fuels. This land use scenario is like that in the 2026 RTP/SCS, which concentrates forecasted regional population and employment growth in the County's urban areas and corridors while preserving the distinct identities of existing cities and towns. However, not all projects and developments included in the 2026 RTP/SCS would be infill projects in urbanized areas, and some projects would inevitably be in areas at risk of wildfires. Additionally, CAL FIRE has mapped some urbanized areas within the region as moderate, high, or very high fire hazard severity zones, and, as evidenced by the 2022 Camp Fire, urban areas remain at risk of wildfire.

New construction would be subject to the California Fire Code, which includes safety measures to minimize the threat of fire, including ignition-resistant construction with exterior walls of noncombustible or ignition-resistant material from the surface of the ground and sealing any gaps around doors, windows, eaves, and vents to prevent intrusion by flame or embers.

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 2026 RTP/SCS, but not entirely.

Land use development projects in the 2026 RTP/SCS (including any land use development projects from the 2026 RTP/SCS that have not been constructed) that would be located within or less than 2 miles from an SRA or very high fire hazard severity zones would have potentially significant wildfire impacts, as existing codes and regulations cannot fully prevent wildfires from damaging structures or populations. These projects would increase the exposure of transportation infrastructure to wildfire-related loss or damage.

However, it should be noted that land use and transportation projects located outside or more than 2 miles from an SRA or very high fire hazard severity zones would not require mitigation.

Impact WF 3.18.1 - Substantially impair an adopted emergency response plan or emergency evacuation plan.

Construction and implementation of transportation improvement projects and future land use developments included in the 2026 RTP/SCS could temporarily or permanently affect emergency response and evacuation routes within areas identified as State Responsibility Areas (SRAs) or Very High Fire Hazard Severity Zones (VHFHSZs). Construction activities associated with roadway improvements, lane closures, detours, bridge construction, utility relocation, and other temporary traffic disruptions could interfere with emergency access or evacuation routes. Additionally, future land use developments could increase traffic volumes along roadways serving as evacuation corridors or alter circulation patterns relied upon during emergency events.

Depending upon project location, construction timing, and duration, roadway restrictions or altered traffic patterns could impede emergency response times and reduce the efficiency of evacuation operations during wildfire events. Impacts would vary depending upon project-specific design characteristics and proximity to identified evacuation corridors. Because the specific timing and configuration of future projects are not known at the program level, impacts could be potentially significant.

Mitigation Measures

- ✓ **WF 3.18.1-1** Prior to construction, implementing agencies shall coordinate with local emergency service providers, fire agencies, and affected jurisdictions regarding emergency access and evacuation requirements.

- ✓ **WF 3.18.1-2** Traffic control plans shall be prepared for projects involving temporary lane closures or circulation changes and shall maintain emergency vehicle access and designated evacuation routes during construction activities.

- ✓ **WF 3.18.1-3** Individual transportation improvement projects and future land use developments shall evaluate consistency with local emergency response and evacuation plans during project-level environmental review.

Significance After Mitigation

With the implementation of this mitigation, the risk of loss of structures and transportation infrastructure, and the risk of injury or death from wildfires, would be reduced. These measures would make structures and transportation infrastructure more fire-resistant and less vulnerable to loss in the event of wildfire. These measures would also reduce the risk that the construction of 2026 RTP/SCS projects would inadvertently ignite a wildfire. However, it is not possible to prevent a significant risk of wildfires or fully protect people and structures from the risks of wildfires, despite the implementation of mitigation. Thus, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.

Impact WF 3.18.2 – 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?

Transportation improvements and future land use developments included in the RTP/SCS may occur in or adjacent to areas susceptible to wildfire hazards. Development in areas with steep slopes, vegetation, and wildfire-prone conditions could increase exposure to wildfire hazards and associated smoke and pollutant concentrations. Transportation facilities may increase access to undeveloped areas, potentially increasing human activity and ignition sources.

Wildfire events can expose occupants to elevated concentrations of particulate matter, carbon monoxide, and other pollutants generated during wildfire conditions. Increased development in wildfire-prone areas could expose residents, workers, and travelers to wildfire hazards or increase the potential for wildfire spread.

The program-level nature of the RTP/SCS limits the ability to identify exact project-specific wildfire conditions. Therefore, impacts would be potentially significant.

Mitigation Measures

- ✓ **WF 3.18.2-1** Individual projects within or adjacent to SRA or VHFHSZ areas shall evaluate wildfire risk during project-level environmental review.

- ✓ **WF 3.18.2-2** Projects shall incorporate site design measures consistent with applicable fire codes, defensible space standards, vegetation management requirements, and local fire agency recommendations.

- ✓ **WF 3.18.2-3** Projects shall coordinate with fire protection agencies regarding access requirements, emergency response needs, and wildfire risk reduction strategies.

- ✓ **WF 3.18.2-4** Construction activities shall implement fire prevention measures, including spark arrestors, restrictions during high fire weather conditions, and emergency fire suppression equipment.

Significance After Mitigation

With the implementation of mitigation measures, the risk of exposing project occupants to pollutant concentrations from a wildfire or its uncontrolled spread would be reduced. However, it is not possible to eliminate the significant risk of exposing project occupants to pollutant concentrations from a wildfire or its uncontrolled spread, despite the implementation of mitigation measures. Thus, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.

Impact WF 3.18.3 – 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?

Implementation of transportation improvements and future land use developments could require associated infrastructure such as roadways, utility extensions, fuel modification zones, emergency water supplies, and power facilities. Construction or maintenance of such infrastructure may alter vegetation patterns, increase human access into undeveloped areas, or create ignition sources.

Roads and utility infrastructure can provide important emergency access functions, but may also increase long-term wildfire risk by expanding access to previously undeveloped areas. Fuel management activities or utility maintenance could also result in environmental disturbances, including vegetation removal and habitat impacts.

Because the associated infrastructure needs for individual projects are not fully known at this stage, the impacts would be potentially significant.

Mitigation Measures

- ✓ **WF 3.18.3-1** Individual projects requiring associated infrastructure in wildfire-prone areas shall evaluate environmental and wildfire-related impacts during project-level environmental review.

- ✓ **WF 3.18.3-2** Infrastructure shall be designed to minimize vegetation disturbance and avoid creating unnecessary ignition risks.
- ✓ **WF 3.18.3-3** Fuel modification and vegetation management activities shall comply with applicable local, state, and federal requirements.

- ✓ **WF 3.18.3-4** Utility installations shall incorporate fire-resistant design features and comply with applicable utility and fire agency standards.

Significance After Mitigation

With the implementation of mitigation measures, the installation or maintenance of associated infrastructure that may exacerbate fire risk or result in temporary or ongoing impacts on the environment would be reduced. However, it is not possible to prevent a significant risk, despite the implementation of mitigation measures. Thus, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.

Impact WF 3.18.4 – 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?

Wildfire events can alter watershed conditions and destabilize slopes through loss of vegetation, soil changes, and increased erosion potential. Areas affected by wildfire may experience increased runoff, debris flows, flooding, and landslide hazards. Transportation improvements and future land use developments located in wildfire-prone areas could expose people and structures to post-fire hazards.

Future projects involving grading, slope alteration, roadway construction, or changes in drainage patterns may increase vulnerability in areas with post-fire conditions. Because future project locations and design characteristics have not yet been finalized, the extent of potential impacts cannot be fully determined at the program level.

Accordingly, impacts would be potentially significant.

Mitigation Measures

- ✓ **WF 3.18.4-1** Individual projects shall evaluate post-fire hazards, including flooding, erosion, debris flows, and slope instability, where project sites occur within wildfire-prone areas.

- ✓ **WF 3.18.4-2** Geotechnical and hydrologic analyses shall be conducted where warranted to evaluate slope stability and drainage conditions.

- ✓ **WF 3.18.4-3** Appropriate drainage, erosion control, and slope stabilization measures shall be incorporated into project design.

- ✓ **WF 3.18.4-4** Projects shall incorporate applicable stormwater and runoff management practices to minimize post-fire flooding and erosion risks.

Significance After Mitigation

With the implementation of mitigation measures, the risk of exposing people or structures to significant hazards, including downslope or downstream flooding or landslides, resulting from runoff, post-fire slope instability, or drainage changes, would be reduced. However, it is not possible to eliminate the significant risk despite implementing mitigation measures. Thus, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.

4.0 COMPARISON OF PROJECT ALTERNATIVES

4.1 INTRODUCTION

CEQA requires that an EIR describe a reasonable range of alternatives to the project or to the location of the project that could feasibly avoid or lessen significant environmental impacts while at the same time substantially attaining the basic objectives of the project. CEQA also states that an EIR should evaluate the comparative merits of the alternatives. This chapter identifies potential alternatives to the proposed project, provides a qualitative analysis of each, and compares each to the proposed project. Key provisions of *State CEQA Guidelines* Section 15126.6 pertaining to the alternatives analysis are provided below.

- ✓ An EIR shall describe a range of reasonable alternatives to the project, or 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.

- ✓ An EIR need not consider any conceivable alternative to a project. Rather, it must consider a reasonable range of feasible alternatives to foster informed decision-making and public participation. An EIR is not required to consider infeasible alternatives.

- ✓ Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment, the discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives or would be costlier.

- ✓ The range of alternatives required in an EIR is governed by a "rule of reason". That requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to those that would avoid or substantially lessen any of the significant effects of the proposed project. Of these alternatives, the EIR needs to examine in detail only the ones that the Lead Agency determines could feasibly attain most of the basic objectives of the project.

- ✓ The No Project Alternative shall be evaluated along with its impacts to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The No Project Alternative analysis shall discuss the existing conditions at the time the notice of preparation is published, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

- ✓ An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

According to CEQA, the range of feasible alternatives is selected and discussed to foster meaningful public participation and informed decision-making. Factors that may be considered when addressing the feasibility of alternatives (as described in *State CEQA Guidelines* Section 5126.6[f][1]) are environmental impacts, site suitability, economic viability, availability of infrastructure, general plan consistency, regulatory limitations, jurisdictional boundaries, and whether the proponent could reasonably acquire, control, or otherwise have access to the alternative site.

Referencing CEQA, an EIR must briefly describe the reasons for the selection and rejection of alternatives. The lead agency may make an initial determination of which alternatives are feasible and therefore merit in-depth consideration. Alternatives may be eliminated from detailed consideration in the EIR if they fail to meet project objectives, are infeasible, or do not avoid any significant environmental effects.

State CEQA Guidelines require that an EIR identify a range of reasonable Project alternatives, or alternative Project locations, that could feasibly meet the basic objectives of the Project, and evaluate the merits of the alternatives. The Guidelines also require that the No Project alternative and its impacts be evaluated, and that the discussion focus on alternatives capable of eliminating significant adverse environmental effects of the Project or reducing them to less-than-significant levels. In addition, SB 375 required analysis only includes lands outside of the current spheres of influence, while CEQA requires that all land be considered. As such, several notations throughout this chapter will refer to SB 375 land analysis and CEQA analysis, indicating which type of data the item is referring to. Within this document, the SB 375 analysis is notated for transparency and consistency with discussions that have taken place throughout the RTP/SCS planning process. To ensure CEQA requirements are met, data indicating impact levels to all lands is clearly notated throughout the chapter.

The alternative impact analysis is presented below at a summary level of detail, relying upon the base information presented in Section 3 of this EIR. This section provides a comparison only to select the environmentally superior alternative. If the alternative with the least environmental impact is the No Project alternative, then one of the other alternatives is to be identified as the environmentally superior alternative.

4.2 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

The following alternatives have been carried forward for comparative review: the No Project condition and the three 2026 RTP/SCS scenarios evaluated through the SCS process. The SCS scenarios include Scenario A, Baseline/Historical Trend; Scenario B, Multimodal Infill and Conservation; and Scenario C, Affordable Housing-Centered Growth. Scenario C is the preferred SCS scenario.

Scenario planning was used to assess how different land-use patterns and transportation-investment assumptions affect future outcomes in Merced County. The current comparison relies on available 2023/2026/2049 data, including SCS performance indicators, 2035 SB 375/EMFAC scenario outputs, 2049 model-summary VMT and lane-mile results, 2049 air quality output, conformity results, and latest planning assumptions.

Scenario C emphasizes affordable housing-centered growth, more multifamily housing near employment centers, downtowns, transit corridors, UC Merced, and selected unincorporated communities with transit access. Scenario C also includes a significant level of infill development and is intended to improve access to jobs, transit, and housing options while reducing travel demand compared to the other SCS scenarios.

The alternatives are compared below using the current performance measures and model outputs available for the 2026 RTP/SCS. For Scenarios A, B, and C, the available indicators include per-capita GHG reduction, per-capita SCS VMT, air quality ranking, farmland consumed, wetland consumed, total land consumed, and housing density. For No Project, the available quantified data include 2049 total VMT, population, VMT per capita, lane miles, and selected criteria pollutant emissions. The primary performance measures are summarized in Table 4-1.

The SCS performance indicators show that Scenario C has the strongest overall performance among the three SCS scenarios, with a 14.98 percent GHG reduction per capita, SCS VMT per capita of 12.16, the best air quality ranking, the lowest wetland conversion at 1,544 acres, the lowest total land consumed at 3,279 acres, and the highest housing density at 6.55 dwelling units per acre. Scenario B performs best for farmland consumed at 38 acres, compared to 40 acres under Scenario C and 47 acres under Scenario A.

TABLE 4-1
2026 RTP/SCS Performance Measure Results

Indicator / Metric	No Project	Scenario A Baseline / Historical Trend	Scenario B Multimodal Infill	Scenario C Affordable Housing / Preferred	Direction / Interpretation
GHG reduction/capita	Not quantified	-14.51%	-14.79%	-14.98%	Greater reduction is better; target is -14% by 2035.
SCS VMT/capita	Not quantified	-12.23	-12.19	-12.16	Lower is better, source table presents values as negative.
2049 Total VMT	8,907,871	8,819,638	8,797,398	8,775,056	Lower is better.
2049 Population	330,788	330,788	330,788	330,788	Same population basis for 2049 comparison.
2049 VMT/capita	26.93	26.66	26.60	26.53	Lower is better; Scenario C is lowest among build scenarios.
Air quality	Mixed compared with Scenario C	Worst	Moderate	Best	Lower pollutant emissions are better.
Farmland consumed	Not quantified	47 acres	38 acres	40 acres	Lower is better.
Wetland consumed	Not quantified	1,752 acres	1,606 acres	1,544 acres	Lower is better.
Total land consumed	Not quantified	3,785 acres	3,376 acres	3,279 acres	Lower is better.
Housing density	Not quantified	5.48 du/ac	6.11 du/ac	6.55 du/ac	Higher is better.
Total lane miles	2,971.73	With Project network: 3,022.99	With Project network: 3,022.99	With Project network: 3,022.99	Network condition comparison, not a separate A/B/C land-use metric.

4.3 PROJECT OBJECTIVES

The impact analyses presented in Chapter 3 of this Draft PEIR focus on the 2026 RTP/SCS and its preferred SCS scenario, Scenario C. This section summarizes additional alternatives and scenario results to compare the preferred scenario against the No Project condition and Scenarios A and B.

The 2026 RTP/SCS reflects transportation planning for Merced County through the year 2049. Merced County is one of the San Joaquin Valley Metropolitan Planning Organizations and is linked to regional air quality planning and conformity requirements. The current conformity and model data rely on updated planning assumptions, including the 2024 Regional Growth Forecast, jurisdiction-level land use assumptions, MCAG Model Version 2.1, and EMFAC2021.

The latest planning assumptions identify a four-step trip-based travel demand model using Cube Voyager, validated for the base year 2023. The base year 2023 VMT of the MCAG model is validated to within 2.5 percent of HPMS. The conformity analysis uses EMFAC2021, and all regionally significant projects from the 2026 RTP and 2027 FTIP are coded into the model network.

Chapter 2 of the 2026 RTP/SCS seeks to identify the transportation goals that meet the regional needs. Project goals, policies, and objectives in Chapter 2 are multimodal and address all modes of transportation, air quality, land-use development, and other important issues related to the RTP/SCS. Table 4-2 provides a comparison of the Environmentally Preferred Project to No Project and to each of the Alternatives. As can be seen, the Environmentally Preferred Project (Alternative 3) best meets the goals/objectives compared to the other Project Alternatives.

The project goals support review of the proposed 2026 RTP/SCS and the comparison of alternatives. Current performance information indicates that Scenario C performs best overall among the SCS scenarios for VMT, GHG reduction, air quality, wetland conversion, total land consumed, housing density, and multimodal/affordable housing-centered growth. Scenario B performs best in terms of farmland consumption. The No Project condition has the highest 2049 total VMT and VMT per capita among the current transportation comparisons. The project goal comparison is summarized in Table 4-2.

Environmentally Superior Alternative Section 15126.6(e)(2) of the CEQA Guidelines indicates that an alternatives analysis shall identify an environmentally superior alternative among the alternatives evaluated in an EIR. The current 2026 RTP/SCS comparison indicates that Scenario C provides the strongest overall performance among the SCS scenarios, including a 14.98 percent per-capita GHG reduction, 12.16 VMT per capita based on the SCS indicator results, the best air quality ranking, 1,544 acres of wetland conversion, 3,279 total acres of land consumed, and a housing density of 6.55 dwelling units per acre. The environmental issue-area comparison is summarized in Table 4-3.

A more detailed description of the potential impacts associated with each alternative is provided in this Chapter. The analysis below uses the current 2026 RTP/SCS performance measures and, where available, 2049 model outputs, including the No Project VMT comparison shown for 2049 horizon-year conditions

TABLE 4-2
Comparison of Project Objectives by Project Goal

Goal / Objective	No Project	Scenario A Baseline / Historical Trend	Scenario B Multimodal Infill	Scenario C Affordable Housing / Preferred	Justification
Active Transportation (Bicycle & Pedestrian)	Not Met	Partially Met	Partially Met	Fully Met	Scenario C has the lowest total VMT and VMT/capita among A/B/C; No Project active-transportation output was not provided.
Air Quality	Not Met	Partially Met	Partially Met	Fully Met	Scenario A/B/C ranking from current performance measures; No Project has higher ROG, PM10, and PM2.5 than Scenario C but lower CO and NOx.
Aviation	Not quantified	Not quantified	Not quantified	Not quantified	No aviation-specific performance measure was provided in the current metric set.
Energy	Not Met	Partially Met	Partially Met	Fully Met	No Project VMT/capita is 26.93; Scenario A/B/C are 26.66, 26.60, and 26.53. Scenario C also has the lowest 2035 gasoline fuel output among A/B/C.
Goods Movement	Not quantified	Partially Met	Partially Met	Partially Met	No dedicated goods-movement metric was provided. Scenario C has the lowest total VMT among the three SCS scenarios.
Highways, Streets, and Roads	Not Met	Partially Met	Partially Met	Fully Met	No Project network has 2,971.73 lane miles vs. 3,022.99 lane miles for the with-project network, and it has the highest VMT/capita.
Land Use Development Patterns and Strategies	No separate land-use output	Partially Met	Fully Met	Fully Met	Scenario B has the lowest farmland consumption. Scenario C has the lowest total land consumed, lowest wetland consumed, and highest density.
Outreach and Coordination	Not quantified	Not quantified	Not quantified	Not quantified	No outreach/coordination performance measure was provided in the current metric set.
Passenger Rail	Not quantified	Not quantified	Not quantified	Not quantified	No passenger-rail performance measure was provided in the current metric set.
Reduce Project Delivery Delays	Not quantified	Not quantified	Not quantified	Not quantified	No project-delivery performance measure was provided in the current metric set.
Reliability & Congestion	Not Met	Partially Met	Partially Met	Fully Met	No Project has 8.91M VMT and 26.93 VMT/capita. Scenario C has the lowest 2049 total VMT and VMT/capita among A/B/C.
Safety for all Roadway Users	Not quantified	Not quantified	Not quantified	Not quantified	No crash, injury, fatality, or safety countermeasure metric was provided in the current data.
Smart Infrastructure	Not quantified	Not quantified	Not quantified	Not quantified	No smart-infrastructure performance measure was provided in the current metric set.
Social Equity and Environmental Justice	Not quantified	Not quantified	Not quantified	Not quantified	No equity-distribution or disadvantaged-community metric was provided in the current comparison data.
Sustainable Communities	No GHG value; highest VMT/capita	Meets target: -14.51%	Meets target: -14.79%	Meets target: -14.98%	Scenario A/B/C all meet the -14% GHG reduction target in the current performance measures. No Project GHG reduction/capita was not provided.
System Preservation	Not quantified	Not quantified	Not quantified	Not quantified	No pavement condition or system-preservation metric was provided in the current metric set.
Transit	Not quantified	Not quantified	Not quantified	Not quantified	No current transit mode share or ridership value was provided for the scenarios or No Project.
Transportation Financing	Not quantified	Not quantified	Not quantified	Not quantified	No financing or funding performance measure was provided in the current metric set.
Wildfire	Not quantified	Not quantified	Not quantified	Not quantified	No wildfire performance measure was provided in the current metric set.

TABLE 4-2 (Cont'd)
Comparison of Project Objectives by Project Goal

MCAG Goal 1 – Develop a comprehensive, safe, and connected multimodal transportation network to enhance mobility, support economic development, and serve both urban and rural	Not Met	Partially Met	Partially Met	Fully Met	Scenario C has the lowest 2049 total VMT and VMT/capita among A/B/C, while the with-project network adds lane miles compared with No Project. No direct urban/rural multimodal-service metric was provided.
MCAG Goal 2 – Develop a safe, efficient, and reliable regional transportation system.	Not Met	Partially Met	Partially Met	Fully Met	No Project has the highest 2049 total VMT and VMT/capita. Scenario C performs best among A/B/C on VMT and VMT/capita; no crash, injury, or reliability-specific metric was provided.
MCAG Goal 3 – Create thriving communities with access to sustainable and resilient multimodal transportation options that enhance mobility, connectivity, improve air quality, and enhance quality of life.	Not Met	Partially Met	Partially Met	Fully Met	Scenario C has the greatest GHG reduction/capita among A/B/C, the lowest VMT/capita, and the best air-quality ranking. No Project has the highest VMT/capita and mixed air-quality results compared with Scenario C.
MCAG Goal 4 – Support a vibrant, integrated network of land use, housing, and transportation that drives economic development, promotes sustainability, expands access to jobs and services, and enhances overall quality of life.	No separate land-use output	Partially Met	Partially Met	Fully Met	Scenario C has the lowest total land consumed and highest housing density among A/B/C. Scenario B performs well on farmland consumption, but jobs/services and economic-development access were not directly quantified.
MCAG Goal 5 – Implement extensive, wide-ranging transportation planning strategies to enhance accessibility for all.	Not quantified	Partially Met	Partially Met	Partially Met	The build scenarios include RTP/SCS planning strategies and all reduce VMT/capita compared with No Project. However, no direct accessibility-for-all or equity-distribution metric was provided.
MCAG Goal 6 – Bolster and strengthen project delivery and reduce project delays by working with local jurisdictions to develop plans, projects, and comprehensive funding strategies.	Not quantified	Not quantified	Not quantified	Not quantified	No project-delivery, schedule-delay, jurisdictional coordination, or funding-strategy performance measure was provided in the current metric set.
MCAG Goal 7 – Integrate and leverage technologies and innovations to create a multimodal network that prioritizes accessibility, sustainability, and economic growth while adapting to future transportation needs.	Not quantified	Not quantified	Not quantified	Not quantified	No smart-infrastructure, technology, innovation, or future-readiness performance measure was provided in the current metric set.

TABLE 4-3

Comparison of Project Alternatives by Environmental Issue Area

Environmental Issue Areas	Project and Project Alternatives			
	No Project / No Build	Scenario A Baseline / Historical Trend	Scenario B Multimodal Infill & Conservation	Scenario C Affordable Housing-Centered Growth (Preferred Project Alternative)
Aesthetics	☒	☒	=	☑
Affordable Housing	☒	☒	=	☑
Agricultural & Forestry Resources	☒	☒	☑	☑
Air Quality	☒	☒	☒	☑
Biotic Resources	☒	☒	=	☑
Climate Change/Greenhouse Gases	☒	☒	☒	☑
Cultural Resources & Tribal Cultural Resources	☒	☒	=	☑
Energy & Energy Conservation	☒	☒	☒	☑
Geology/Soils/Minerals	☒	☒	=	☑
Hazardous Materials	☒	=	=	☑
Hydrology & Water Resources	☒	☒	=	☑
Land Use & Planning	☒	☒	☒	☑
Noise	☒	☒	=	☑
Population, Housing & Employment	☒	☒	=	☑
Public Utilities, Other Utilities, & Services	☒	=	=	☑
Social and Economic Effects	☒	=	=	☑
Transportation/Traffic	☒	☒	☒	☑
Total Environmentally Superior or Similar Areas:	0	3	12	17
	☒	Falls short of the Project Alternative		
	☑	Meets or addresses environmental quality		
	=	Has similar impacts or benefits to the Project Alternative		

4.4 PREFERRED PROJECT ALTERNATIVE

Scenario C (Preferred Project Alternative)

Scenario C, the Affordable Housing-Centered Growth scenario, was selected as the preferred SCS scenario for the 2026 RTP/SCS. Scenario C places greater emphasis on multifamily housing near jobs, transit corridors, downtowns, UC Merced, and selected unincorporated communities with transit access. The scenario is intended to reduce commute distances, improve multimodal access, and better align housing growth with employment and transportation options.

Scenario C has the highest housing density among the three SCS scenarios at 6.55 dwelling units per acre. It also achieves the greatest per-capita GHG reduction at 14.98 percent and the lowest per-capita SCS VMT at 12.16. These results indicate that Scenario C provides the strongest overall SCS performance among the three scenarios.

Scenario C also performs best in the current SCS comparison for air quality, wetland conversion, and total land consumed. Scenario C is ranked best for air quality, would convert 1,544 acres of wetlands, and would consume 3,279 total acres of land. Scenario B consumes the least important farmland at 38 acres, while Scenario C consumes 40 acres, and Scenario A consumes 47 acres.

In the 2049 transportation comparison, Scenario C has the lowest total VMT and VMT per capita among the three RTP/SCS scenarios. Scenario C has 8,775,056 total VMT and 26.53 VMT per capita, compared to 8,797,398 total VMT and 26.60 VMT per capita under Scenario B and 8,819,638 total VMT and 26.66 VMT per capita under Scenario A. The No Project condition has a total of 8,907,871 VMT and 26.93 VMT per capita.

The 2035 SB 375/EMFAC custom output also shows Scenario C with the lowest VMT, trips, CO2 total exhaust, and gasoline fuel use among the three SCS scenarios. Scenario C has 3,915,754 VMT, 581,548 trips, 1,734.19 tons/day of CO2 total exhaust, and 183.193 thousand gallons/day of gasoline fuel use. Scenario A has 3,937,734 VMT, 584,812 trips, 1,744.04 tons/day of total CO2 exhaust, and 184.234 thousand gallons/day of gasoline use. Scenario B falls between Scenarios A and C for these metrics.

The preferred scenario also reflects a transportation investment approach that emphasizes maintenance, transit, active transportation, safety, and targeted capacity improvements. The constrained 2026 RTP/SCS project list and regionally significant projects are reflected in the model network used for conformity and alternatives comparison.

4.5 OTHER PROJECT ALTERNATIVES

The following sections compare the Preferred Project Alternative to the No Project condition and to the other SCS scenarios. The current comparison uses only the metrics available for the 2026 RTP/SCS, the 2049 No Project analysis, the 2049 air quality comparison data, and the custom 2035 SB 375/EMFAC scenario output files.

No Project Alternative

California Environmental Quality Act (CEQA) regulations require assessment of a No Project Alternative. For the current 2026 RTP/SCS comparison, the available No Project information is represented by the 2049 No Project model condition. The available current No Project metrics include total VMT, population, VMT per capita, lane miles, and selected criteria pollutant emissions. Separate No Project values were not provided for GHG reduction per capita, SCS VMT per capita, farmland consumed, wetland consumed, total land consumed, or housing density.

The current No Project condition is distinct from the RTP/SCS scenarios. The 2049 With Project network has 3,022.99 total lane miles, compared to 2,971.73 under No Project. Although the No Project network has fewer lane miles, it produces higher total VMT and higher VMT per capita than the With Project scenarios.

The 2049 No Project condition has a total of 8,907,871 VMT and 26.93 VMT per capita. This is higher than Scenario C, which has a total of 8,775,056 VMT and 26.53 VMT per capita. The No Project condition is therefore less favorable than the preferred scenario in terms of transportation efficiency, congestion-related effects, energy use, and VMT-related emissions exposure.

Impacts could result from this alternative, particularly where fewer planned transportation improvements and higher VMT would affect congestion, air quality, energy use, and transportation system performance. The available current metrics are discussed below. For scenario-level SB 375/EMFAC outputs, the custom 2035 files provide values only for Scenarios A, B, and C and do not include a No Project output.

- ✓ **Aesthetics**
  The No Project condition has the highest 2049 VMT and VMT per capita among the current transportation comparisons. Higher VMT and fewer planned improvements may contribute to greater congestion, travel delays, and associated secondary effects, such as increased exposure to light and glare along congested corridors, compared to the preferred scenario.

Because the current quantified No Project information is primarily transportation-based, this comparison relies on the available VMT and lane-mile metrics for No Project, as well as the SCS indicator results for the three RTP/SCS scenarios. Scenario C reduces total VMT by approximately 132,815 miles compared to the 2049 No Project condition.

✓ **Agricultural Resources**

The current SCS scenario indicators report the important farmland consumed for Scenarios A, B, and C. Scenario A would consume 47 acres, Scenario B 38 acres, and Scenario C 40 acres. The No Project dataset available for this comparison does not include a separate current farmland acreage metric; therefore, the No Project discussion is limited to the available current transportation and air quality metrics.

✓ **Air Quality**

Air quality impacts are determined by considering criteria pollutants such as reactive organic gases, carbon monoxide, nitrogen oxides, PM10, and PM2.5. The available 2049 air quality comparison data show that No Project has higher VMT than Scenario C and higher ROG, PM10, and PM2.5 emissions. No Project ROG is 0.6672 tons/day compared to 0.6181 under Scenario C; No PM10 is 0.5988 tons/day compared to 0.3980; and No Project PM2.5 is 0.2419 tons/day compared to 0.1588. The same data show lower CO and NOx for No Project than Scenario C, so the criteria pollutant comparison is mixed by pollutant rather than uniformly worse across all pollutants. The 2049 criteria pollutant comparison is summarized in Table 4-4.

The conformity post-processing results indicate that the 2026 RTP conformity analysis passes for the reported ozone, PM10, and PM2.5 standards and analysis years. For example, the 2015 ozone results show 0.9 tons/day of ROG and 2.6 tons/day of NOx in 2035, and 0.7 tons/day of ROG and 2.8 tons/day of NOx in 2049, with both pollutants passing the applicable budgets in those years.

TABLE 4-4

Comparison of Project Alternatives Considering Air Emission Results

Metric	Units	2023 Baseline	2049 No Project	2049 Scenario C	No Project Minus Scenario C	% No Build vs Scenario C	Notes
VMT	vehicle miles	7,525,218	8,907,871	8,775,056	132,815	1.5%	No Build VMT is higher than Build Scenario C.
ROG	tons/day	1.8509	0.6672	0.6181	0.0491	7.9%	No Build is higher.
CO	tons/day	13.2148	4.9045	6.4200	-1.5155	-23.6%	No Build is lower in Table 24.
NOx	tons/day	6.7968	3.3594	4.3310	-0.9716	-22.4%	No Build is lower in Table 24.
CO2	tons/day	14,386.0433	Not provided	20,644.7486	Not calculated	Not calculated	No Build CO2 value is blank in Table 24.
PM10	tons/day	0.5444	0.5988	0.3980	0.2008	50.5%	No Build is higher.
PM2.5	tons/day	0.2505	0.2419	0.1588	0.0831	52.3%	No Build is higher.

- ✓ **Biotic Resources**
  The current No Project transportation metrics do not include a separate, quantified value for biotic resources or wetland acreage. Among the SCS scenarios, Scenario C has the lowest wetland conversion at 1,544 acres, compared to 1,606 acres under Scenario B and 1,752 acres under Scenario A.

- ✓ **Climate Change**
  Climate change impacts are evaluated in relation to VMT and greenhouse gas reduction performance. The available 2049 No Project condition has 8,907,871 VMT and 26.93 VMT per capita, but the current No Project per-capita GHG reduction value was not provided. Among the SCS scenarios, Scenario C achieves the greatest GHG reduction per capita at 14.98 percent, compared to 14.79 percent under Scenario B and 14.51 percent under Scenario A. All three SCS scenarios meet the 14 percent target, with Scenario C performing best.

- ✓ **Cultural Resources and Tribal Cultural Resources**
  The available current No Project metrics do not include a separate quantified cultural or tribal cultural resources acreage value. However, No Project would have higher VMT and VMT per capita than the preferred scenario, which may increase transportation-related pressure on the regional system compared to Scenario C.

- ✓ **Energy & Energy Conservation**
  The No Project condition has a higher VMT per capita than each of the 2049 With 2026 RTP/SCS scenarios. No Project VMT per capita is 26.93, compared to 26.66 for Scenario A, 26.60 for Scenario B, and 26.53 for Scenario C. The 2035 SB 375/EMFAC output also shows Scenario C with the lowest gasoline fuel use among the SCS scenarios, at 183.193 thousand gallons/day, compared to 183.627 under Scenario B and 184.234 under Scenario A.

- ✓ **Geology/Soils/Mineral Resources**
  The available current No Project metrics do not include a separately quantified acreage value for geology, soils, or mineral resources. The comparison is therefore based on the available transportation and land consumption indicators, with Scenario C showing the lowest total land consumption among the SCS scenarios at 3,279 acres.

- ✓ **Hazardous Materials**
  Hazardous materials impacts are related, in part, to exposure within the transportation system. The No Project condition has the highest total VMT and highest VMT per capita among the current 2049 comparisons, which could increase exposure to transportation-related hazards compared to the preferred scenario.

- ✓ **Hydrology and Water Resources**
  Hydrology and water resources impacts are evaluated in relation to future development patterns and transportation improvements. The current SCS indicator results show that Scenario C consumes the least total land among the three SCS scenarios at 3,279 acres, compared to 3,376 acres under Scenario B and 3,785 acres under Scenario A. The current No Project metrics do not include a separately quantified water-resources acreage value.

- ✓ **Land Use and Planning**
  Land use and planning impacts are evaluated in relation to the future development pattern and transportation network. The current No Project condition has fewer total lane miles than the With Project network and higher total VMT than each RTP/SCS scenario. The With Project network includes 3,022.99 total lane miles compared to 2,971.73 under No Project.

- ✓ **Noise**
  Noise impacts are generally related to traffic volumes, roadway operations, and congestion. The No Project condition has the highest total VMT and highest VMT per capita among the current 2049 comparisons, while Scenario C has the lowest VMT and VMT per capita among the RTP/SCS scenarios.

- ✓ **Population, Housing & Employment**
  Population, housing, and employment impacts are considered in relation to the regional growth assumptions and transportation system performance. The 2049 No Project and With 2026 RTP/SCS scenarios use a population of 330,788 in the current VMT comparison. Scenario C is intended to address affordable housing issues by increasing multifamily housing near jobs, transit corridors, downtowns, UC Merced, and selected transit-served unincorporated communities.

- ✓ **Public Utilities, Other Utilities & Services Systems**
  Public utilities, other utilities, and service system impacts are evaluated in relation to system demand and transportation access. The No Project condition would have higher VMT and VMT per capita than the preferred scenario and fewer total lane miles than the With Project network. Scenario C provides the lowest VMT per capita among the RTP/SCS scenarios.

- ✓ **Social and Economic Effects**
  Scenario C is expected to provide broader social and economic benefits than the No Project condition by emphasizing affordable housing-centered growth, improved access to jobs and transit, and increased multimodal transportation options. The preferred scenario includes investments in transit, bicycle, and pedestrian facilities, and maintenance, while also reducing VMT compared to No Project.

- ✓ **Transportation**
  The No Project condition has the highest total VMT and VMT per capita in the current 2049 transportation comparison. No Project has 8,907,871 total VMT and 26.93 VMT per capita. Scenario C, the preferred scenario, has a total of 8,775,056 VMT and 26.53 VMT per capita. No Project is therefore approximately 132,815 VMT higher than Scenario C and approximately 1.5 percent higher on both total VMT and VMT per capita.

- ✓ **Wildfire**
  Wildfire impacts were not separately quantified in the current 2026 RTP/SCS data. However, the No Project Alternative would have the highest 2049 total VMT and VMT per capita among the alternatives, which could reduce system efficiency during wildfire evacuation or emergency response conditions. Therefore, the No Project Alternative would perform less favorably than the RTP/SCS scenarios for wildfire-related considerations.

Project Scenario A

Scenario A, Baseline/Historical Trend, assumes that the Merced region would continue its current development patterns and transportation investments, based on existing plans, trends, and policies, without significant changes. Scenario A does not emphasize infill development and instead focuses on suburban single-family neighborhoods.

Scenario A has a higher reliance on cars compared to the other SCS scenarios and lower accessibility to transit, bicycle, and pedestrian infrastructure. Among the SCS scenarios, Scenario A has the highest SCS VMT per capita at 12.23 and the lowest per-capita GHG reduction at 14.51 percent. The custom 2035 SB 375/EMFAC output also shows that Scenario A has the highest all-vehicle VMT, trips, total CO2 exhaust, gasoline fuel use, and diesel fuel use among the three SCS scenarios.

In the 2049 transportation comparison, Scenario A has a total of 8,819,638 VMT and 26.66 VMT per capita. This is lower than the No Project condition, but higher than Scenario B and Scenario C. In the custom 2035 SB 375/EMFAC report, Scenario A also has the highest VMT, trips, CO2 total exhaust, and gasoline fuel use among the three SCS scenarios.

Scenario A is ranked worst for air quality among the three SCS scenarios. It also has the highest total land consumed at 3,785 acres, the highest wetland conversion at 1,752 acres, the highest important farmland consumption at 47 acres, and the lowest housing density at 5.48 dwelling units per acre.

Scenario A represents the Baseline/Historical Trend scenario and generally continues existing development patterns with lower emphasis on infill, multimodal investment, and compact growth than Scenarios B and C.

- ✓ **Aesthetics**
  Scenario A would likely have greater aesthetic impacts than Scenario C because it includes a greater continuation of baseline/historical development patterns, a higher total land area consumed, and a greater reliance on automobiles. Scenario A has the highest total land consumption among the SCS scenarios at 3,785 acres.

- ✓ **Agricultural Resources**
  Referencing the current SCS indicator results, Scenario A would consume 47 acres of important farmland, the highest amount among the three SCS scenarios. Scenario B would consume 38 acres, and Scenario C would consume 40 acres.

- ✓ **Air Quality**
  Air quality impacts are strongly related to VMT. Scenario A is ranked worst for air quality among the three SCS scenarios and has the highest 2049 With Project VMT of 8,819,638. Scenario A also has the highest 2049 With Project VMT per capita among the three scenarios at 26.66. The custom 2035 SB 375/EMFAC output similarly shows Scenario A with the highest all-vehicle VMT and CO2 total exhaust among the three SCS scenarios.

- ✓ **Biotic Resources**
  Scenario A would likely have greater impacts on biotic resources than Scenario C because it has the highest wetland conversion and total land consumption among the three SCS scenarios. Scenario A would convert 1,752 acres of wetlands and consume a total of 3,785 acres of land.

- ✓ **Climate Change**
  Scenario A achieves a 14.51 percent per-capita GHG reduction, which meets the 14 percent target but is the lowest reduction among the three SCS scenarios. Scenario B achieves a 14.79 percent reduction, and Scenario C achieves the highest reduction at 14.98 percent.

- ✓ **Cultural Resources and Tribal Cultural Resources**
  Scenario A would likely have greater potential for impacts on cultural resources, including tribal cultural resources, than Scenario C because it consumes more total land and converts more wetland acreage than the preferred scenario.

- ✓ **Energy & Energy Conservation**
  Scenario A has a higher VMT per capita than Scenarios B and C. In the 2049 transportation comparison, Scenario A has 26.66 VMT per capita, compared to 26.60 under Scenario B and 26.53 under Scenario C. Higher VMT per capita generally indicates greater transportation energy demand.

Scenario A also has the highest 2035 gasoline fuel use in the custom SB 375/EMFAC files at approximately 184.23 thousand gallons/day.

- ✓ **Geology/Soils/Mineral Resources**
  Impacts related to geology, soils, and mineral resources would generally be associated with the amount and location of new development. Scenario A consumes the most total land among the SCS scenarios at 3,785 acres, compared to 3,376 acres under Scenario B and 3,279 acres under Scenario C.

- ✓ **Hazardous Materials**
  Scenario A has higher VMT than Scenarios B and C, which may increase exposure to transportation-related hazards compared to the preferred scenario. Scenario A has 8,819,638 total VMT in 2049, compared to 8,775,056 under Scenario C.

- ✓ **Hydrology and Water Resources**
  Scenario A has the highest total land consumption and wetland conversion among the SCS scenarios. As a result, Scenario A would likely have greater impacts on hydrology and water resources than the preferred scenario, where those impacts are associated with land conversion.

- ✓ **Land Use and Planning**
  Scenario A reflects the baseline/historical trend and places less emphasis on infill development than Scenarios B and C. Scenario A has the lowest housing density among the SCS scenarios at 5.48 dwelling units per acre.

- ✓ **Noise**
  Scenario A has a higher total VMT and VMT per capita than Scenarios B and C. This may result in a comparatively higher level of transportation-related noise exposure than in the preferred scenario.

- ✓ **Population, Housing & Employment**
  Scenario A provides lower housing density than Scenarios B and C and places greater emphasis on suburban, single-family development patterns. Scenario A has a housing density of 5.48 dwelling units per acre, compared with 6.11 in Scenario B and 6.55 in Scenario C.

- ✓ **Public Utilities, Other Utilities & Services Systems**
  Scenario A would have similar regional utility and service demands associated with projected growth, but its lower housing density and higher total land area consumed may reduce the efficiency of infrastructure and service delivery compared to the preferred scenario.

- ✓ **Social and Economic Effects**
  Scenario A provides fewer of the social and economic benefits associated with the preferred scenario because it has lower housing density, less emphasis on affordable-housing-centered growth, and greater reliance on automobile travel.

- ✓ **Transportation**
  Scenario A has a higher total VMT and VMT per capita than Scenarios B and C. In the 2049 transportation comparison, Scenario A has 8,819,638 total VMT and 26.66 VMT per capita, compared to 8,775,056 total VMT and 26.53 VMT per capita under Scenario C. The custom 2035 SB 375/EMFAC output also shows that Scenario A has the highest all-vehicle VMT, trips, total CO2 exhaust, and fuel use among the three SCS scenarios.

- ✓ **Wildfire**
  Scenario A would perform better than the No Project Alternative for wildfire-related considerations because it includes the 2026 RTP/SCS transportation network and results in lower 2049 VMT and VMT per capita than the No Build condition. However, because Scenario A continues more conventional development patterns and places less emphasis on infill growth, it would perform less favorably than Scenarios B and C.

Project Scenario B

Scenario B, Multimodal Infill and Conservation, allocates growth at higher densities along major transit corridors and in areas where environmental and agricultural land can be preserved as much as possible. Infill development is an important goal of Scenario B.

Scenario B emphasizes higher-density development near major rail stations and existing urban areas along major transit corridors. It also supports investments in bicycle, pedestrian, and transit infrastructure to reduce dependence on cars.

Scenario B performs better than Scenario A across several SCS indicators. It achieves a 14.79 percent per-capita GHG reduction, has a 12.19 SCS VMT per capita, and is ranked moderate for air quality. Scenario B also consumes the least important farmland among the SCS scenarios at 38 acres.

Scenario B has the lowest level of important farmland consumption among the three SCS scenarios, at 38 acres. It also converts 1,606 acres of wetlands, consumes 3,376 total acres of land, and has a housing density of 6.11 dwelling units per acre.

In the 2049 transportation comparison, Scenario B has a total of 8,797,398 VMT and 26.60 VMT per capita. These values are lower than those in Scenario A and No Project, but higher than those in Scenario C. In the custom 2035 SB 375/EMFAC report, Scenario B also falls between Scenario A and Scenario C for VMT, trips, CO2 total exhaust, and gasoline fuel use.

Compared to Scenario A, Scenario B provides a more compact and multimodal land-use pattern, with lower per-capita VMT, lower total land consumption, lower wetland conversion, and lower consumption of important farmland.

Scenario B would likely have fewer aesthetic impacts than Scenario A due to its greater emphasis on infill and conservation. However, Scenario C performs better in terms of total land consumed and housing density.

- ✓ **Aesthetics**
  Scenario B would generally reduce aesthetic impacts compared to the No Project Alternative and Scenario A because it emphasizes infill growth, higher density development, and development within existing urban areas. By reducing outward expansion and consuming less total land than Scenario A, Scenario B would help limit visual changes to undeveloped rural, agricultural, and natural areas. However, Scenario C would perform slightly better overall because it consumes the least total land.

- ✓ **Agricultural Resources**
  Scenario B performs best for important farmland among the SCS scenarios, consuming 38 acres compared to 40 acres under Scenario C and 47 acres under Scenario A.

- ✓ **Air Quality**
  Scenario B is ranked moderate for air quality. It performs better than Scenario A but worse than Scenario C, which is ranked best for air quality among the SCS scenarios.

- ✓ **Biotic Resources**
  Scenario B converts 1,606 acres of wetlands, which is less than Scenario A but more than Scenario C. Scenario C has the lowest wetland conversion at 1,544 acres.

- ✓ **Climate Change**
  Scenario B achieves a 14.79 percent per-capita GHG reduction, which exceeds the 14 percent target and performs better than Scenario A. Scenario C achieves the highest reduction at 14.98 percent.

- ✓ **Cultural Resources and Tribal Cultural Resources**
  Scenario B would likely have fewer cultural resources and tribal cultural resources impacts than Scenario A, where impacts are associated with land conversion. Scenario B consumes 3,376 total acres of land, compared to 3,785 acres under Scenario A and 3,279 acres under Scenario C.

- ✓ **Energy & Energy Conservation**
  Scenario B has lower VMT per capita than Scenario A but higher than Scenario C. In the 2049 transportation comparison, Scenario B has 26.60 VMT per capita, compared to 26.53 under Scenario

C. Scenario B also has higher 2035 SB 375/EMFAC VMT, trips, CO2 total exhaust, and fuel use than Scenario C, but lower values than Scenario A.

- ✓ **Geology/Soils/Mineral Resources**
  Impacts related to geology, soils, and mineral resources would generally be associated with land conversion. Scenario B consumes 3,376 total acres of land, which is less than Scenario A but more than Scenario C.

- ✓ **Hazardous Materials**
  Scenario B has lower VMT than Scenario A but higher VMT than Scenario C. Therefore, transportation-related hazardous materials exposure would likely be lower than Scenario A but higher than Scenario C.

- ✓ **Hydrology and Water Resources**
  Scenario B would generally reduce hydrology and water resources impacts when compared to the No Scenario B would reduce hydrology and water resources impacts compared to the No Project Alternative and Scenario A because it would consume less total land and convert fewer wetlands. Scenario B would convert 1,606 acres of wetlands and consume 3,376 acres of total land, both lower than Scenario A. However, Scenario C would perform slightly better because it would convert fewer wetlands and consume less total land overall.

- ✓ **Land Use and Planning**
  Scenario B supports infill and conservation, helping reduce the potential for outward growth compared to Scenario A. Scenario B has a housing density of 6.11 dwelling units per acre, higher than Scenario A but lower than Scenario C.

- ✓ **Noise**
  Scenario B has lower VMT and VMT per capita than Scenario A, which may reduce transportation-related noise exposure compared to the baseline/historical trend scenario. Scenario C remains the lowest VMT scenario.

- ✓ **Population, Housing & Employment**
  Scenario B provides higher housing density than Scenario A and lower density than Scenario C. It has a housing density of 6.11 dwelling units per acre, compared to 6.55 under Scenario C.

- ✓ **Public Utilities, Other Utilities & Services Systems**
  Scenario B would likely provide more efficient utility and service delivery than Scenario A due to its more compact development pattern. Scenario C has the highest housing density and lowest total land consumption among the SCS scenarios.

- ✓ **Social and Economic Effects**
  Scenario B provides social and economic benefits associated with infill development and multimodal access. Scenario C offers the strongest affordable-housing-centered approach and was selected as the preferred scenario.

- ✓ **Transportation/Traffic**
  Scenario B would result in 8,797,398 total VMT and 26.60 VMT per capita in 2049, which is lower than the No Project Alternative and Scenario A, but slightly higher than Scenario C. Therefore, Scenario B would reduce transportation and traffic impacts compared to the higher-VMT alternatives. However, Scenario C would perform slightly better because it has the lowest total VMT and VMT per capita among the RTP/SCS scenarios.

- ✓ **Wildfire**
  Scenario B would generally reduce wildfire-related impacts compared to the No Project Alternative and Scenario A because it emphasizes compact development, infill growth, conservation of natural and agricultural lands, and multimodal transportation access. By reducing outward expansion into undeveloped areas, Scenario B would help limit growth patterns that could increase wildfire exposure at the urban edge. Scenario B would be generally similar to Scenario C for wildfire-related considerations, although Scenario C performs slightly better for VMT while Scenario B provides strong conservation-related benefits.

4.6 ENVIRONMENTALLY PREFERRED ALTERNATIVE

Based on the analysis and results described in Chapter 3 and Sections 4.4 and 4.5 of this Chapter, the Environmentally Preferred Project Alternative is the implementation of the 2026 RTP/SCS Scenario C. The Project is considered the Environmentally Preferred Alternative as noted below.

4.6.1 Meets Project Objectives

This section compares the impacts of the alternatives under consideration to those of the proposed Project, Scenario C. The current performance metrics indicate that Scenario C performs best overall among the SCS scenarios, reduces VMT compared to the No Project condition, and has the lowest 2035 SB 375/EMFAC VMT, trips, CO2 total exhaust, and fuel use among Scenarios A, B, and C.

4.6.2 Environmentally Superior Alternative

Environmentally Superior Alternative Section 15126.6(e)(2) of the CEQA Guidelines indicates that an analysis of alternatives to a proposed project shall identify an environmentally superior alternative among

the alternatives evaluated in an EIR. The CEQA Guidelines also state that, should it be determined that the No Project Alternative is the environmentally superior alternative, the EIR shall identify another environmentally superior alternative among the remaining alternatives.

In this case, the No Project Alternative would not be considered environmentally superior overall. Although it would entail fewer lane miles and fewer planned improvements, the current 2049 No Project condition would result in higher total VMT and higher VMT per capita than each of the 2049 With 2026 RTP/SCS scenarios. No Project has 8,907,871 total VMT and 26.93 VMT per capita, compared to 8,775,056 total VMT and 26.53 VMT per capita under Scenario C.

Scenario B performs well for important farmland preservation and multimodal infill, but Scenario C performs best overall across the current SCS indicators. Scenario C has the greatest GHG reduction, lowest SCS VMT per capita, best air quality ranking, lowest wetland conversion, lowest total land consumed, highest housing density, and lowest 2049 total VMT and VMT per capita among the SCS scenarios.

Scenario B does perform significantly better than Alternative Scenario A; therefore, Scenario B is the Environmentally Superior Alternative.

4.6.3 Reduces Significant Impacts

Scenario C will reduce significant impacts to a greater extent than the other SCS scenarios based on the current performance indicators. In addition, the Project is considered the Environmentally Preferred Alternative because it is:

- ✓ ***Feasible, Implementable, Achievable***

  The Preferred Project Alternative is based on current planning assumptions, the 2024 Regional Growth Forecast, input from local jurisdictions, public engagement, and the 2026 RTP/SCS scenario development process. The model inputs rely on the latest conformity assumptions, a 2023 base-year validated travel model, and EMFAC2021. Scenario C was selected through the 2026 RTP/SCS process as the preferred scenario.

  This alternative directs growth toward affordable housing-centered locations, including downtowns, employment centers, transit corridors, UC Merced, and selected transit-served unincorporated communities. It also maintains a balanced approach to transportation investment, including maintenance, transit, bicycle and pedestrian improvements, and targeted capacity improvements.

  As described in the current RTP/SCS materials, MCAG developed performance measures to help quantify and evaluate the tangible results of the 2026 RTP/SCS. The current indicators include per-capita GHG emissions, per-capita VMT, air quality, farmland consumed, wetland area consumed, total

land area consumed, and housing density. An additional 2049 transportation and air quality outputs provide a basis for comparing the preferred scenario to the No Project condition.

The 2026 RTP/SCS evaluated the long-range outlook of three SCS scenarios and the available 2049 No Project transportation comparison. Scenario C was selected as the preferred scenario because it provides the best overall balance of climate performance, reduced VMT, air quality, compact growth, housing density, and environmental resource preservation. Scenario C is also the best-performing scenario among the custom 2035 SB 375/EMFAC outputs for VMT, trips, total CO2 exhaust, and fuel use.

Once Scenario C was selected as the preferred scenario, its performance was compared against the available No Project transportation metrics. Scenario C has 8,775,056 total VMT and 26.53 VMT per capita, compared to 8,907,871 total VMT and 26.93 VMT per capita under No Project. No Project also has fewer total lane miles than the With Project network: 2,971.73 lane miles versus 3,022.99.

The 2026 RTP/SCS is based on a preferred land use and transportation investment scenario, referred to as Scenario C. Scenario C defines a future growth pattern focused on affordable housing, increased multifamily housing near jobs and transit, improved access to multimodal transportation options, and lower VMT compared to the No Project condition.

Considering the performance measures summarized in this Chapter, Scenarios A and B are not preferred overall.

The current data also indicate that the 2026 RTP conformity analysis passes the reported ozone, PM10, and PM2.5 emissions budgets. This supports the conclusion that the preferred 2026 RTP/SCS scenario can advance the region's transportation and land use goals while meeting applicable conformity requirements.

<u>Scenario A is not preferred because it results in the:</u>

- Highest SCS VMT per capita among the three scenarios at 12.23.
- Lowest per-capita GHG reduction among the three scenarios at 14.51 percent.
- Worst air quality ranking among the three SCS scenarios.
- Highest 2049 With Project VMT among the SCS scenarios at 8,819,638.
- Highest 2049 With Project VMT per capita among the SCS scenarios at 26.66.
- Lowest housing density among the SCS scenarios at 5.48 dwelling units per acre.
- Highest total land consumed among the SCS scenarios at 3,785 acres.
- Highest wetland conversion among the SCS scenarios at 1,752 acres.
- Highest important farmland consumed among the SCS scenarios at 47 acres.
- Less emphasis on infill development and multimodal accessibility compared to Scenarios B and C.

- Greater reliance on automobile travel compared to Scenarios B and C.

✓ ***Consistent with Local General Plans and Policies***

Land uses within each city and the County are governed by general plans, which designate appropriate land uses throughout each jurisdiction and define goals, policies, and objectives. Scenario C was developed through the 2026 RTP/SCS process to support the regional growth forecast while emphasizing affordable housing, multimodal access, and a more compact development pattern. Scenario C has the highest housing density among the SCS scenarios, at 6.55 dwelling units per acre, and the lowest total land consumed, at 3,279 acres.

✓ ***Reduces Air Pollution***

To serve the needs of a growing and diverse population and meet air quality objectives, Scenario C encourages land-use patterns and transportation investments that reduce dependence on automobiles and support transit, bicycle, and pedestrian travel. Scenario C is ranked best for air quality among the SCS scenarios and has the lowest SCS VMT per capita at 12.16. The available 2049 air quality comparison data also compares No Project with Scenario C and shows that No Project has higher ROG, PM10, and PM2.5 than Scenario C, although No Project is lower for CO and NOx.

✓ ***Meets GHG Reduction Targets***

The Preferred Project Alternative takes into consideration the requirements of SB 375 and the Sustainable Communities Strategy. The CARB GHG target for the MCAG region is a 14 percent per-capita reduction by 2035 compared to the 2005 level. Scenario C achieves a 14.98 percent per-capita GHG reduction and therefore meets the 2035 target. The custom 2035 SB 375/EMFAC output for Scenario C also shows the lowest CO2 total exhaust among the three SCS scenarios at 1,734.19 tons/day.

✓ ***Achieves the Goals of SB 375***

The strategies in the 2026 RTP/SCS aim to reduce travel and provide additional travel choices. Scenario C supports more compact development near jobs and transit, increases transportation options, and includes significant investment in maintenance, transit, bicycle, and pedestrian projects, and targeted capacity improvements. The 2049 transportation comparison shows Scenario C with lower total VMT and VMT per capita than No Project, and the custom 2035 SB 375/EMFAC report shows Scenario C with lower VMT, trips, CO2 total exhaust, gasoline use, and diesel use than Scenarios A and B.

It is expected that the 2026 RTP/SCS Scenario C will produce benefits beyond GHG reduction. Scenario C supports affordable housing-centered growth, air quality improvement, roadway maintenance, safer travel conditions, economic development, and expanded transportation and housing options for Merced County residents:

- Scenario C promotes better places to live and work by encouraging affordable housing near employment centers, downtowns, transit corridors, UC Merced, and selected transit-served unincorporated communities.

- The demographic profile of the region and the housing market are changing. Scenario C responds to these needs by encouraging increased multifamily housing development, access to jobs and transit, and additional transportation choices.

- By placing more housing near destinations and multimodal corridors, Scenario C can reduce travel distances, support more efficient infrastructure investment, and reduce the everyday transportation burden on residents.

- Reducing the footprint of new development helps protect farmland, wetlands, and open space. Scenario C consumes the lowest total land among the SCS scenarios at 3,279 acres and has the lowest wetland conversion at 1,544 acres.

- Scenario C does not envision wholesale redevelopment of the region. Rather, it focuses future growth in a manner that builds on existing communities, improves housing choice, increases access to jobs and transit, and lowers VMT compared to the No Project condition.

5.0 CUMULATIVE EFFECTS

Section 15126.2 of the *California Environmental Quality Act* (*CEQA) Guidelines* requires that Environmental Impact Reports (EIRs) identify four types of impacts:

- ✓ The significant environmental effects of the project.
- ✓ Significant effects of the project that cannot be avoided if the project is implemented.
- ✓ Significant irreversible environmental changes that the project would cause.
- ✓ The growth-inducing impacts of the project. Section 15130(a) requires an EIR to provide a discussion of significant cumulative impacts of a project when the project's incremental effect is cumulatively considerable.

The significant effects of the Project were identified in Section 3 of this EIR. This section of the EIR identifies the unavoidable impacts, irreversible environmental changes, growth-inducing impacts, and cumulative effects of the Project.

5.1 SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL CHANGES

Significant unavoidable environmental changes would result from any of the improvement projects under the Preferred Project Alternative, as construction of these projects would use non-renewable resources in a way that makes it impossible to reverse the impacts of Project implementation. CEQA Section 15126.2(b) requires a discussion of any significant impacts that cannot be reduced to levels of insignificance. Although mitigation measures have been identified, where feasible, for all of the significant impacts of the proposed Project, the Plans would result in the following impacts that are significant and unavoidable even after implementation of available, feasible mitigation measures:

- ✓ Blocked or impeded scenic resources as seen from the transportation facility or from the surrounding area.
- ✓ Altered appearance of scenic resources along or near designated or eligible scenic highways and/or vista points.
- ✓ Creation of significant contrasts with the overall visual character of the existing landscape setting.
- ✓ New source of substantial light and glare.
- ✓ Land use and growth that may occur in areas not previously envisioned for growth and development (agricultural areas).
- ✓ Increased emissions during the planning period for the Project.
- ✓ Creation of objectionable odors affecting a substantial number of people.

- ✓ Degradation or removal of natural vegetation and wildlife habitat during construction activities.
- ✓ Displacement or removal of riparian or wetland habitat during the construction and operation of improvement and future land use development projects.
- ✓ Displacement or removal of riparian or wetland habitat during the construction and operation of improvement or future land use development projects as a result of edge effects.
- ✓ Temporary or permanent impacts to terrestrial and aquatic wildlife movements.
- ✓ Potential increase in the siltation of screens and other water resources from exposures of erodible soils during construction activities.
- ✓ Indirect cumulative effect on biological resources.
- ✓ Cumulative Greenhouse Gas Emissions (GHG) impacts.
- ✓ Impacts on cultural and historical sources resulting from increased construction activities.
- ✓ Excavation and earthmoving activities of previously unknown archaeological resources or paleontological materials.
- ✓ Cumulative regional impacts on existing cultural and historical resources.
- ✓ Increased slope failure.
- ✓ Long-term erosion impacts.
- ✓ Impact along alignments and future land use development sites of state-owned and state mineral reserve land.
- ✓ Exposure of people or structures to potentially substantial adverse effects related to seismic activity and landslides.
- ✓ Cumulative regional impacts on geologic resources.
- ✓ Hazards to the public or environment through the release of hazardous materials during transportation of such wastes or the release of materials from future land use developments.
- ✓ Cumulative regional impact on water quality, stormwater infiltration, groundwater recharge, flood hazard, wastewater treatment service, and water demand.
- ✓ Energy consumption and conservation impacts.
- ✓ Impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development or to occur at a higher density than planned in general plans.
- ✓ Sensitive receptors located in the urban and rural areas of the Merced region, including residences, educational facilities, medical facilities, and places of worship. Construction and implementation of the proposed highway and arterial improvements, transit facilities, and future land use development would impact sensitive receptors located in the vicinity of the individual improvement or future land use development projects.
- ✓ Loss of open space areas.
- ✓ Disturbance or loss of significant agricultural resources throughout the Merced region.
- ✓ Cumulative regional impacts on existing and planned land use and recreational facilities.
- ✓ Noise impacts resulting from construction and grading activities.

- ✓ Exposure to noise for noise-sensitive land uses in excess of normally acceptable noise levels or substantial increases in noise.
- ✓ Cumulative regional impacts on ambient noise levels.
- ✓ Displaced or relocated residences and businesses through the acquisition of land and buildings necessary for roadway improvements or for future land use developments.
- ✓ Disrupted or divided communities by separating community facilities, restricting community access, and eliminating community amenities.
- ✓ Increases in 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.
- ✓ Recreational facilities or construction or expansion of recreational facilities that might have an adverse physical effect on the environment.
- ✓ Cumulative regional impact on population, housing, and employment.
- ✓ Cumulative regional impact on public utilities, other utilities, and service systems.
- ✓ Substantially increase hazards due to a design feature or incompatible uses.
- ✓ Result in inadequate emergency access and parking capacity.
- ✓ Conflict with adopted policies, plans, or programs supporting alternative transportation.

5.2 SIGNIFICANT IRREVERSIBLE IMPACTS

The identification of irreversible impacts is required in Section 15126.2(c) of the CEQA Guidelines. This section states:

> *Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts, and particularly secondary impacts (such as highway improvements, which provide access to previously inaccessible areas), generally commit future generations to similar uses. In addition, irreversible damage can result from environmental accidents associated with the Project (RTP/SCS). Irretrievable resource commitments should be evaluated to ensure that current consumption is justified.*

CEQA Section 15126.2(c) requires a discussion of any significant impacts that cannot be reduced to levels of insignificance. Although mitigation measures have been identified, where feasible, for all significant impacts of the proposed Project, the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) would result in impacts listed above that are significant and irreversible even after implementation of available, feasible mitigation measures.

5.3 GROWTH INDUCING IMPACTS

According to Section 15126.2(d) of the State CEQA Guidelines, an EIR is required to evaluate potential growth-inducing impacts of a proposed project. CEQA Guidelines defines a growth-inducing impact as "how the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." CEQA also requires the analysis of project characteristics that may encourage and facilitate activities that could individually or cumulatively affect the environment. Growth inducement, therefore, is any growth that exceeds the planned growth of an area and results in new development, which would not have taken place without the implementation of the proposed project. The growth-inducing potential of a project would be considered significant if it results in growth or a population concentration that exceeds growth forecasts included in general plans, other land use plans, or projections made by regional planning agencies.

The environmental effects of induced growth are indirect impacts of the proposed project. Such effects could result in significant adverse environmental impacts, including increased demand on public services, increased traffic and/or noise, degradation of air and/or water quality, and conversion of agricultural land and open space to other uses.

The socioeconomic growth that the Merced region has experienced for the past 50 years is expected to continue. The Project will, in and of itself, have growth-inducing impacts on the Merced region. New or improved transportation facilities provide access to areas of new development, thereby allowing more people and jobs to locate in growth areas. Without these facilities, the lack of access could force development into areas with existing transportation infrastructure, thereby shifting population and employment growth from one area of the region to another. From this standpoint, the inclusion of new or upgraded transportation facilities in the Project could be considered growth-inducing in some localities.

It is anticipated that the Merced County Association of Governments (MCAG) region will grow at the same rate, regardless of whether or not the Project is implemented. Construction of individual improvement projects and future land use development within the County will be subject to further CEQA review and evaluation of growth-inducing impacts; as mentioned above, the Project, in and of itself, may have growth-inducing impacts.

5.4 CUMULATIVE IMPACTS

Cumulative effects, according to CEQA Guidelines, are defined as "two or more individual effects that, when considered together, are considerable or which compound or increase other environmental impacts." The cumulative impact of several projects results from the incremental impact of the proposed project when added to the impacts of other closely related past, present, and reasonably foreseeable future projects (Section 15255). According to CEQA Guidelines Sections 15130(a) and (b), the purpose of this section is to provide a discussion of significant cumulative impacts resulting from the Project, and to indicate the severity of the impacts and their likelihood of occurrence. The CEQA Guidelines require that EIRs discuss the cumulative impacts of a project when a project's incremental effect is "cumulatively considerable," meaning that a project's incremental effects are considerable when viewed in connection with effects of past, current, and probable future projects. The CEQA Guidelines provide two methods for analyzing cumulative impacts, with the most appropriate method for a program-level RTP EIR being the projection approach. In this approach, the cumulative impact analysis is based on a summary of projections of future development and impacts contained in adopted general planning or related planning documents, or in previously certified environmental documents. These documents must be available to the public and actually describe or evaluate the regional or areawide conditions contributing to the cumulative impact.

Land use and growth projections for the 2026 RTP/SCS, which are the subject of analysis throughout this Draft Program EIR, are combined with the growth projections for Merced County (and the incorporated cities and communities). In other words, the geographic scope of this cumulative analysis covers the entire Merced County region, including projected growth in each community (both unincorporated and incorporated areas). The general plans for the jurisdictions within Merced County were used to compile planned land uses for the cumulative impact analysis area. As a regional planning and financing project, the Project would affect regional development, as other regional planning and financing projects, such as city and county general plans and master plans of water and sanitation agencies, are expected to contribute to cumulative impacts on a scale comparable to the Project.

Aesthetics

Future development within Merced County and in surrounding areas would increase the intensity of existing urban land uses and convert open space into urban land uses, which is expected to result in a less-than-significant visual impact. The conversion of open space to urban land uses would result in a significant unavoidable impact by causing the obstruction of existing open views, as well as potentially obstructing distant panoramic views from existing development; therefore, implementation of the proposed 2026 RTP/SCS will cumulatively contribute significantly to the loss of visual character of the County.

Aesthetic impacts associated with the implementation of the 2026 RTP/SCS are analyzed in Chapter 3 of this Draft PEIR.

Impacts AE.1:

Merced County will experience significant growth and development by 2049. The 2026 RTP/SCS influences the pattern of this development by increasing mobility. At the regional scale, the 2026 RTPs and SCSs' contribution to impacts on the overall visual character of the existing landscape setting would be cumulatively significant.

The 2026 RTP/SCS includes land use policies that would affect the regional distribution of population, households, employment, and facilities, and could impact aesthetics and views. The primary land use strategy discussed in the 2026 RTP/SCS emphasizes focusing development in accordance with applicable general plans, including increased densities and infill development. Such future development may result in taller buildings that obstruct views. However, an infill strategy will also help preserve open space in the region, thereby protecting many scenic resources.

Merced County will increase in population and employment by 2049. Some of these people will live in households and work at jobs on land that is currently vacant. This conversion of vacant land to residential or other uses would significantly impact aesthetics and views. As a result of the population growth expected to occur in the region over the next 26 years, contrasts with existing visual character will occur either due to increased land use intensity in urban areas or due to the development of previously vacant lands. Although implementing mitigation measures would reduce potential cumulative impacts, they would still be considered cumulatively considerable.

Mitigation Measures:

- ✓ **AE.1-1** Mitigation measures referenced in Chapter 3 should also be implemented to address cumulative impacts.

Significance After Mitigation:

Population growth projected by 2049, combined with the projects in the 2026 RTP/SCS, would consume vacant land, resulting in contrasts with the overall visual character of the existing landscape setting. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above-referenced mitigation measures will provide the

framework and direction to avoid or reduce the identified significant impacts, these impacts may still be significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Agriculture and Forestry Resources

As Merced County and the surrounding areas develop, increased land use intensity may lead to cumulative impacts on land use compatibility. The proposed 2026 RTP/SCS will result in the conversion of State-designated (Prime, Unique, and Statewide Important) farmland, as well as land currently utilized for agricultural productivity, to a variety of non-agricultural uses. Impacts to agricultural resources associated with the implementation of the 2026 RTP/SCS are analyzed in Chapter 3, Section 3.3 of this PEIR.

Impacts AR 1:

Implementation of the 2026 RTP/SCS would convert important farmland to urban use, as defined by SB 375. While this represents total agricultural land lost in Merced County outside the recorded year 2019 and the current spheres of influence of each local jurisdiction or agency, neighboring counties would also continue to convert agricultural land due to development outside Merced County. This collectively adds to the overall conversion of agricultural lands in the cumulative impact analysis and the surrounding area. The proposed 2026 RTP/SCS's contribution to the cumulative loss of agricultural and forest land resources would be considerable. This is considered to have a potentially significant impact.

Mitigation Measures:

- ✓ **AR 1-1** Mitigation measures referenced in Chapter 3 should also be implemented to address cumulative impacts.

Significance After Mitigation:

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above-referenced mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts, these impacts may still be significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine

appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Air Quality

Chapter 3 includes a detailed analysis of air quality conditions associated with the implementation of the proposed 2026 RTP/SCS. This includes an analysis of regional and localized air quality impacts, such as air emissions during construction and operation, exposure to toxic air contaminants, and odor impacts. The discussion below addresses cumulative air quality impacts beyond Merced County.

Merced County is within the San Joaquin Valley Air Basin, which is monitored by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The State has identified specific pollutants for which emissions levels have exceeded applicable federal and state pollutant standards in each air basin. Merced County is nonattainment for Ozone (1-hour and 8-hour), PM10 (State Standards), and PM2.5. The project will result in system-wide improvements in traffic flow and reduced congestion, thereby reducing the potential for increased air emissions. The SJVAPCD 2022 Ozone Plan, 2016 Ozone Plan, 2007 PM10 Maintenance Plan, and the 2024, 2018, and 2012 PM2.5 Plan document the SJVAPCD's plans to achieve the state ambient air quality standards. As such, compliance with the regulations and incentives in the SJVAPCD plans results in compliance with the state ambient air quality standards. Based on the air quality analysis documented in Chapter 3 of this Draft PEIR, the 2026 RTP/SCS conforms to the applicable SJVAPCD plans and demonstrates progress toward attainment of the state ambient air quality standards for PM10, PM2.5, and Ozone. As a result, implementation of the 2026 RTP/SCS would have a less-than-significant impact on PM10, PM2.5, and Ozone.

Generally, growth in a specific region can worsen pollution levels not only within its own basin but also in neighboring basins. Pollutant transport can result from various topographical and atmospheric conditions that cause pollution generated in one location to move to another location outside the air basin. While the 2026 RTP/SCS contributes to an ongoing violation, it does not impede the above-referenced plans and regulations.

Impacts AQ 1:

Forecasted growth in Merced County and surrounding areas will result in a potentially significant cumulative impact of air emissions on several air basins. The regional contribution to these cumulative air quality impacts may also be potentially significant.

Mitigation Measures:

- ✓ **AQ 1-1** Implement Mitigation Measures in Chapter 3. Implementation of these measures will lessen this impact, but not to a less-than-significant level.

Significance After Mitigation:

While population growth is expected in Merced County and surrounding areas, with and without the Project, implementation of mitigation measures is expected to lessen cumulative impacts; however, they will remain significant and unavoidable. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above-referenced mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts, these impacts may still be significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Biotic Resources

Chapter 3 of this PEIR includes a detailed analysis of the biotic conditions related to implementation of the proposed 2026 RTP/SCS. While the loss of some special-status species and important natural community habitats in Merced County is expected as a result of implementing the 2026 RTP/SCS, surrounding communities may also convert habitat land for development, further impacting these biological resources. Collectively, this adds to the overall cumulative impacts on biological resources.

Impacts BR 1:

Growth and development in Merced County will increase substantially by 2049. The 2026 RTP/SCS, by increasing mobility, influences the pattern of this growth and development. The 2026 RTPs and SCSs' influence on growth potentially contributes to the following regional cumulative considerable impacts:

- ✓ Displacement of natural vegetation.
- ✓ Damage to sensitive species habitat.
- ✓ Habitat fragmentation.
- ✓ Impacts to riparian and wetland habitats.

- ✓ Construction and operational disturbances.
- ✓ Siltation.

The amount of newly developed acreage (consuming previously vacant land) would be considerable. This degree of development is reasonably foreseeable; however, to assign this future development to precise locations would be speculative, such that it cannot be estimated which natural vegetation communities would be affected. Despite the inability to predict the acreage of each habitat type that may be affected, it is reasonable to expect that this future development would contribute to the same types of impacts (although on a larger scale) detailed in Chapter 3, Section 3.5.

These indirect impacts on biological resources are associated with MCAG's population, employment, and household growth forecasts and are considered a significant cumulative impact.

Mitigation Measures:

- ✓ **BR 1-1** The cumulative impacts to biological resources, due to the forecast urban development associated with the 2026 RTP/SCS, would be mitigated using the same measures detailed for impacts referenced in Chapter 3, Section 3.5, in addition to the following measure.
- ✓ **BR 1-2** Future impacts to biotic resources will be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Significance After Mitigation:

The impacts to biotic resources due to regional-scale growth would be reduced through application of the mitigation measures; however, implementation of the 2026 RTPs and SCSs transportation improvement and future land use development projects to accommodate growth and development in Merced County (as reflected in adopted local agency general plans) would contribute to biotic resource impacts. Impacts to biotic resources from the 2026 RTP/SCS would be cumulatively considerable. The responsibility to mitigate impacts on biotic resources rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other agencies with jurisdiction over the project area. While implementation and monitoring of the above-referenced mitigation measures will provide the framework and direction to avoid or reduce conflicts with local policies or ordinances protecting biological resources, such impacts may remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Climate Change

Climate change impacts associated with the implementation of the 2026 RTP/SCS are analyzed in Chapter 3, Section 3.6 of this PEIR. Climate change impacts are often considered exclusively cumulative. Implementation of the 2026 RTP/SCS would be consistent with statewide and regional plans and would achieve the statewide target for future year emissions reductions required under SB 375, AB 32, and SB 32.

Impact CC 1:

Although growth and development in Merced County and its surrounding communities are likely to increase cumulative GHG emissions and contribute to global climate change, the contribution of the 2026 RTP/SCS to cumulative GHG emissions and global climate change would typically be considered a less-than-significant impact. However, for reasons discussed below, the impacts are significant and unavoidable.

Mitigation Measure:

- ✓ **CC 1-1** Implement Mitigation Measures in Chapter 3, Section 3.6. Implementation of these measures will lessen this impact, but not to a less-than-significant level.

Significance After Mitigation:

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above-referenced mitigation measures will provide the framework and direction to avoid or reduce increased transportation GHG emissions that contribute to climate change, such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Cultural and Tribal Cultural Resources

Impacts on cultural resources associated with the implementation of the 2026 RTP/SCS are analyzed in Chapter 3, Section 3.7, of this PEIR. While some cultural resources may have regional significance, the

resources themselves are site-specific, and impacts to them are project-specific; therefore, they are not typically considered cumulatively. However, if a cultural resource represents the last known example of its kind, impacts on it would be considered cumulatively significant.

Impacts CTR 1:

Growth and development in Merced County will increase substantially by 2049. The 2026 RTP/SCS, by increasing mobility and including transportation measures, influences the pattern of this development. The 2026 RTPs and SCSs influence growth, contributing to regional impacts on existing historic resources and previously undisturbed and undiscovered cultural and tribal resources. This impact would be cumulatively considerable.

The amount of newly developed acreage (consuming previously vacant open space/recreation and agricultural land) from transportation and land use policies in the 2026 RTP/SCS would be greater than in the No Project Alternative. While there will be a roughly similar amount of cultural and tribal resources impacted as a result of future growth and development to the year 2049 associated with the Project Alternative, the No Project Alternative will result in more cultural and tribal resource impacts as a result of unrestricted growth and city sprawl, thereby disturbing more cultural and tribal resource land compared to the Project Alternative. This degree of development and the implementation of transportation improvements are reasonably foreseeable; however, assigning this future development and transportation improvements to precise locations or alignments would be speculative, as it cannot be estimated where cultural and tribal resources would be affected. Despite the inability to predict the acreage of previously undisturbed land that may be affected, it is reasonable to expect that this future development would contribute to the same types of impacts detailed in Impacts 3.7.1 through 3.7.5 of Chapter 3, Section 3.7. These effects are considered to have a cumulatively considerable impact.

Mitigation Measures:

- ✓ **CTR 1-1** The cumulative impacts to cultural resources, due to the forecast growth and development associated with the 2026 RTP/SCS, would be mitigated using the same measures detailed for impacts referenced in Chapter 3, Section 3.7, in addition to the following measure.
- ✓ **CTR 1-2** Future impacts to cultural resources will be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Significance After Mitigation:

The impacts to cultural and tribal resources due to regional-scale growth would be reduced through application of the mitigation measures; however, implementation of the 2026 RTPs and SCSs

transportation improvement projects to accommodate growth and development in Merced County (as reflected in adopted local agency general plans) would contribute to cultural and tribal resource impacts. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above-referenced mitigation measures will provide the framework and direction to avoid or reduce significant impacts on historic resources, human remains, and tribal resources, such impacts may still be significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies.

As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Energy and Energy Conservation

Energy impacts associated with the implementation of the 2026 RTP/SCS are analyzed in Chapter 3, Section 3.8 of this PEIR. Demand for electrical power and natural gas has the potential to affect areas outside Merced County cumulatively because energy systems are interconnected and may extend into other states and countries. If the growth of supplies does not keep pace with demand, growth and development in the cumulative impact analysis area could create shortages, resulting in a significant cumulative impact.

Impacts EN 1:

To reduce energy consumption and align with smart growth principles, the 2026 RTP/SCS includes a proposed land use plan and transportation system focused on mixed uses, compact development, and multimodal transportation options. However, the implementation of the RTP/SCS is still anticipated to result in per-capita and total increases in energy use in Merced County. In addition to other growth and development in Merced County and surrounding communities that could increase energy demand, the 2026 RTP/SCS's contribution to cumulative energy impacts is considered significant.

Mitigation Measures:

- ✓ **EN 1-1** The cumulative impacts to energy due to the forecast growth and development associated with the 2026 RTP/SCS would be mitigated using the same measures detailed for impacts referenced in Chapter 3, Section 3.8.

Significance After Mitigation:

The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above-referenced mitigation measures will provide the framework and direction to avoid or reduce impacts on energy and energy resources, such impacts could probably remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Geology/Soils/Mineral Resources

The implementation of the proposed RTP/SCS will contribute to the urbanization of Merced County, resulting in direct and/or indirect increases in seismic, slope, soil instability, or wind hazards. This increase would result from urban development and the conversion of vacant land to urban uses. As Merced County grows, the likelihood of hazards occurring also increases. Therefore, implementation of the proposed RTP/SCS will cumulatively contribute significantly to the increased exposure of people and property to seismic, slope, soil instability, and wind hazards.

Chapter 3, Section 3.9 of this PEIR includes a detailed analysis of the geology and soil conditions related to implementation of the proposed 2026 RTP/SCS.

Impacts GSM 1:

Growth and development in Merced County will increase substantially by 2049. The 2026 RTP/SCS, by increasing mobility and including alternative transportation modes, influences the pattern of this urbanization. Implementation of the 2026 RTP/SCS could result in a cumulatively considerable adverse effect on human beings and property when considered at the regional scale.

Potentially hazardous geological and seismic factors are found throughout the San Joaquin Valley. Given the regional scale and growth-inducing nature of the projects and programs included in the 2026 RTP/SCS, the cumulative impacts on geological units and soils, as well as the potential for substantial adverse effects on people and property, would be significant.

Mitigation Measures:

- ✓ **GSM 1-1** Mitigation measures reference in Chapter 3, Section 3.9. would be applied to this impact in addition to the following measures:

- ✓ **GSM 1-2** Future impacts to geologic resources will be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Significance After Mitigation:

The impacts to geologic resources due to regional-scale growth would be reduced through application of the mitigation measures; however, implementation of the 2026 RTP/SCS transportation improvement and future land use development projects to accommodate growth and development in Merced County (as reflected in adopted local agency general plans) would contribute to geologic resource impacts. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above-referenced mitigation measures will provide the framework and direction to avoid or reduce damage to transportation infrastructure and other land use development structures from seismic activity, slope failure, soil erosion, and loss of mineral resources, such impacts could remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Hazards and Hazardous Materials

Development in accordance with the proposed RTP/SCS would cumulatively increase development intensity in Merced County. Compliance with federal, State, and local regulations concerning the storage and handling of hazardous materials and/or waste would reduce the potential for significant public health and safety impacts. Therefore, the impact of the proposed RTP/SCS, in addition to future development in surrounding areas, is not expected to significantly affect the number of people exposed to public health and safety risks from exposure to hazardous materials.

Chapter 3, Section 3.10 of this PEIR includes a detailed analysis of the hazardous materials conditions related to implementation of the proposed 2026 RTP/SCS.

Impacts HM 1:

Implementation of the investments and policies in the 2026 RTP/SCS could pose a hazard to the public or the environment by disturbing contaminated sites due to population and housing growth in the region. The 2026 RTP/SCS would affect mobility and land use-transportation systems, potentially contributing to a cumulatively considerable impact from the disturbance of contaminated sites by new urban development. This impact is considered to be significant.

Mitigation Measures:

- ✓ **HM 1-1** Referenced in Chapter 3, Section 3.10, as implemented by responsible agencies and private developers, would address this impact.

Significance After Mitigation:

With appropriate review, cleanup, or maintenance, this impact would not be cumulatively considerable and therefore would be less than significant. However, the responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above-referenced mitigation measures will provide the framework and direction to avoid or reduce the impacts of hazardous materials, such impacts could probably remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Hydrology and Water Quality

Chapter 3, Section 3.11 of this PEIR includes a detailed analysis of the hydrology and water quality conditions related to implementation of the proposed 2026 RTP/SCS. Some types of impacts are localized and occur independently; these are not considered cumulative. There are, however, hydrological and water-quality impacts that may be additive and cumulative.

Development within a flood hazard area results in continuous, incremental changes over time that can have cumulative adverse effects during a flood. Alterations in drainage patterns, groundwater withdrawal, and recharge may cumulatively affect groundwater.

Impacts HW 1:

Growth and development will increase substantially by 2049. The 2026 RTP/SCS, by increasing mobility and by including alternative transportation modes, influences the pattern of this development. The 2026 RTPs and SCSs' influence on growth would contribute to the conversion of undeveloped land, resulting in impacts to water quality, stormwater infiltration and groundwater recharge, flood hazard impacts, wastewater treatment services, and water demand.

The growth projection associated with the 2026 RTP/SCS would substantially increase the amount of developed land in the County. With the 2026 RTP/SCS, the amount of new developed acreage (consuming previously vacant land) would be considerable.

Mitigation Measures:

- ✓ **HW 1-1** Mitigation Measures referenced in Chapter 3, Section 3.11 shall be applied to all transportation and future land use development projects, as feasible, in addition to the following measures:
- ✓ **HW 1-2** Local governments and Caltrans should encourage Low Impact Development and natural spaces that reduce, treat, infiltrate, and manage stormwater runoff flows.
- ✓ **HW 1-3** Local governments and Caltrans should implement green infrastructure and water-related green building practices through incentives and ordinances. Green building resources include the U.S. Green Building Council's Leadership in Energy and Environmental Design, Green Point Rated Homes, and the California Green Builder Program.
- ✓ **HW 1-4** Local governments and Caltrans should integrate water resources planning with existing greening and revitalization initiatives, such as street greening, tree planting, development and restoration of public parks, and parking lot conversions, to maximize benefits and share costs.
- ✓ **HW 1-5** Developers, local governments, Caltrans, and water agencies should maximize permeable surface area in existing urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. New impervious surfaces should be minimized to the greatest extent possible, including the use of in-lieu fees and off-site mitigation.
- ✓ **HW 1-6** Future impacts to water quality should be avoided through cooperative planning, information sharing, and comprehensive pollution control measure development.
- ✓ **HW 1-7** Local jurisdictions, Caltrans, and water agencies are encouraged to continue planning for improved stormwater management and groundwater recharge. Future adverse impacts should be avoided through cooperative planning, information sharing, and comprehensive implementation efforts.

- ✓ **HW 1-8** Local governments and Caltrans should prevent improvement projects and future land use development in flood hazard areas that do not have appropriate protections, especially in alluvial fan areas of the region.
- ✓ **HW 1-9** Local jurisdictions should encourage new development and industry to locate in those service areas with existing wastewater infrastructure and treatment capacity, making greater use of those facilities before incurring new infrastructure costs.
- ✓ **HW 1-10** Wastewater treatment agencies are encouraged to have expansion plans, approvals, and financing in place once their facilities are operating at 80 percent of capacity.
- ✓ **HW 1-11** Local jurisdictions should promote reduced wastewater system demand by: designing wastewater systems to minimize inflow and increase upstream treatment and infiltration to the extent feasible, reducing overall source water generation by domestic and industrial users, deferring development approvals for industries that generate high volumes of wastewater until wastewater agencies have expanded capacity.
- ✓ **HW 1-12** Project developers and agencies should consider potential climate change hydrology and attendant impacts on available water supplies and reliability in the process of creating or modifying systems to manage water resources for both year-round use and ecosystem health.
- ✓ **HW 1-13** Local water agencies should continue to evaluate future water demands and establish the necessary supply and infrastructure to meet that demand.
- ✓ **HW 1-14** Developers, local governments, and water agencies should include conjunctive use as a water management strategy when feasible.
- ✓ **HW 1-15** Developers and local governments should reduce exterior uses of water in public areas. They should promote reductions in private homes and businesses by shifting to drought-tolerant native landscape plantings (xeriscaping), using weather-based irrigation systems, educating other public agencies on water use, and implementing related water-pricing incentives.
- ✓ **HW 1-16** Future impacts to water supply should be minimized through cooperation, information sharing, and program development.

Significance After Mitigation:

RTP/SCS improvement projects and future land use development expected by 2049 would adversely affect water quality, stormwater infiltration and groundwater recharge, flood hazards, wastewater treatment services, and water demand. The 2026 RTPs and SCSs' influence on growth distribution is a cumulatively considerable contribution to this significant impact. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above-referenced mitigation measures will provide the framework and direction to avoid or reduce the identified significant impacts, these impacts may still be significant and unavoidable. As a program-level

document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Land Use, Planning, and Recreation

As Merced County and the surrounding areas develop, increased land use intensity may result in cumulative impacts on land use compatibility. Chapter 3, Section 3.12 of this EIR includes a detailed analysis of the land use and planning conditions related to implementation of the proposed 2026 RTP/SCS.

Impacts LPR 1:

Growth and development in the County will increase substantially by 2049. The 2026 RTP/SCS, by increasing mobility and enhancing alternative transportation modes, influences the pattern of this urbanization. The 2026 RTP/SCS is in line with current implementation agencies' adopted land use plans; however, should an agency make changes that reflect a different development pattern, they could conflict with applicable adopted local land use plans and policies, resulting in impacts on recreational facilities.

While the RTP/SCS are likely to result in positive outcomes related to supportive land use conditions for alternative forms of transportation, such as transit, other improvement projects, and future land use developments in the RTP/SCS could have significant impacts on land use patterns, land use growth, and development. This impact could be especially significant for recreational, open-space, agricultural, and other land uses within the County. The 2026 RTP/SCS influence on growth contributes to regional cumulative considerable impacts on land use and would change the intensity of land use in some areas.

Mitigation Measures:

- ✓ **LPR 1-1** The mitigation measures listed in Chapter 3, Section 3.12 would be applied as mitigation for this impact. In addition, the following measure would apply.
- ✓ **LPR 1-2** Regional planning efforts will be used to build a consensus in the region to support changes in land use to accommodate future population growth while maintaining the quality of life in the region.

Significance After Mitigation:

To accommodate the projected population totals for 2049, the region will need to change land uses and increase the intensity of some existing land uses. The responsibility to approve land use development

consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above-referenced mitigation measures will provide the framework and direction to avoid or reduce impacts on land use and planning, such impacts could probably remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the identified impacts.

Noise

The 2026 RTP/SCS could result in cumulative increases in noise levels along major roadways and near industrial/commercial zones. Each of these noise impacts would be addressed separately when new noise-sensitive or noise-generating developments are proposed. Chapter 3, Section 3.13 of this EIR includes a detailed analysis of the noise conditions related to implementation of the proposed 2026 RTP/SCS.

Impacts N 1:

Cumulative ambient noise levels in the region could increase to exceed normally acceptable noise levels or experience substantial increases as a result of the operation of expanded or new transportation facilities and future land use developments.

The 2026 RTP/SCS could significantly impact noise levels in the region. As described under Chapter 3, Section 3.13, many of the projects involve construction, which would result in significant short-term impacts. While construction noise is temporary at the project level, the cumulative noise region-wide could be significant. Over the planning horizon, there is likely to be ongoing construction in the region.

Cumulative transportation noise could also increase. This increase in ambient noise could be related to aircraft overflights, railroads, freeway, arterial, and transit noise, and, finally, the operation of future land use developments.

Mitigation Measures:

- ✓ **N 1-1** Mitigation measures intended to reduce the noise impacts on sensitive receptors are part of the 2026 RTP/SCS. These include site design, buffers, soundwalls, and similar measures.

✓ **N 1-2** Further reduction in noise impacts would be obtained through the implementation of the measures described in Chapter 3, Section 3.13.

Significance After Mitigation:

Mitigation Measures referenced in Chapter 3, Section 3.13 may not reduce noise levels to below regulatory levels in all cases. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above-referenced mitigation measures will provide the framework and direction to avoid or reduce the identified noise impacts, these impacts are likely to remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Population, Housing and Employment

Future increases in population and housing will occur within Merced County. Development at the scale and intensity permitted under the 2026 RTP/SCS would result in cumulatively significant population increases within the County and the region. Chapter 3, Section 3.14 of this PEIR includes a detailed analysis of the population, housing, and employment conditions related to implementation of the proposed 2026 RTP/SCS.

Impacts PHE 1:

Growth and development in the County will increase substantially by 2049. The 2026 RTP/SCS, by increasing mobility and including transportation measures, influences the pattern of this development.

The 2026 RTP/SCS influence on growth contributes to regional cumulative considerable impacts on population, housing, and employment, and would change the intensity of land use in some areas.

Mitigation Measures:

✓ **PHE 1-1** The mitigation measures listed in Chapter 3, Section 3.14 would be applied as mitigation for this impact. In addition, the following measure would apply.

- ✓ **PHE 1-2** Regional planning efforts will be used to build a consensus in the region to support changes in population, housing, and employment to accommodate future growth while maintaining the quality of life in the region.

Significance After Mitigation:

To accommodate the projected population, housing, and employment totals for 2049, the region will need to change land uses and increase the intensity of some existing land uses. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above-referenced mitigation measures will provide the framework and direction to avoid or reduce impacts on population, housing, and employment, such impacts could probably remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Public Utilities, Other Utilities & Services Systems

Chapter 3, Section 3.15 of this PEIR includes a detailed analysis of the conditions of public utilities, other utilities, and service systems as they relate to the implementation of the proposed 2026 RTP/SCS.

Impacts PU 1:

The contribution of the proposed 2026 RTP/SCS to cumulative public service impacts in the form of state routes, freeways, and other roads under the jurisdiction of the CHP; rural wildland fire areas protected by CAL FIRE; and regional, state, and federal parks, open space, recreational areas, and other future land uses may be cumulatively considerable. This is considered to have a potentially significant impact.

Mitigation Measures:

- ✓ **PU 1-1** The mitigation measures listed in Chapter 3, Section 3.15 would be applied as mitigation for this impact.

Significance After Mitigation:

If the implementing agency adopts these mitigation measures, it will reduce the contribution of the proposed 2026 RTP/SCS to cumulative impacts to a less-than-significant level. However, the responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above-referenced mitigation measures will provide the framework and direction to avoid or reduce impacts on public services, such impacts could probably remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Impacts PU 2:

Growth and development in the County will increase substantially by 2049. The 2026 RTP/SCS, by increasing mobility and including alternative transportation modes, influences the pattern of this development. The 2026 RTPs and SCSs' influence on growth contributes to regional cumulative impacts on police and fire and emergency services, solid waste services, and other public services in the County.

Growth and development in the region will require additional police, fire, and other emergency and public services, as well as additional solid waste services. Such needs will be determined at the transportation project and future land use development project levels by individual service providers.

Mitigation Measures:

The mitigation measures listed in Chapter 3, Section 3.15, would be applied to address this impact, in addition to the following.

- ✓ **PU 2-1** The growth-inducing potential of individual transportation and future land use projects will be carefully evaluated so that the full implications of the projects are understood. Individual environmental documents should quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities to the extent feasible.
- ✓ **PU 2-2** The California Integrated Waste Management Board and the Regional Waste Authority should continue to enforce solid waste diversion mandates that the Legislature enacts.

- ✓ **PU 2-3** Local jurisdictions should continue to adopt programs to comply with state solid waste diversion rate mandates and, where possible, should encourage further recycling to exceed these rates.
- ✓ **PU 2-4** Local jurisdictions should implement or expand city or county-wide recycling and composting programs for residents and businesses. This could include extending the types of recycling services offered (e.g., to include food and green waste recycling) and providing public education and publicity about recycling services. Implementing agencies should address the new regulations outlined in SB 1383, finalized by CalRecycle in November 2020 and set to take effect in January 2026.
- ✓ **PU 2-5** Project implementation agencies should coordinate regional approaches and strategic siting of waste management facilities.
- ✓ **PU 2-6** Project implementation agencies should prioritize siting of new solid waste management facilities, including recycling, composting, and conversion technology facilities, in conjunction with existing waste management or material recovery facilities.
- ✓ **PU 2-7** Project implementation agencies should increase programs to educate the public and increase awareness of reuse, recycling, composting, and green building benefits, and raise consumer education issues at the county and city level, as well as at local school districts and education facilities.

Significance after Mitigation:

Adoption of these mitigation measures by implementing agencies would reduce the proposed 2026 RTP/SCS's contribution to cumulative impacts. However, the responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation and monitoring of the above-referenced mitigation measures will provide the framework and direction to avoid or reduce impacts on public services, such impacts could probably remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the significant impacts identified.

Social and Economic Effects

Chapter 3, Section 3.16 of this EIR includes a detailed analysis of the social and economic conditions related to implementation of the proposed 2026 RTP/SCS. While an analysis of the social and economic impacts is not required by CEQA, Title VI of the Civil Rights Act of 1964 requires transportation agencies to disclose to the public the benefits and burdens of proposed projects on minority populations. The understanding of civil rights has expanded to include gender, religion, and disability. Title VI was further

amended in 1987 to extend non-discrimination requirements for recipients of federal aid to all of their programs and activities, not just those funded with federal funds. In 1994, President Clinton issued Executive Order 12898 on "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." In 1997, the Department of Transportation issued an Order on Environmental Justice to implement the Executive Order. In December 1998, the Federal Highway Administration (FHWA) issued its own environmental justice order. As a federally designated metropolitan transportation planning organization (MPO), MCAG is required to comply with the rules and policies set forth by FHWA.

Impacts SE 1:

Growth and development in the County will increase substantially by 2049. The 2026 RTP/SCS, by increasing mobility and including transportation measures, influences the pattern of this development. Construction of some improvement projects will occur in areas with minority and low-income populations.

The improvement and future land use development projects may have direct, short-term impacts on surrounding communities related to construction, including noise, air quality, and traffic. However, none of these projects is expected to have a disproportionate impact on minority or low-income communities. The Project is designed to serve the entire population of the County, and the transportation and future land use development projects are dispersed throughout the region. As a result, short-term impacts are considered less than significant.

Furthermore, MCAG works with cities, counties, and other implementing agencies to encourage improvement projects that serve those communities with the greatest transit needs, such as low-income or minority communities in urban core areas. It is anticipated that the improvement projects will increase accessibility and address existing problems with the transportation network. The location, design, and alignment of transportation facilities and routes are planned to reduce potential impacts to the extent feasible and to ensure that, if impacts occur, they do not disproportionately affect low-income or minority populations. As a result, long-term impacts are considered less than significant.

Mitigation Measures:

- ✓ **SE 1-1** Mitigation measures have not been identified in Sections 3.4, 3.12, and 3.14 to minimize potential impacts because impacts were found to be less-than-significant. However, to protect the cumulative effects on sensitive uses that may be located near the individual improvement and future land use development project sites, including low-income and minority communities, the following measure would also apply:

- ✓ **SE 1-2** Regional planning efforts will be used to build a consensus in the region to support changes in social and economic conditions to accommodate future growth while maintaining the quality of life in the region.

Significance After Mitigation:

Less than significant.

Transportation

Chapter 3, Section 3.17 of this PEIR includes a detailed analysis of the transportation/traffic conditions related to implementation of the proposed 2026 RTP/SCS. At the regional level, all transportation and traffic impacts associated with the implementation of the 2026 RTP/SCS are considered potentially significant but are expected to provide benefits, including increasing person-trips by bicycle, walking, and transit, and improving infrastructure and connectivity for pedestrians and bicyclists.

Impacts TT 1:

The 2026 RTP/SCS is designed to maintain and encourage the balance between jobs and housing within the region. The additional population, housing, and job growth forecasted in 2049 is not a result of the 2026 RTP/SCS, which is a strategy to allocate the forecasted growth to achieve a more balanced jobs/housing ratio and to optimize transportation investments that support those land uses. The 2026 RTP/SCS results in a greater mix of alternative modes. The potential for cumulative impacts from traffic generated within Merced County and its surrounding communities that the implementation of the 2026 RTP/SCS might contribute to is significant.

Mitigation Measures:

- ✓ **TT 1-1** The mitigation measures listed in Chapter 3, Section 3.17 will be applied as mitigation for this impact.

Significance After Mitigation:

Implementing agencies, such as local jurisdictions, transit agencies, and Caltrans, should require measures to increase the use of alternative transportation modes. The responsibility to approve land use development consistent with the general plans and the SCS rests with the local jurisdictions, and the responsibility to design and construct transportation improvements rests with Caltrans, the local jurisdictions, and other responsible agencies with jurisdiction over a project area. While implementation

and monitoring of the above-referenced mitigation measures will provide the framework and direction to avoid or reduce transportation impacts, such impacts may remain significant and unavoidable. As a program-level document, evaluation of all project-specific circumstances is not plausible. Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the identified impacts.

Wildfire

Chapter 3, Section 3.18 of this PEIR includes a detailed analysis of wildfires related to the implementation of the proposed 2026 RTP/SCS. At the regional level, all wildfire impacts associated with implementing the 2026 RTP/SCS are considered potentially significant. Still, with the implementation of mitigation measures, the risk of loss of structures and transportation infrastructure, as well as the risk of injury or death due to wildfires, would be reduced.

Impacts WF 1:

CAL FIRE has mapped parts of Merced County as having a high or very high fire hazard in both State Responsibility Areas (SRAs) and Local Response Areas (LRAs). The land use scenario envisioned by the 2026 RTP/SCS concentrates forecasted population and employment growth in urban areas and corridors of the County, such as incorporated cities, unincorporated towns, and major roadways, where the risk of wildfire is lower than in more rural areas with more abundant fuels.

Mitigation Measures:

- ✓ **WF 1-1** The mitigation measures listed in Chapter 3, Section 3.18, will be applied as mitigation for this impact.

Significance After Mitigation:

Implementing agencies that propose projects within two miles of an SRA or very high fire hazard severity zones should require adherence to a local hazard mitigation plan, encourage fire-resistant native vegetation, require a fire safety plan, prohibit certain construction during times of high wildfire risk, and require fire extinguishers on site.

Individual projects will require a project-level analysis to determine appropriate mitigation strategies. As appropriate, MCAG will encourage the implementation of the above-noted mitigation strategies intended to avoid or reduce the identified impacts.

6.0 LIST OF PREPARERS, ORGANIZATIONS, AND AGENCIES REFERENCED OR CONSULTED

6.1 LIST OF PREPARERS

The following provides a list of firms and staff members involved in the preparation process of this document:

MERCED COUNTY ASSOCIATION OF GOVERNMENTS
Stacie Guzman, Executive Director
Elizabeth Forte, Director of Planning and Programming
Meg Prince, Principal Planner
Rui Ma, Senior Planner
Shunyi Hu, Assistant Planner

Kristine Cai, Principal/Director of Mobility,
Central & Northern California – LSA Associates (SCS and Traffic Modeling)

VRPA TECHNOLOGIES, INC. PEIR CONSULTANT TEAM

VRPA Technologies, Inc.
Georgiena Vivian, President, Project Manager
Erik Ruehr, P.E., Director of Traffic Engineering
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Ryan Vivian, Transportation Planning Technician
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JK Consulting Group
Jason Ellard, President

BBK Law
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Megan Kilmer, Partner

6.2 ORGANIZATIONS AND AGENCIES REFERENCED OR CONSULTED

The following provides a list of organizations and agencies referenced or consulted during preparation of this Draft EIR:

Gold Runner
BBK Law
Burlington, Northern and Santa Fe Railroad
California Attorney General
California Air Resources Board
California Building Standards Commission (CBSC)
California Department of Conservation
California Department of Finance
California Department of Fish and Wildlife
California Department of Forestry and Fire Protection
California Department of Health Services
California Department of Parks and Recreation
California Department of Transportation (Caltrans)
California Department of Water Resources
California Division of Oil, Gas, and Geothermal Resources
California Division of Mines and Geology
California Employment Development Department
California Energy Commission
California Environmental Protection Agency
California Gas Utilities
California Governor's Office of Planning and Research
California High Speed Rail Authority
California Historical Resources Commission
California Integrated Waste Management Board
California Native American Heritage Commission
California Office of Environmental Health
California Office of Historic Preservation
California Regional Water Quality Control Board
California State University, Bakersfield
California State Water Resources Control Board
California Transportation Commission
City of Atwater (Various Departments)
City of Dos Palos (Various Departments)
City of Gustine (Various Departments)
City of Livingston (Various Departments)
City of Los Banos (Various Departments)
City of Merced (Various Departments)
County of Merced (Various Departments)

Federal Emergency Management Agency
Federal Highway Administration
Federal Transit Administration
Governor's Office of Planning and Research
Greyhound Bus Lines
Institute of Transportation Engineers
JK Consulting Group
LSA
MCAG - Merced County Association of Governments
MCAG RTP Roundtable
Merced County Airport Land Use Commission
Merced County Local Agency Formation Commission
National Oceanic and Atmospheric Administration
National Park Service
National Forest Service
National Transportation Safety Board
Pacific Gas and Electric (PG&E)
Regional Waste Authority
Regional Water Quality Control Board, Central Valley Region
San Joaquin Valley Air Pollution Control District
Southern California Edison
Transportation Research Board
Trinity Consultants
Union Pacific Transportation Company
United States Army Corps of Engineers
United States Aviation Administration
United States Bureau of the Census
United States Bureau of Land Management
United States Department of Agriculture, Natural Resource Conservation Service (NRCS)
United States Department of Energy, Energy Information Administration
United States Department of the Interior, Fish and Wildlife Service
United States Department of Transportation
United States Department of Housing and Urban Development
United States Environmental Protection Agency
United States Fish and Wildlife Service
United States Geological Survey
VRPA Technologies, Inc.
Yosemite Area Regional Transportation System

APPENDIX A

NOTICE OF PREPARATION, OTHER RELATED MATERIALS, AND NOP COMMENT LETTERS

From: Marilyn Wesley
To: Georgiena M Vivian
Subject: SCH Number 2025030169
Date: Wednesday, March 5, 2025 3:46:00 PM
Attachments: image001.png

Thank you for using CEQA Submit.

Public Resources Code (PRC) Section 21091(c)(3) and Guidelines Section 15105(e) allows the State Clearinghouse (SCH) to distribute CEQA documents within three working days after the date of receipt if the submittal is determined by the State Clearinghouse to be complete. Additionally, the State agency review period does not begin until the SCH distributes the CEQA document to State agencies. (Pub. Resources Code, § 21093(c)(2).)

Your project is published and available for review. Please note the State and Local review 'start' and 'end' dates.

To view your project and any attachments via CEQAnet, from CEQA Submit: Click "Navigation" and select "Published Document"

Additional information is on State Clearinghouse (SCH) website - FAQs:
https://lci.ca.gov/sch/faq.html

Notice of Closing Letters: The SCH will not provide a close of review period acknowledgement on your CEQA environmental document. Comments submitted by State agencies are made available on CEQAnet by the SCH during and after the review period.

To view comments on your project via CEQAnet, please visit:
https://ceqanet.opr.ca.gov/Search/Advanced

- Search for the SCH# using the Advanced Search in CEQAnet
- Select the correct document.
- Under "Attachments," view attachments labeled "State Comment Letters [Comments from State Reviewing Agency(ies)]"
- If there are no comments from a State agency about your project, it means none have been received.

To get more information on a specific project, contact the lead agency responsible for it directly.

****When Requesting Updates to Published/Posted Document(s)/Project(s):** Please note that the State Clearinghouse (SCH) does not remove attachments from published projects unless there is confidential information that cannot be displayed online.

To make changes to a published document, send requests and any attachments to state.clearinghouse@opr.ca.gov. Please also provide a brief memo on lead agency letterhead explaining what changes/corrections have been made.

To view your submission, use the following link.
https://ceqasubmit.opr.ca.gov/Document/Index/313411/1

Please contact the SCH with any questions at state.clearinghouse@opr.ca.gov.

Thank you,

Marilyn Wesley
CEQA Program Analyst, State Clearinghouse
Governor's Office of Land Use and Climate Innovation
1400 10th Street | Sacramento, CA 95814
Email: Marilyn.Wesley@lci.ca.gov

***Note: No reply, response, or information provided constitutes legal advice.*

Notice of Preparation

Date: February 28, 2025

To: Reference List of Recipients

From: Stacie Guzman, Executive Director
Merced County Association of Governments - Lead Agency
369 West 18th Street, Merced, CA 95340, (209) 769-7679, stacie.guzman@mcagov.org

Subject: Notice of Preparation and Scoping Meeting for a Program Environmental Impact Report (PEIR) for the Merced County Association of Governments (MCAG) 2026 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)

Merced County Association of Governments (MCAG) will be the Lead Agency and prepare a Program Environmental Impact Report (PEIR) for the 2026 RTP/SCS. MCAG is requesting input regarding the scope and content of the environmental information, which is germane to your agency's statutory responsibilities in connection with the proposed project. The public is also encouraged to provide input. The project title, location, environmental review requirements, agency background and overview, project description, and probable environmental issues to be addressed in the PEIR are attached. An Initial Study is not attached and is not required pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15060(d).

Your response is requested at the earliest possible date but not later than 30 days after receipt of this notice or by ***Wednesday, April 2, 2025***. Please respond to Ms. Stacie Guzman, Executive Director, by email (preferred) or at the physical address below. Please identify the name, phone number, and email address of a contact person at your agency.

By E-Mail	By Mail
stacie.guzman@mcagov.org	369 West 18th Street, Merced, CA 95340

The project is of regional significance; therefore, in addition to the written comments you may provide, your verbal comments regarding the preparation of the PEIR are also requested. A virtual scoping meeting will be held on ***Thursday, March 20, 2025,*** beginning at 11:00 AM via the Zoom platform. Please register in advance for this meeting using the following link:

https://us06web.zoom.us/meeting/register/O3tZCs-iQmmJZQQ1eom9tA

After registering, you will receive a confirmation email containing information about joining the meeting.

Agency and/or public input can be provided in writing before or after the Scoping Meeting until April 2, 2025. MCAG looks forward to receiving your comments regarding this important project for our region.

Attachment

1

Notice of Preparation and Scoping Meeting
Program Environmental Impact Report
Project Overview and Scope of Environmental Analysis
2026 Regional Transportation Plan and
Sustainable Communities Strategy (RTP/SCS)
February 28, 2025

Project Title

Program Environmental Impact Report (PEIR) for the Merced County Association of Governments (MCAG) 2026 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).

Location

Within the incorporated limits of Merced County, California, including the six (6) incorporated cities (Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced) and all unincorporated areas under the jurisdiction of the County of Merced (reference the map of Merced County on the next page identifying the area to be addressed by the PEIR and the RTP/SCS). Located in the northern portion of the San Joaquin Valley in Central California, Merced County encompasses 1,971 square miles of land. Stanislaus County bounds the county to the north, Mariposa County to the east, Madera and Fresno counties to the south, and Santa Clara and San Benito counties to the west. The 2024 population in Merced County was 293,630, according to the California State Department of Finance (DOF).

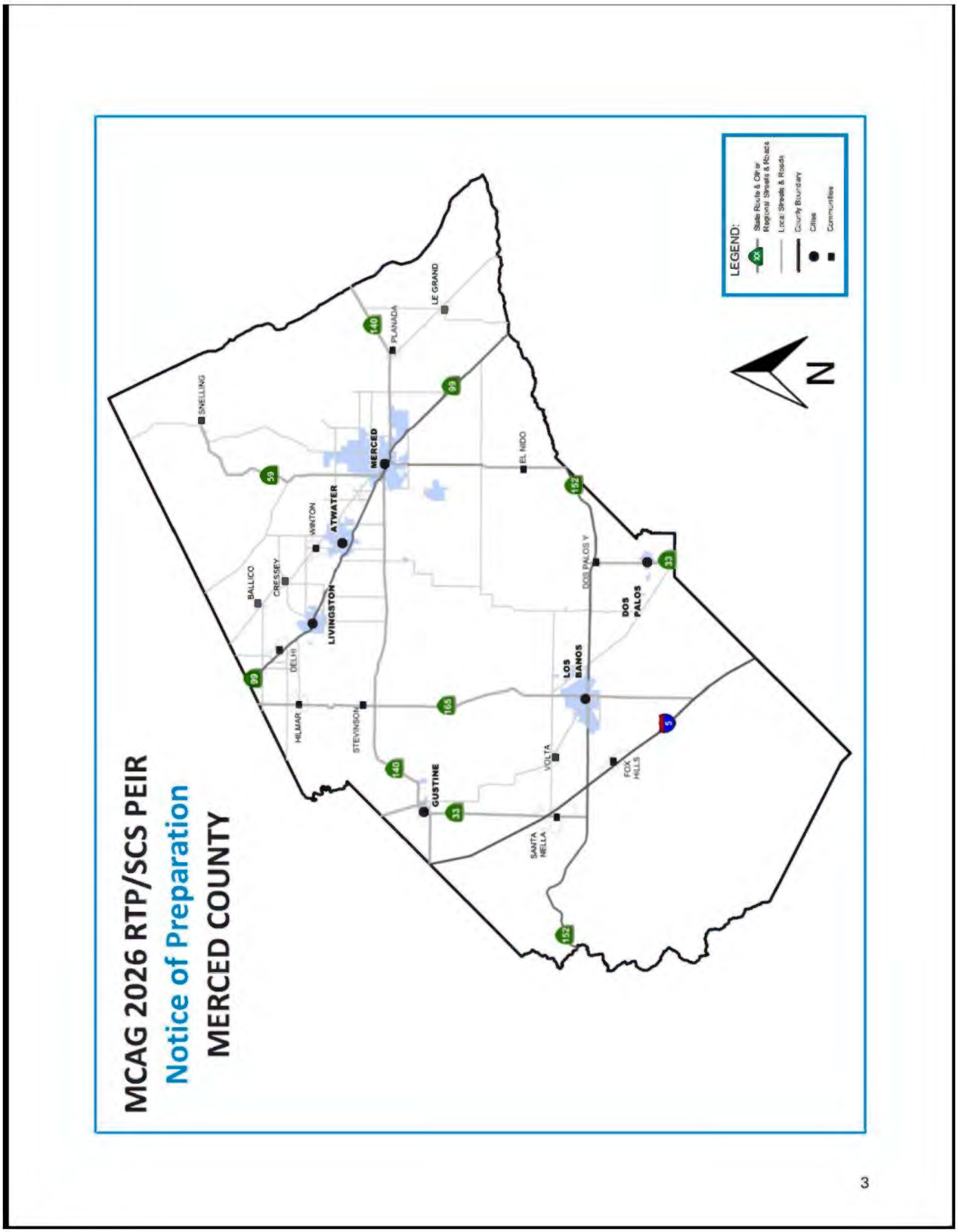
CEQA Requirements

The RTP/SCS PEIR will be prepared in accordance with the California Environmental Quality Act (CEQA) and State CEQA Guidelines. CEQA requires public agencies, such as MCAG, to consider the potential environmental impacts of the proposed 2026 RTP/SCS. The objectives of CEQA are to:

- ✓ Disclose to the MCAG Board and the public the potential environmental impacts of the proposed RTP/SCS
- ✓ Propose feasible alternatives or mitigation measures that avoid, eliminate, or reduce project-related environmental effects and disclose if there are impacts that are unavoidable
- ✓ Describe the analytical process that leads to MCAG's decision on the project
- ✓ Promote interagency coordination
- ✓ Provide a mechanism for increasing public participation in the planning process

The environmental document will be prepared as a "Programmatic" or "Program" EIR (PEIR), which is a type of first-tier document as defined in CEQA Guidelines Sections 15152 (Tiering) and 15168 (Program EIR). A Program EIR is prepared for an agency program or series of actions that can be characterized as one large project.

2


MCAG 2026 RTP/SCS PEIR
Notice of Preparation
MERCED COUNTY
LEGEND:
State Route & Other Regional Streets & Roads
Local Streets & Roads
County Boundary
Cities
Communities
N
MERCED
ATWATER
LIVINGSTON
LOS BANOS
DOS PALOS
GUSTINE
LE GRAND
PLANADA
SNELLING
EL NIDO
DOS PALOS Y
WINTON
BALLICO
CRESSEY
DELHI
HILMAR
STEVINSON
VOLTA
FOX HILLS
SANTA NELLA
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Typically, such a project involves actions that are closely related geographically and are logical parts of a chain of contemplated events, rules, regulations, or plans that govern the conduct of a continuing program with generally similar environmental effects and mitigation measures. The RTP/SCS would be such a project.

It is noted that additional environmental analysis by local jurisdictions or other agencies of individual projects contained in the 2026 RTP/SCS may be required. The tiering concept is a multi-level approach to streamlining subsequent environmental reviews. This first-tier RTP/SCS PEIR will analyze general matters (i.e., broad policies, the planned regional multi-modal transportation system, related impacts, and program-wide mitigation measures). Subsequent tiers prepared by local jurisdictions or other agencies (e.g., later EIRs and Negative Declarations) will include an analysis of narrower, subsequent projects by "incorporating by reference" the general discussions from the broader first-tier RTP/SCS PEIR. Second-tier environmental reviews will focus on the impacts of individual improvement projects that implement the RTP/SCS, related programs, and/or policies.

Regional Planning Background and Overview

MCAG is a voluntary association of local governments and is one of California's 40 regional transportation planning agencies (RTPAs). MCAG was created in 1967 through a Joint Powers Agreement (JPA) composed of elected officials of Merced County and its six (6) incorporated cities. In addition, MCAG is a designated Metropolitan Planning Organization (MPO), which qualifies it for Federal transportation funding as identified in Title 23 U.S.C. Section 134 and Title 23 Code of Federal Regulations (CFR) Part 450.300. MPOs are federally designated, while the State-designated RTPAs are described under California Government Code Section 29532 et seq. MCAG is both an MPO and an RTPA.

As part of the regional transportation planning process, MCAG studies potential transportation improvements, forecasts future conditions and needs, and combines its member agencies' planning resources and expertise to facilitate the development of a shared strategic vision for transportation and development in the region. These responsibilities enable MCAG to fulfill federal and State planning requirements and maintain the eligibility of the Merced region for federal and State funding for transportation planning and improvements.

According to the 2024 California Regional Transportation Planning Guidelines, prepared by the California Transportation Commission (CTC), MCAG is required to adopt and submit an updated RTP to the CTC and the California Department of Transportation (Caltrans) every four (4) years.

The 2026 RTP is a planning document to be developed by MCAG in cooperation with the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Caltrans, and other stakeholders, including transportation system users. Following the passage of *Assembly Bill 32 (AB 32) – The California Global Warming Solutions Act of 2006*, which specifies that by the year 2020, greenhouse gas (GHG) emissions within the State must be at 1990 levels, *Senate Bill 375 (SB 375) – The Sustainable Communities and Climate Protection Act of 2008* was signed into law as the framework for achieving greenhouse gas emissions reductions from land use and transportation planning.

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SB 375 includes four (4) primary findings related to the RTP/SCS development process:

- ✓ That the California Air Resource Board (ARB) develop regional GHG emission reduction targets for cars and light trucks for each of the 18 MPOs in California, including MCAG
- ✓ During this next RTP update, MCAG must prepare an SCS that specifies how ARB's GHG emissions reduction target will be achieved. If the target cannot be met through the SCS, then an Alternative Planning Strategy (APS) shall be prepared by MCAG
- ✓ Streamlines CEQA requirements for specific residential and mixed-use developments that are consistent with the Merced County SCS or APS (as determined by ARB) to achieve the regional GHG emissions reduction target
- ✓ It requires that MCAG conduct the Regional Housing Needs Assessment (RHNA) process consistently with the RTP/SCS process and that the RHNA allocations be consistent with the development pattern in the SCS. The last RHNA planning cycle was during the 2022 RTP/SCS planning cycle. The RTP must be updated every four years, and the RHNA Plan every eight years. Therefore, every other RTP coincides with the RHNA planning process

Project Description

The project, as defined pursuant to the Public Resources Code, Section 21065, is the preparation of the 2026 RTP/SCS. MCAG is in the process of preparing the RTP/SCS as required by Section 65080 et seq., of Chapter 2.5 of the California Government Code, federal guidelines pursuant to new requirements established in the federal surface transportation reauthorization, including the "Surface Transportation Reauthorization Act of 2021 or the "Infrastructure Investment and Jobs Act (IIJA) 2021-2026," the "Moving Ahead for Progress in the 21st Century (MAP-21) 2016-2020," the "Fixing America's Surface Transportation (FAST) Acts – 2012-2014," Transportation Conformity for the Air Quality Attainment Plan per 40 CFR Part 51 and 40 CFR Part 93, and requirements outlined in *Assembly Bill 32, The California Global Warming Solutions Act of 2006*, and *Senate Bill 375 The Sustainable Communities and Climate Protection Act of 2008*. Finally, the CTC has prepared guidelines (most recently adopted by the CTC in 2024) to assist in preparing the RTP/SCS.

The last comprehensive EIR on the RTP/SCS was completed in August 2022 and addressed transportation improvement projects, programs, and funding sources. The 2026 RTP/SCS will address all transportation modes, including motor vehicles, transit (commuter and local), rail (commuter and interregional), goods movement (rail freight and trucking), bicycle and pedestrian facilities, aviation systems, and transportation systems management (TSM) programs and projects considering the horizon year of 2049. In addition, the 2026 RTP/SCS will:

- ✓ Identify the region's transportation goals, objectives, and policies
- ✓ Include the SCS, which demonstrates how the region will meet its GHG reduction targets (currently being discussed by the California Air Resources Board and the eight (8) San Joaquin Valley Regional Transportation Planning Agencies) through integrated land use and housing and transportation planning. *Once adopted by MCAG, the SCS becomes an integral part of the RTP*
- ✓ Set forth an action plan of projects and programs to address the needs consistent with goals such as those listed below from the 2022 RTP/SCS:
  - **Active Transportation (Bicycle & Pedestrian):** A regional transportation system for bicyclists and pedestrians. Create a safe, connected, and integrated regional transportation system for bicyclists and pedestrians.

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- **Air Quality:** Achieve air quality standards set by the Environmental Protection Agency (EPA), and the State Air Resources Board.
- **Aviation:** Provide a fully functional and integrated air service and airport system that complements the countywide transportation system.
- **Energy:** Reduce usage of nonrenewable energy resources for transportation purposes.
- **Goods Movement:** Improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Highways, Streets, and Roads:** Provide a safe and efficient regional road system that accommodates the demand for the movement of people and goods.
- **Land Use Development Patterns and Strategies:** Provide economical, long-term solutions to transportation problems by encouraging community designs that encourage walking, transit, and bicycling.
- **Outreach and Coordination:** Provide a forum for participation and cooperation in transportation planning and facilitate relationships for transportation issues that transcend jurisdictional boundaries.
- **Passenger Rail:** Provide a rail system that offers safe and reliable service for passengers.
- **Reduce Project Delivery Delays:** Efficiently use available transportation funding to expedite delivery of transportation improvements within the region, and delivery of the Measure V expenditure plan.
- **Reliability & Congestion:** Achieve a significant reduction in congestion on the National Highway System. Improve the efficiency of the surface transportation system.
- **Safety for all Roadway Users:** Achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- **Smart Infrastructure:** Coordinate, monitor, and integrate planning and programming for intelligent transportation systems (ITS), smart infrastructure, demand-responsive transportation, and automated vehicles.
- **Social Equity and Environmental Justice:** Promote and provide equitable transportation and housing options for all populations and ensure that all populations share in the benefits of transportation improvements.
- **Sustainable Communities:** Reduce per capita greenhouse gas emissions through compact growth and alternative transportation strategies. Protect and enhance the natural environment. Support vehicle electrification and the provision of electrification infrastructure in public and private parking facilities and structures. Support a vibrant and sustainable regional economy. Maximize the use of Regional Early Action Planning 2.0 funds to implement and advance efforts to reduce per capita greenhouse gas emissions.
- **System Preservation:** Maintain the existing transportation system in a state of good repair.
- **Transit:** Provide an efficient, effective, coordinated regional transit system that increases mobility for urban and rural populations, including transportation for disadvantaged persons.
- **Transportation Financing:** Develop and support financing strategies that provide for continuous implementation of the Regional Transportation Plan projects and strategies

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Specifically, the RTP/SCS will include the following sections, which may be reorganized or modified:

Potential Chapters:

1. Executive Summary
2. Introduction
3. Existing Conditions
4. System Preservation
5. Future Conditions
6. Investment Plan
7. Scenario Development
8. Scenario Evaluation
9. Action Plan
10. Environmental Justice
11. Public Participation

Potential Appendices:

A. Adoption Resolution
B. Response to Comments
C. Public Notices
D. SJV Interregional Goods Movement
E. RTP Checklist
F. Final Programmatic Environmental Impact Report
G. Air Quality Conformity Analysis
H. Glossary of Terms
I. Financial Revenue
J. Regional Demographic Forecast
K. Tier I and Tier 11 Project Lists
L. Performance Measures and Results
M. Scenario Development Overview
N. Public Participation Plans
O. Public Engagement
P. Environmental Justice Analysis
Q. Regional Housing Needs Plan
R. Valleywide Chapter
S. Rodway Function Classification Maps
T. Transit Service Area Maps
U. MCAG CARB SB 375 Methodology
V. System Performance
W. System Performance Report

Preliminary 2026 RTP Project Alternatives and SCS Alternative Scenarios

The following project alternatives were addressed in the 2022 RTP/SCS PEIR and will likely be revised during the development of the 2026 RTP/SCS considering local agency and public outreach and input:

- ✓ No Project
- ✓ Scenario 1 Baseline
- ✓ Scenario 2 Conserve Merced County
- ✓ Scenario 3 Conserve & Connect Merced County

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CEQA Streamlining (SB 375 and SB 226)

SB 375 and SB 226 provide "exemptions" for certain types of projects from CEQA review, or projects may qualify for streamlined review if they conform to the regional SCS or the APS (if applicable). Projects qualify for streamlined CEQA review even if they conflict with local plans following the adoption of the SCS.

Environmental Issues to be Addressed in the PEIR

The programs and projects to be included in the 2026 RTP/SCS will be analyzed through the development of the PEIR. This will allow MCAG to analyze the regional or general impacts of the programs and projects. A more detailed or project-level environmental assessment (if required) of the various projects included in the RTP/SCS will be conducted by the various responsible agencies, including Caltrans, Merced County, and the cities within the Merced region, before the projects are approved for construction and implementation.

Potential environmental impacts that could result from the Project include project impacts to:

- ✓ Aesthetics
- ✓ Agricultural and Forestry Resources
- ✓ Air Quality
- ✓ Biological Resources
- ✓ Climate Change
- ✓ Cultural Resources and Tribal Cultural Resources
- ✓ Energy and Energy Conservation
- ✓ Geology/Soils/Mineral Resources
- ✓ Hazards and Hazardous Materials
- ✓ Hydrology and Water Quality
- ✓ Land Use, Planning, and Recreation
- ✓ Noise and Vibration
- ✓ Population, Housing, and Employment
- ✓ Public Utilities, Other Utilities, and Services Systems
- ✓ Social and Economic Effects
- ✓ Transportation/Traffic in accordance with SB 743
- ✓ Wildfire
- ✓ Alternative (noted above), Cumulative Effects, Growth Inducing Impacts, and Other Issues required by CEQA
- ✓ Mandatory Findings of Significance

Prepared by: Georgiena M. Vivian, President
VRPA Technologies, Inc.
February 28, 2025

Date: February 28, 2025

Name: Stacie Guzman
Title: Executive Director
Agency: Merced County Association of Governments
Phone: (209) 723-3153

8

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

March 28, 2025

Meg Prince
Merced County Association of Governments
369 West 18th Street
Merced, CA, 95340

Project: Notice of Preparation of a Draft Program Environmental Impact Report for the Merced County Association of Governments 2026 Regional Transportation Plan/Sustainable Communities Strategy

District CEQA Reference No: 20250273

Dear Ms. Prince:

The San Joaquin Valley Air Pollution Control District (District) has reviewed the Notice of Preparation (NOP) of a Draft Program Environmental Impact Report (DPEIR) from the Merced County Association of Governments (MCAG) for the 2026 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) project. Per the NOP, the project consists of updating MCAG's transportation plan for the region's transportation system to ensure the plan adequately addresses future transportation needs (Project). The RTP/SCS will address all transportation modes, including motor vehicles, transit, rail, goods movement, bicycle and pedestrian facilities, aviation systems, and transportation systems management. The Project is located within Merced County including six incorporated cities (Atwater, Dos Palos, Gustine, Livingston, Los Banos and Merced), all in California.

The Project is a program level project and, while project-specific data may not be available until specific approvals are being granted, the DPEIR should include a discussion of policies, which when implemented, will reduce or mitigate impacts on air quality at the individual project level.

The District offers the following comments at this time regarding the Project:

1) Transportation/Land Use Planning

Nearly all development projects within the San Joaquin Valley Air Basin, from RTP/SCS to individual projects have the potential to generate air pollutants, making it more difficult to attain state and federal ambient air quality standards. Land use decisions are critical to improving air quality within the San Joaquin Valley Air Basin because land use patterns greatly influence transportation needs, and motor vehicle

Samir Sheikh
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
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Central Region (Main Office)
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Fresno, CA 93726-0244
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Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: (661) 392-5500 FAX: (661) 392-5585

www.valleyair.org www.healthyairliving.com

emissions are the largest source of air pollution in the Valley. Land use decisions and project design elements such as preventing urban sprawl, encouraging mix-use development, and project design elements that reduce vehicle miles traveled (VMT) have proven to be beneficial for air quality. The District recommends that future development projects incorporate strategies that reduce VMTs and require the cleanest available heavy duty trucks, vehicles, and off-road equipment, including zero and near-zero technologies. VMTs can be reduced through encouragement of mix-use development, walkable communities, etc. Additional design element options can be found at:
https://ww2.valleyair.org/media/ob0pweru/clean-air-measures.pdf

In addition, the District recommends future development projects incorporate strategies that will advance implementation of the best practices listed in Tables 5 and 6 of California Air Resource Board's (CARB's) Freight Handbook Concept Paper, to the extent feasible. This document compiles best practices designed to address air pollution impacts as "practices" which may apply to the siting, design, construction, and operation of freight facilities to minimize health impacts on nearby communities. The concept paper is available at:
https://ww2.arb.ca.gov/sites/default/files/2020-03/2019.12.12%20-%20Concept%20Paper%20for%20the%20Freight%20Handbook_1.pdf

2) Project Related Emissions

At the federal level under the National Ambient Air Quality Standards (NAAQS), the District is designated as extreme nonattainment for the 8-hour ozone standards and serious nonattainment for the particulate matter less than 2.5 microns in size (PM2.5) standards. At the state level under California Ambient Air Quality Standards (CAAQS), the District is designated as nonattainment for the 8-hour ozone, PM10, and PM2.5 standards.

As such, the District recommends that the DPEIR stipulate that future development projects within the RTP/SCS identify and characterize project construction and operational air emissions. The District recommends the air emissions be compared to the District significance thresholds as identified in the District's Guidance for Assessing and Mitigating Air Quality Impacts:
https://ww2.valleyair.org/media/g4nl3p0g/gamaqi.pdf. The District recommends that future projects be mitigated to the extent feasible, and that future projects with air emissions above the aforementioned thresholds be mitigated to below these thresholds.

The District understands that the RTP/SCS is a program-level project where future individual project-specific data may not be available at this time. As such, the DPEIR should include a discussion of policies, which when implemented, will require assessment and characterization of future development project-level emissions, and subsequently require mitigation of air quality impacts to the extent feasible at the

individual project-specific level. Future development environmental reviews of potential impacts on air quality should incorporate the following items:

2a) Construction Emissions

The District recommends for future development projects, to reduce impacts from construction-related diesel exhaust emissions, the Project should utilize the cleanest available off-road construction equipment.

2b) Operational Emissions

Future development projects operational (ongoing) air emissions from mobile sources and stationary sources should be analyzed separately. For reference, the District's significance thresholds are identified in the District's Guidance for Assessing and Mitigating Air Quality Impacts: https://ww2.valleyair.org/media/g4nl3p0g/gamaqi.pdf.

Recommended Mitigation Measure: At a minimum, future development project related impacts on air quality should be reduced to levels below the District's significance thresholds through incorporation of design elements such as the use of cleaner Heavy Heavy-Duty (HHD) trucks and vehicles, measures that reduce Vehicle Miles Traveled (VMTs), and measures that increase energy efficiency. More information on transportation mitigation measures can be found at: https://ww2.valleyair.org/media/ob0pweru/clean-air-measures.pdf

2c) Recommended Model for Quantifying Air Emissions

Future development projects criteria pollutant emissions from construction and operational sources should be identified and quantified. Emissions analysis should be performed using the California Emission Estimator Model (CalEEMod), which uses the most recent CARB-approved version of relevant emissions models and emission factors. CalEEMod is available to the public and can be downloaded from the CalEEMod website at: www.caleemod.com.

3) Health Risk Screening/Assessment

The MCAG should evaluate the risk associated with the future development for sensitive receptors (residences, businesses, hospitals, day-care facilities, health care facilities, etc.) in the area and mitigate any potentially significant risk to help limit exposure of sensitive receptors to emissions.

To determine potential health impacts on surrounding receptors (residences, businesses, hospitals, day-care facilities, health care facilities, etc.) a Prioritization and/or a Health Risk Assessment (HRA) should be performed for future

development projects that may be approved under implementation of the RTP/SCS. These health risk determinations should quantify and characterize potential Toxic Air Contaminants (TACs) identified by the Office of Environmental Health Hazard Assessment/California Air Resources Board (OEHHA/CARB) that pose a present or potential hazard to human health.

Health risk analyses should include all potential air emissions from the project, which include emissions from construction of the project, including multi-year construction, as well as ongoing operational activities of the project. Note, two common sources of TACs can be attributed to diesel exhaust emitted from heavy-duty off-road earth moving equipment during construction, and from ongoing operation of heavy-duty on-road trucks.

Prioritization (Screening Health Risk Assessment):
A "Prioritization" is the recommended method for a conservative screening-level health risk assessment. The Prioritization should be performed using the California Air Pollution Control Officers Association's (CAPCOA) methodology. Please contact the District for assistance with performing a Prioritization analysis.

The District recommends that a more refined analysis, in the form of an HRA, be performed for any project resulting in a Prioritization score of 10 or greater. This is because the prioritization results are a conservative health risk representation, while the detailed HRA provides a more accurate health risk evaluation.

Health Risk Assessment:
Prior to performing an HRA, it is strongly recommended that land use agencies/ project proponents develop and submit for District review a health risk modeling protocol that outlines the sources and methodologies that will be used to perform the HRA.

A development project would be considered to have a potentially significant health risk if the HRA demonstrates that the health impacts would exceed the District's established risk thresholds, which can be found here: https://ww2.valleyair.org/permitting/ceqa/.

A project with a significant health risk would trigger all feasible mitigation measures. The District strongly recommends that development projects that result in a significant health risk not be approved by the land use agency.

The District is available to review HRA protocols and analyses. For HRA submittals please provide the following information electronically to the District for review:

- HRA (AERMOD) modeling files
- HARP2 files
- Summary of emissions source locations, emissions rates, and emission factor calculations and methodologies.

For assistance, please contact the District's Technical Services Department by:

- E-Mailing inquiries to: hramodeler@valleyair.org
- Calling (559) 230-5900

Recommended Measure: Future development projects resulting in TAC emissions should be located an adequate distance from residential areas and other sensitive receptors to prevent the creation of a significant health risk in accordance to CARB's Air Quality and Land Use Handbook: A Community Health Perspective located at https://ww2.arb.ca.gov/our-work/programs/resource-center/strategy-development/land-use-resources.

4) Ambient Air Quality Analysis

An Ambient Air Quality Analysis (AAQA) uses air dispersion modeling to determine if emissions increases from a project will cause or contribute to a violation of State or National Ambient Air Quality Standards. The District recommends an AAQA be performed for any future development projects that may be approved under implementation of the Project with emissions that exceed 100 pounds per day of any pollutant.

An AAQA uses air dispersion modeling to determine if emission increase from a project will cause or contribute to a violation of State or National Ambien Air Quality Standards. An acceptable analysis would include emissions from both project-specific permitted and non-permitted equipment and activities. The District recommends consultation with District staff to determine the appropriate model and input data to use in the analysis.

Specific information for assessing significance, including screening tools and modeling guidance, is available online at the District's website: https://ww2.valleyair.org/permitting/ceqa/.

5) Voluntary Emission Reduction Agreement

Future development projects could have a significant impact on air quality. The District recommends the DPEIR include a feasibility discussion on implementing a Voluntary Emission Reduction Agreement (VERA) as a mitigation measure for future development projects that may be approved under implementation of the Project that are determined to exceed the District's CEQA significance thresholds.

A VERA is a mitigation measure by which the project proponent provides pound-for-pound mitigation of emissions increases through a process that develops, funds, and implements emission reduction projects, with the District serving a role of administrator of the emissions reduction projects and verifier of the successful mitigation effort. To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate project specific emissions by providing funds for the District's incentives programs. The funds are disbursed by the District in the form of grants for projects that achieve emission reductions. Thus, project-related impacts on air quality can be mitigated. Types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of agricultural equipment with the latest generation technologies.

In implementing a VERA, the District verifies the actual emission reductions that have been achieved as a result of completed grant contracts, monitors the emission reduction projects, and ensures the enforceability of achieved reductions. After the project is mitigated, the District certifies to the Lead Agency that the mitigation is completed, providing the Lead Agency with an enforceable mitigation measure demonstrating that project-related emissions have been mitigated. To assist the Lead Agency and project proponent in ensuring that the environmental document is compliant with CEQA, the District recommends the environmental document includes an assessment of the feasibility of implementing a VERA.

6) Truck Routing

Truck routing involves the assessment of which roads Heavy Heavy-Duty (HHD) trucks take to and from their destination, and the emissions impact that the HHD trucks may have on residential communities and sensitive receptors.

The District recommends HHD truck routing patterns for future development projects be evaluated, with the aim of limiting exposure of residential communities and sensitive receptors to emissions. This evaluation would consider the current truck routes, the quantity and type of each truck (e.g., Medium Heavy-Duty, HHD, etc.), the destination and origin of each trip, traffic volume correlation with the time of day or the day of the week, overall Vehicle Miles Traveled (VMT), and associated

exhaust emissions. The truck routing evaluation would also identify alternative truck routes and their impacts on VMT and air quality.

7) Vegetative Barriers and Urban Greening

The District suggests future development projects consider incorporating vegetative barriers and urban greening as a measure to further reduce air pollution exposure on sensitive receptors (e.g., residences, schools, healthcare facilities).

While various emission control techniques and programs exist to reduce air quality emissions from mobile and stationary sources, vegetative barriers have been shown to be an additional measure to potentially reduce a population's exposure to air pollution through the interception of airborne particles and the update of gaseous pollutants. Examples of vegetative barriers include, but are not limited to the following: trees, bushes, shrubs, or a mix of these. Generally, a higher and thicker vegetative barrier with full coverage will result in greater reductions in downwind pollutant concentrations. In the same manner, urban greening is also a way to help improve air quality and public health in addition to enhancing the overall beautification of a community with drought tolerant, low-maintenance greenery.

8) On-Site Solar Deployment

It is the policy of the State of California that renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers by December 31, 2045. While various emission control techniques and programs exist to reduce air quality emissions from mobile and stationary sources, the production of solar energy is contributing to improving air quality and public health. The District suggests that solar power systems as an emission reduction strategy be incorporated for future development projects that may be approved under implementation of the Project.

9) Electric Infrastructure

To support and accelerate the installation of electric vehicle charging equipment and development of required infrastructure, the District offers incentives to public agencies, businesses, and property owners of multi-unit dwellings to install electric charging infrastructure (Level 2 and 3 chargers). The purpose of the District's Charge Up! Incentive program is to promote clean air alternative-fuel technologies and the use of low or zero-emission vehicles. The District recommends that the future development project proponents install electric vehicle chargers at project sites, and at strategic locations.

Please visit https://ww2.valleyair.org/grants/charge-up for more information.

10)Locomotives, and Railcar Movers/Switchers

To reduce air quality emission impacts, the District recommends future development freight and passenger train operators to utilize newer, and cleaner technology. Replacing older locomotives is important to reduce the public's exposure to diesel emissions, including PM2.5 in the form of diesel particulate and NOx. These pollutants negatively impact human health, especially for sensitive populations such as children and the elderly. New, clean-technology locomotives generate significantly lower emissions than older, uncontrolled diesel locomotives.

The District offers the following incentive program for locomotive fleets interested in transitioning to newer, clean technology:

- Heavy-Duty Program – https://ww2.valleyair.org/grants/locomotive-program/ Locomotive replacements, including switcher locomotives and railcar movers can be funded as an eligible project category under the District's utilizing funding provided to support AB 617. These projects are administered according to the Carl Moyer Program guidelines.

11)District Rules and Regulations

The District issues permits for many types of air pollution sources, and regulates some activities that do not require permits. A project subject to District rules and regulations would reduce its impacts on air quality through compliance with the District's regulatory framework. In general, a regulation is a collection of individual rules, each of which deals with a specific topic. As an example, Regulation II (Permits) includes District Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), Rule 2520 (Federally Mandated Operating Permits), and several other rules pertaining to District permitting requirements and processes.

The list of rules below is neither exhaustive nor exclusive. Current District rules can be found online at: https://ww2.valleyair.org/rules-and-planning/current-district-rules-and-regulations. To identify other District rules or regulations that apply to future projects, or to obtain information about District permit requirements, the project proponents are strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (209) 557-6446.

11a) District Rules 2010 and 2201 - Air Quality Permitting for Stationary Sources

Stationary Source emissions include any building, structure, facility, or installation which emits or may emit any affected pollutant directly or as a fugitive emission. District Rule 2010 (Permits Required) requires operators of emission sources to obtain an Authority to Construct (ATC) and Permit to

Operate (PTO) from the District. District Rule 2201 (New and Modified Stationary Source Review) requires that new and modified stationary sources of emissions mitigate their emissions using Best Available Control Technology (BACT).

Future development projects may be subject to District Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review) and may require District permits. Prior to construction, project proponents shall obtain an ATC permit from the District for equipment/activities subject to District permitting requirements. For further information or assistance, project proponents may contact the District's SBA Office at (209) 557-6446.

11b) District Rule 9510 - Indirect Source Review (ISR)

The purpose of District Rule 9510 is to reduce the growth in both NOx and PM emissions associated with development and transportation projects from mobile and area sources; specifically, the emissions associated with the construction and subsequent operation of development projects. The Rule requires developers to mitigate their NOx and PM emissions by incorporating clean air design elements into their projects. Should the proposed development project clean air design elements be insufficient to meet the required emission reductions, developers must pay a fee that ultimately funds incentive projects to achieve off-site emissions reductions.

Accordingly, future development projects may be subject to District Rule 9510 if upon full buildout, the project would equal or exceed any of the following applicability thresholds, depending on the type of development and public agency approval mechanism:

Table 1: ISR Applicability Thresholds

Development Type	Discretionary Approval Threshold	Ministerial Approval / Allowed Use / By Right Thresholds
Residential	50 dwelling units	250 dwelling units
Commercial	2,000 square feet	10,000 square feet
Light Industrial	25,000 square feet	125,000 square feet
Heavy Industrial	100,000 square feet	500,000 square feet
Medical Office	20,000 square feet	100,000 square feet
General Office	39,000 square feet	195,000 square feet
Educational Office	9,000 square feet	45,000 square feet
Government	10,00 square feet	50,000 square feet
Recreational	20,000 square feet	100,000 square feet
Other	9,000 square feet	45,000 square feet

District Rule 9510 also applies to any transportation or transit development projects where construction exhaust emissions equal or exceed two tons of NOx or two tons of PM.

In the case the future development project(s) are subject to District Rule 9510, per Section 5.0 of the rule, an Air Impact Assessment (AIA) application is required to be submitted no later than applying for project-level approval from a public agency so that proper mitigation and clean air design under ISR can be incorporated into the public agency's analysis.

Information about how to comply with District Rule 9510 can be found online at: https://ww2.valleyair.org/permitting/indirect-source-review-rule-overview

The AIA application form can be found online at: https://ww2.valleyair.org/permitting/indirect-source-review-rule-overview/forms-and-applications/

District staff is available to provide assistance with determining if future development projects will be subject to Rule 9510, and can be reached by phone at (559) 230-5900 or by email at ISR@valleyair.org.

11c) District Rule 9410 (Employer Based Trip Reduction)

Future development projects may be subject to District Rule 9410 (Employer Based Trip Reduction) if the project would result in employment of 100 or more "eligible" employees. District Rule 9410 requires employers with 100 or more "eligible" employees at a worksite to establish an Employer Trip Reduction Implementation Plan (eTRIP) that encourages employees to reduce single-occupancy vehicle trips, thus reducing pollutant emissions associated with work commutes. Under an eTRIP plan, employers have the flexibility to select the options that work best for their worksites and their employees.

Information about District Rule 9410 can be found online at: https://ww2.valleyair.org/compliance/rule-9410-employer-based-trip-reduction/.

For additional information, you can contact the District by phone at 559-230-6000 or by e-mail at etrip@valleyair.org

11d) Other District Rules and Regulations

Future development projects may also be subject to the following District rules: Rule 4102 (Nuisance) and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations).

12)District Comment Letter

The District recommends that a copy of the District's comments be provided to the Project proponent.

If you have any questions or require further information, please contact Eric McLaughlin by e-mail at eric.mclaughlin@valleyair.org or by phone at (559) 230-5808.

Sincerely,

For: Mark Montelongo
Director of Policy and Government Affairs

STATE OF CALIFORNIA — Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

March 6, 2025

Stacie Guzman
Merced County Association of Governments
369 West 18th Street
Merced CA 95340

Re: 2025030169 MCAG 2026 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Project, Merced County

Dear Ms. Guzman:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project 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. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit. 14, § 15064.5 (b) (CEQA Guidelines § 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides 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. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

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AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that 's on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmenta review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultura resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. 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:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. 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.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d))

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's *"Tribal Consultation Guidelines,"* which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Pricilla.Torres-Fuentes@NAHC.ca.gov.

Sincerely,

Pricilla Torres-Fuentes

Pricilla Torres-Fuentes
Cultural Resources Analyst

cc: State Clearinghouse

APPENDIX B

2026 REGIONAL TRANSPORTATION PLAN PROJECT LIST

APPENDIX B

2026 REGIONAL TRANSPORTATION PLAN PROJECT LIST

Maintenance Project List

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26A-MT-001	Atwater	Bellevue Road Reconstruction from Parade St. to just west of Santa Fe	Reconstruction	Maintenance	2030	$15,000
26A-MT-002	Atwater	Atwater Blvd. Reconstruction from Shaffer Road to Bert Crane Road	Reconstruction	Maintenance	2031	$15,000
26A-MT-003	Atwater	Shaffer Road Rehabilitation south of Santa Fe to Atwater Blvd.	Rehabilitation	Maintenance	2035	$3,000
26A-MT-004	Atwater	East Broadway and Station Road Rehabilitation: from Mogliotti Ave to west of Buhach, and Station Road north of Broadway	Rehabilitation	Maintenance	2026	$750
26A-MT-005	Atwater	SP Avenue Reconstruction between High St and west of Hazel Ave	Reconstruction	Maintenance	2027	$400
26A-MT-006	Atwater	Santa Fe Rehabilitation from Winton Way to Avenue Two	Rehabilitation	Maintenance	2040	$5,000
26A-MT-007	Atwater	Roadway Rehabilitation	Rehabilitation & Maintenance at various locations	Maintenance	2035	$12,000
26D-MT-008	Dos Palos	Rehabilitation on Valeria from SR 33 to Leonard Ave	Rehabilitation	Maintenance	2030	$875
26D-MT-009	Dos Palos	Rehabilitation on Blossom Ave from SR 33 to Reynolds Ave	Rehabilitation	Maintenance	2032	$475
26C-MT-010	Merced County	Rehabilitation on Blossom Ave from Reynolds to Lexington	Rehabilitation	Maintenance	2032	$475
26C-MT-011	Merced County	Rehabilitation on Folsom Ave from Dos Palos City Limits to Merrill Ave.	Rehabilitation	Maintenance	2046	$3,500
26D-MT-012	Dos Palos	Rehabilitation on Center from Marguerite St to City Limits (South of Cole)	Rehabilitation	Maintenance	2028	$450
26D-MT-013	Dos Palos	Roadway Rehabilitation	Rehabilitation & Maintenance at various locations	Maintenance	2035	$4,000

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26G-MT-014	Gustine	East Avenue Road Improvements from SR 140 to Hunt Rd.	Rehabilitation & Complete Streets Improvements	Maintenance	2035	$2,500
26G-MT-015	Gustine	Sullivan Road Improvements from SR 140 to Hunt Rd.	Rehabilitation & Complete Streets Improvements	Maintenance	2035	$3,000
26G-MT-016	Gustine	Hunt Road Improvements from Sullivan Road to Railroad Ave.	Rehabilitation & Complete Streets Improvements	Maintenance	2035	$750
26G-MT-017	Gustine	5th Street Rehab (Downtown Corridor) from SR33/140 to North Ave	Rehab; Intersection & Complete Streets Improvements	Maintenance	2035	$7,500
26G-MT-018	Gustine	Bridge Rehabilitation over CCID Main Canal	On Sullivan Rd, East of Sullivan Rd and SR 33 Intersec.	Maintenance	2035	$10,000
26G-MT-019	Gustine	Roadway Rehabilitation	Rehabilitation & Maintenance at various locations	Maintenance	2035	$4,000
26G-MT-020	Gustine	Kniebs Road Improvements	From Carnation Road to SR 140	Maintenance	2035	$1,750
26S-MT-021	Caltrans	Mer SR 152 Pavement Anchor Project: 1P220	From Merced County line to Badger Flat Road	Maintenance	2030	$155,980
26S-MT-022	Caltrans	Mer I-5 Pavement Anchor Project: 1E880	From Fresno County Line to SR 140 Interchange	Maintenance	2028	$102,440
26S-MT-023	Caltrans	Los Banos SR 152 Pavement Anchor Project: 1E980	In and near Los Banos from 0.3 m west of Badger Flat to 0.2 miles east of San Luis St	Maintenance	2026	$30,200
26S-MT-024	Caltrans	Mer SR 165 Pavement Anchor Project: 1P040	In and near Los Banos from 0.1 m south of Middle Rd to 0.07 m north of Santa Fe Grade	Maintenance	2028	$43,545
26L-MT-025	Livingston	Hammatt Ave Corridor Improvements, between Walnut and Peach	Rehabilitation & Complete Streets Improvements	Maintenance	2049	$8,500

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26L-MT-026	Livingston	Campbell Blvd. Corridor Improvements	Rehab, Complete Streets, and intersection Improvements	Maintenance	2040	$8,500
26L-MT-027	Livingston	Winton Parkway Rehabilitation	Rehabilitation	Maintenance	2028	$3,663
26L-MT-028	Livingston	N. Main Street Rehabilitation	Rehabilitation	Maintenance	2030	$3,788
26L-MT-029	Livingston	Roadway Rehabilitation	Rehabilitation & Maintenance at various locations	Maintenance	2035	$5,500
26L-MT-030	Livingston	Roadway Rehabilitation	Rehabilitation & Maintenance at various locations	Maintenance	2035	$8,000
26B-MT-031	Los Banos	Roadway Rehabilitation	Rehabilitation & Maintenance at various locations	Maintenance	2035	$20,000
26B-MT-032	Los Banos	Nantes Avenue Rehabilitation	From Overland Avenue to City Limits	Maintenance	2029	$750
26B-MT-033	Los Banos	West I Street Rehabilitation	From Pacheco (SR 152) to Arizona Avenue	Maintenance	2027	$1,500
26B-MT-034	Los Banos	H Street Rehabilitation	From 7th Street to Colorado Avenue	Maintenance	2030	$800
26B-MT-035	Los Banos	Willmott Road Rehabilitation	From Mercy Springs (SR 165) to Frank Street	Maintenance	2030	$300
26M-MT-036	Merced	R St. Improvements	Reconstruction from Olive Ave to Loughborough	Maintenance	2030	$3,000
26M-MT-037	Merced	R St. Improvements	Reconstruction from 16th to 18th streets	Maintenance	2030	$3,000
26M-MT-038	Merced	R St. Improvements	Reconstruction from Buena Vista to Yosemite Ave.	Maintenance	2035	$2,000
26M-MT-039	Merced	M St. Reconstruction	From Yosemite Ave. to Lehigh Dr.	Maintenance	2035	$2,500
26M-MT-040	Merced	16th St. Reconstruction	From G St. to SR 140	Maintenance	2040	$3,000

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26M-MT-041	Merced	18th St. Reconstruction	From R St. to V St.	Maintenance	2028	$3,000
26M-MT-042	Merced	Collins Dr. Reconstruction	From Olive to Loughborough	Maintenance	2028	$800
26M-MT-043	Merced	McKee Road Rehabilitation	From Yosemite to Santa Fe	Maintenance	2026	$1,250
26M-MT-044	Merced	Yosemite Ave. Reconstruction	From M St. to R St.	Maintenance	2030	$2,000
26M-MT-045	Merced	Road Maintenance adjacent to M St. Bridge	Maintenance of road adjacent to M St. Bridge	Maintenance	2035	$3,000
26M-MT-046	Merced	G St. Bridge Undercrossing Maintenance	Maintenance of road at G Street Undercrossing	Maintenance	2035	$3,000
26M-MT-047	Merced	Roadway Rehabilitation	Rehabilitation & Maintenance at various locations	Maintenance	2035	$44,000
26V-BR-001	Various	Various HBP Bridge Replacement Projects	Various Bridge Replacement On/Off System County Wide	Bridge	2049	$75,000
26C-MT-048	Merced County	Maintenance and Rehabilitation on Various Roadways	Rehabilitation	Maintenance	2049	$300,000
26C-MT-049	Merced County	Rehabilitation on Alfalfa Ave from Mission Ave to Mc Henry Rd	Rehabilitation	Maintenance	2030	$1,125
26C-MT-050	Merced County	Rehabilitation on Almond Ave from Winton Way to Central Ave	Rehabilitation	Maintenance	2030	$1,500
26C-MT-051	Merced County	Rehabilitation on American Ave from Camden Dr to Columbus Ave	Rehabilitation	Maintenance	2035	$2,250
26C-MT-052	Merced County	Rehabilitation on Applegate Rd from SR 140 to Atwater City Limits	Rehabilitation	Maintenance	2040	$2,380
26C-MT-053	Merced County	Rehabilitation on Arboleda Dr from Yosemite Ave to Le Grand Rd	Rehabilitation	Maintenance	2035	$5,513
26C-MT-054	Merced County	Rehabilitation on Ashby Rd from Merced City Limits to Franklin Rd	Rehabilitation	Maintenance	2035	$1,828

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26C-MT-055	Merced County	Rehabilitation on Atwater Blvd from Merced City Limits to Franklin Rd	Rehabilitation	Maintenance	2035	$550
26C-MT-056	Merced County	Rehabilitation on Atwater Jordan Rd from Giannini Rd to Wier Ave	Rehabilitation	Maintenance	2035	$9,189
26C-MT-057	Merced County	Rehabilitation on August Ave from Stephens St to Stanislaus County line	Rehabilitation	Maintenance	2035	$8,033
26C-MT-058	Merced County	Rehabilitation on Ave Two from Atwater City Limits to Santa Fe Dr	Rehabilitation	Maintenance	2035	$595
26C-MT-059	Merced County	Rehabilitation on Badger Flat Rd from Ingomar Grade to Los Banos City Limits	Rehabilitation	Maintenance	2035	$774
26C-MT-060	Merced County	Rehabilitation on Beachwood Dr from Belcher Ave to Ashby Rd	Rehabilitation	Maintenance	2035	$1,360
26C-MT-061	Merced County	Rehabilitation on Belcher Ave from Santa Fe Dr to SR 59	Rehabilitation	Maintenance	2035	$1,615
26C-MT-062	Merced County	Rehabilitation on Bellevue Rd from Fox Rd to Merced City Limits	Rehabilitation	Maintenance	2035	$2,975
26C-MT-063	Merced County	Rehabilitation on Billy Wright Rd from SR 152 to End	Rehabilitation	Maintenance	2035	$2,440
26C-MT-064	Merced County	Rehabilitation on Bloss Ave from Columbus Ave to SR 99	Rehabilitation	Maintenance	2035	$6,000
26C-MT-065	Merced County	Rehabilitation on Blossom Ave from Reynolds Ave to Lexington Ave	Rehabilitation	Maintenance	2035	$458
26C-MT-066	Merced County	Rehabilitation on Bradbury Rd from Lee Rd to Stanislaus County Line	Rehabilitation	Maintenance	2040	$9,859
26C-MT-067	Merced County	Rehabilitation on Breeze St from SR 59 to End	Rehabilitation	Maintenance	2035	$382
26C-MT-068	Merced County	Rehabilitation on Broadway from Francher St to Sutter St	Rehabilitation	Maintenance	2035	$1,000
26C-MT-069	Merced County	Rehabilitation on Buchanan Hollow Rd from Silveira Way to Santa Fe Ave	Rehabilitation	Maintenance	2035	$6,545

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26C-MT-070	Merced County	Rehabilitation on Buhach Rd from SR 140 to Ashby Rd	Rehabilitation	Maintenance	2035	$1,828
26C-MT-071	Merced County	Rehabilitation on Burchell Ave from Childs Ave to Le Grand Rd	Rehabilitation	Maintenance	2035	$3,500
26C-MT-072	Merced County	Rehabilitation on California St from Olive Ave to Santa Fe Dr	Rehabilitation	Maintenance	2035	$791
26C-MT-073	Merced County	Rehabilitation on Camden Dr from American Ave to First St	Rehabilitation	Maintenance	2035	$425
26C-MT-074	Merced County	Rehabilitation on Campbell Blvd from Liberty Ave to Livingston City Limits	Rehabilitation	Maintenance	2035	$1,335
26C-MT-075	Merced County	Rehabilitation on Cardella Dr from Hatch Rd to Lake Rd	Rehabilitation	Maintenance	2035	$425
26C-MT-076	Merced County	Rehabilitation on Cardoza Rd from Center Ave to Los Banos City Limits	Rehabilitation	Maintenance	2035	$442
26C-MT-077	Merced County	Rehabilitation on Carmellia Ave from Palm Ave to Dos Palos City Limits	Rehabilitation	Maintenance	2035	$442
26C-MT-078	Merced County	Rehabilitation on Cemetery Ave from River Rd to Third Ave	Rehabilitation	Maintenance	2035	$1,071
26C-MT-079	Merced County	Rehabilitation on Center Ave from Los Banos City Limits to Pioneer Rd	Rehabilitation	Maintenance	2035	$1,046
26C-MT-080	Merced County	Rehabilitation on Central Ave from Walnut Ave to Olive Ave	Rehabilitation	Maintenance	2035	$1,547
26C-MT-081	Merced County	Rehabilitation on Chestnut Ln from Walnut Ave to Santa Fe Dr	Rehabilitation	Maintenance	2035	$536
26C-MT-082	Merced County	Rehabilitation on Childs Ave from Burchell Ave to Merced City Limits, Merced City Limit to De Long St	Rehabilitation	Maintenance	2035	$5,976
26C-MT-083	Merced County	Rehabilitation on Christian Ave from SR 33 to Lexington Ave	Rehabilitation	Maintenance	2035	$850
26C-MT-084	Merced County	Rehabilitation on Collier Rd from SR 99 to Canal Dr	Rehabilitation	Maintenance	2035	$213

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26C-MT-085	Merced County	Rehabilitation on Columbus Ave from August Ave to Williams Ave	Rehabilitation	Maintenance	2035	$1,700
26C-MT-086	Merced County	Rehabilitation on Commerce Ave from S.P. Ave to Atwater City Limits	Rehabilitation	Maintenance	2035	$94
26C-MT-087	Merced County	Rehabilitation on Cortez Ave from Santa Fe Dr to South Ave	Rehabilitation	Maintenance	2035	$2,839
26C-MT-088	Merced County	Rehabilitation on Cottonwood Rd from Ingomar Rd to Orchard Rd	Rehabilitation	Maintenance	2035	$4,386
26C-MT-089	Merced County	Rehabilitation on Cox Ferry Rd from Keyes Rd to Turlock Rd	Rehabilitation	Maintenance	2035	$2,397
26C-MT-090	Merced County	Rehabilitation on Cressey Way from Meadow Dr to Liberty Ave	Rehabilitation	Maintenance	2035	$2,873
26C-MT-091	Merced County	Rehabilitation on Cunningham Rd from SR 140 to Santa Fe Ave	Rehabilitation	Maintenance	2035	$5,474
26C-MT-092	Merced County	Rehabilitation on Cypress Ave from Walnut Ave to Gertrude Ave	Rehabilitation	Maintenance	2035	$850
26C-MT-093	Merced County	Rehabilitation on Dan Ward Rd from Beachwood Dr to Franklin Rd	Rehabilitation	Maintenance	2035	$638
26C-MT-094	Merced County	Rehabilitation on Dickenson Ferry Rd from SR 59 to Quinley Ave	Rehabilitation	Maintenance	2035	$5,058
26C-MT-095	Merced County	Rehabilitation on Dos Palos Rd from SR 33 to Santa Fe Grade	Rehabilitation	Maintenance	2035	$1,012
26C-MT-096	Merced County	Rehabilitation on Dunn Rd from Lake Rd to Gardner Ave	Rehabilitation	Maintenance	2035	$850
26C-MT-097	Merced County	Rehabilitation on Eagle Field Rd from Fresno County Line to Pole Line Rd	Rehabilitation	Maintenance	2035	$3,145
26C-MT-098	Merced County	Rehabilitation on East Ave from Oakdale Rd to Stanislaus County Line	Rehabilitation	Maintenance	2035	$4,310
26C-MT-099	Merced County	Rehabilitation on El Capitan Way from Santa Fe Dr to Stephen St	Rehabilitation	Maintenance	2035	$4,913

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26C-MT-100	Merced County	Rehabilitation on Elgin Ave from Henry Miller Ave to Hutchins Rd	Rehabilitation	Maintenance	2035	$850
26C-MT-101	Merced County	Rehabilitation on Eucalyptus Rd from Palm Ave to SR 33	Rehabilitation	Maintenance	2035	$850
26C-MT-102	Merced County	Rehabilitation on Fahey Rd from Ingomar Grade to SR 33	Rehabilitation	Maintenance	2035	$3,298
26C-MT-103	Merced County	Rehabilitation on Faith Home Rd from Stanislaus County Line to Williams Ave	Rehabilitation	Maintenance	2035	$2,015
26C-MT-104	Merced County	Rehabilitation on Farmland Ave from Hillcrest Rd to G St	Rehabilitation	Maintenance	2035	$429
26C-MT-105	Merced County	Rehabilitation on Fleming Rd from Buhach Rd to Giannini Rd	Rehabilitation	Maintenance	2035	$1,131
26C-MT-106	Merced County	Rehabilitation on Flower St from Bradbury Rd to Letteau Ave	Rehabilitation	Maintenance	2035	$1,156
26C-MT-107	Merced County	Rehabilitation on Fourth St from El Capitan Way to South Ave	Rehabilitation	Maintenance	2035	$774
26C-MT-108	Merced County	Rehabilitation on Franklin Rd from Bellevue Rd to SR 140	Rehabilitation	Maintenance	2035	$3,706
26C-MT-109	Merced County	Rehabilitation on Fresno Rd from Jefferson St to Le Grand Rd	Rehabilitation	Maintenance	2035	$221
26C-MT-110	Merced County	Rehabilitation on G St from Snelling Rd to Old Lake Rd	Rehabilitation	Maintenance	2035	$1,896
26C-MT-111	Merced County	Rehabilitation on Geer Ave from Golf Link Rd to Faith Home Rd	Rehabilitation	Maintenance	2035	$4,250
26C-MT-112	Merced County	Rehabilitation on Gerard Ave from Doppler Rd to Merced City Limits	Rehabilitation	Maintenance	2035	$1,207
26C-MT-113	Merced County	Rehabilitation on Gertrude Ave from Atwater City Limits to Cypress Ave	Rehabilitation	Maintenance	2035	$1,020
26C-MT-114	Merced County	Rehabilitation on Giannini Rd from Commerce Ave to Mulberry Ave	Rehabilitation	Maintenance	2040	$1,063

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26C-MT-115	Merced County	Rehabilitation on Golden State Blvd from Stanislaus County Line to SR 99	Rehabilitation	Maintenance	2035	$1,411
26C-MT-116	Merced County	Rehabilitation on Golf Rd from Old Lake Rd to Bellevue Rd	Rehabilitation	Maintenance	2035	$850
26C-MT-117	Merced County	Rehabilitation on Gonzaga Rd from SR 152 to End	Rehabilitation	Maintenance	2035	$2,550
26C-MT-118	Merced County	Rehabilitation on Griffith Ave from Golden State Blvd to Bloss Ave	Rehabilitation	Maintenance	2035	$3,502
26C-MT-119	Merced County	Rehabilitation on Gun Club Rd from Hunt Rd to SR 33	Rehabilitation	Maintenance	2035	$850
26C-MT-120	Merced County	Rehabilitation on Gurr Rd from SR 140 to Sandy Mush Rd	Rehabilitation	Maintenance	2035	$6,902
26C-MT-121	Merced County	Rehabilitation on H St from Los Banos City Limits to Badger Flat Rd	Rehabilitation	Maintenance	2035	$595
26C-MT-122	Merced County	Rehabilitation on Hatch Rd from Cardella Rd to Yosemite Ave	Rehabilitation	Maintenance	2035	$859
26C-MT-123	Merced County	Rehabilitation on Henry St from Gerard Ave to Mission Ave	Rehabilitation	Maintenance	2035	$442
26C-MT-124	Merced County	Rehabilitation on Hillcrest Rd from Old Lake Rd to Farmland Ave	Rehabilitation	Maintenance	2035	$442
26C-MT-125	Merced County	Rehabilitation on Hinton Ave from Schendel Rd to August Ave	Rehabilitation	Maintenance	2035	$570
26C-MT-126	Merced County	Rehabilitation on Hornitos Rd from Merced Falls Rd to Mariposa County Line	Rehabilitation	Maintenance	2035	$2,763
26C-MT-127	Merced County	Rehabilitation on Hunt Rd from Cottonwood Rd to Gustine City Limits	Rehabilitation	Maintenance	2040	$3,195
26C-MT-128	Merced County	Rehabilitation on Hupp St from Childs Ave to Broadway	Rehabilitation	Maintenance	2035	$238
26C-MT-129	Merced County	Rehabilitation on Hutchins Rd from Indiana Rd to Elgin Rd	Rehabilitation	Maintenance	2035	$1,649

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26C-MT-130	Merced County	Rehabilitation on Indiana Rd from Washington Rd to Hutchin Rd	Rehabilitation	Maintenance	2035	$1,972
26C-MT-131	Merced County	Rehabilitation on Ingomar Grade from Badger Flat Rd to Husman Rd	Rehabilitation	Maintenance	2035	$7,347
26C-MT-132	Merced County	Rehabilitation on Ingomar Rd from Pfitzer Rd to Husman Rd	Rehabilitation	Maintenance	2035	$3,176
26C-MT-133	Merced County	Rehabilitation on Jefferson St from Fresno Rd to Le Grand Rd	Rehabilitation	Maintenance	2035	$602
26C-MT-134	Merced County	Rehabilitation on Jones Rd from Olive Ave to Santa Fe Dr	Rehabilitation	Maintenance	2035	$415
26C-MT-135	Merced County	Rehabilitation on Kahlon Rd from Healy Rd to End	Rehabilitation	Maintenance	2035	$8,394
26C-MT-136	Merced County	Rehabilitation on Kelley Rd from Turner Rd to River Rd	Rehabilitation	Maintenance	2035	$1,471
26C-MT-137	Merced County	Rehabilitation on Keyes Rd from Montgomery St to Stanislaus County Line	Rehabilitation	Maintenance	2035	$8,203
26C-MT-138	Merced County	Rehabilitation on Kniebes Rd from SR 140 to Gustine City Limits	Rehabilitation	Maintenance	2035	$425
26C-MT-139	Merced County	Rehabilitation on La Grange Rd from Stanislaus County Line to SR 59	Rehabilitation	Maintenance	2035	$5,551
26C-MT-140	Merced County	Rehabilitation on Lake Rd from Merced City Limits to Yosemite Ave, Merced City Limits to End	Rehabilitation	Maintenance	2035	$1,162
26C-MT-141	Merced County	Rehabilitation on Le Grand Rd from Raynor Ranch Rd to Kahlon Rd	Rehabilitation	Maintenance	2035	$11,390
26C-MT-142	Merced County	Rehabilitation on Lee Rd from Oakdale Rd to Bradbury Rd	Rehabilitation	Maintenance	2035	$2,125
26C-MT-143	Merced County	Rehabilitation on Letteau Ave from El Capitan Way to Griffith Ave	Rehabilitation	Maintenance	2035	$1,624
26C-MT-144	Merced County	Rehabilitation on Lexington Ave from Carmellia Ave to Santa Fe Grade	Rehabilitation	Maintenance	2035	$1,870

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26C-MT-145	Merced County	Rehabilitation on Liberty Ave from Central Ave to Campbell Blvd	Rehabilitation	Maintenance	2035	$1,982
26C-MT-146	Merced County	Rehabilitation on Lincoln Blvd from Livingston City Limits to SR 140	Rehabilitation	Maintenance	2040	$4,250
26C-MT-147	Merced County	Rehabilitation on Lobo Ave from Bryant Ave to Franklin Rd	Rehabilitation	Maintenance	2040	$850
26C-MT-148	Merced County	Rehabilitation of Livingston Cressey Rd from Cressey Way to Livingston City Limits	Rehabilitation	Maintenance	2035	$3,026
26C-MT-149	Merced County	Rehabilitation on Marino Way from McHenry Rd to Worden Ave	Rehabilitation	Maintenance	2035	$1,668
26C-MT-150	Merced County	Rehabilitation on McCabe Rd from SR 33 to Whitworth Rd	Rehabilitation	Maintenance	2035	$850
26C-MT-151	Merced County	Rehabilitation on McKee Rd from Santa Fe Ave to Merced City Limits	Rehabilitation	Maintenance	2035	$1,187
26C-MT-152	Merced County	Rehabilitation on Meadow Dr from Shaffer Rd to Cressey Way	Rehabilitation	Maintenance	2035	$3,553
26C-MT-153	Merced County	Rehabilitation on Merced Ave from Flower St to Bloss Ave	Rehabilitation	Maintenance	2035	$2,397
26C-MT-154	Merced County	Rehabilitation on Merced Falls Rd from Mariposa County Line to La Grange Rd	Rehabilitation	Maintenance	2035	$6,120
26C-MT-155	Merced County	Rehabilitation on Mervel Ave from SR 165 to Ortigalita Rd	Rehabilitation	Maintenance	2035	$1,700
26C-MT-156	Merced County	Rehabilitation on Minturn Rd from Le Grand Rd to Madera County Line	Rehabilitation	Maintenance	2035	$4,514
26C-MT-157	Merced County	Rehabilitation on Mission Ave from Tyler Rd to Merced City Limits	Rehabilitation	Maintenance	2035	$2,050
26C-MT-158	Merced County	Rehabilitation on Mitchell Rd from Turner Rd to Stanislaus County Line	Rehabilitation	Maintenance	2035	$2,720
26C-MT-159	Merced County	Rehabilitation on Montgomery St from Keyes Rd to SR 59	Rehabilitation	Maintenance	2035	$901

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26C-MT-160	Merced County	Rehabilitation on Moran Ave from Buhach Rd to Applegate Rd	Rehabilitation	Maintenance	2035	$1,734
26C-MT-161	Merced County	Rehabilitation on Mulberry Ave from Buhach Rd to Giannini Rd	Rehabilitation	Maintenance	2035	$1,105
26C-MT-162	Merced County	Rehabilitation on Myrtle Ave from California St to Jones Rd	Rehabilitation	Maintenance	2035	$629
26C-MT-163	Merced County	Rehabilitation on N. Bear Creek Dr from McKee Rd to Merced City Limits	Rehabilitation	Maintenance	2035	$850
26C-MT-164	Merced County	Rehabilitation on Nevada St from SR 59 to End	Rehabilitation	Maintenance	2035	$425
26C-MT-165	Merced County	Rehabilitation on Nickle Rd from Sandy Mush Rd to Sand Slough Rd	Rehabilitation	Maintenance	2035	$850
26C-MT-166	Merced County	Rehabilitation on Oakdale Rd from Stanislaus County Line to SR 59	Rehabilitation	Maintenance	2035	$10,481
26C-MT-167	Merced County	Rehabilitation on Old Lake Rd from Golf Rd to G St	Rehabilitation	Maintenance	2035	$850
26C-MT-168	Merced County	Rehabilitation on Olive Ave from Shaffer Rd to Vine Ave	Rehabilitation	Maintenance	2040	$1,700
26C-MT-169	Merced County	Rehabilitation on Olive Ave from Atwater City Limits to Liberty Ave	Rehabilitation	Maintenance	2035	$2,788
26C-MT-170	Merced County	Rehabilitation on Olive Ave from Arboleda Dr to Merced City Limits	Rehabilitation	Maintenance	2035	$2,873
26C-MT-171	Merced County	Rehabilitation on Orchard Rd from Stanislaus County Line to Cottonwood Rd	Rehabilitation	Maintenance	2035	$4,514
26C-MT-172	Merced County	Rehabilitation on Ortigalita Rd from Los Banos City Limits to Mervel Ave	Rehabilitation	Maintenance	2035	$4,267
26C-MT-173	Merced County	Rehabilitation on Overland Ave from Los Banos City Limits to H St	Rehabilitation	Maintenance	2035	$357
26C-MT-174	Merced County	Rehabilitation on Palm Ave from Hutchins Rd to Valeria Ave	Rehabilitation	Maintenance	2035	$6,000

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26C-MT-175	Merced County	Rehabilitation on Peach Ave from Sultana Dr to Livingston City Limits	Rehabilitation	Maintenance	2040	$1,020
26C-MT-176	Merced County	Rehabilitation on Pioneer Ave from Los Banos City Limits to Billy Wright Rd	Rehabilitation	Maintenance	2035	$3,332
26C-MT-177	Merced County	Rehabilitation on Plainsburg Rd from SR 140 to Sandy Mush Rd	Rehabilitation	Maintenance	2035	$6,724
26C-MT-178	Merced County	Rehabilitation on Plaza Dr from McCabe Rd to SR 33	Rehabilitation	Maintenance	2035	$306
26C-MT-179	Merced County	Rehabilitation on Pole Line Rd from SR 165 to Eagle Field Rd	Rehabilitation	Maintenance	2035	$2,890
26C-MT-180	Merced County	Rehabilitation on Quinley Ave from Mulberry Rd to Dickenson Ferry Rd	Rehabilitation	Maintenance	2035	$3,086
26C-MT-181	Merced County	Rehabilitation on Ranchero Ln from Dan Ward Rd to Lobo Ave	Rehabilitation	Maintenance	2035	$425
26C-MT-182	Merced County	Rehabilitation on Raynor Ranch Rd from Mariposa County Line to Le Grand Rd	Rehabilitation	Maintenance	2035	$3,515
26C-MT-183	Merced County	Rehabilitation on Reynold Ave from Valeria Ave to Shain Ave	Rehabilitation	Maintenance	2035	$850
26C-MT-184	Merced County	Rehabilitation on River Rd from Vinewood Ave to Stanislaus County Line	Rehabilitation	Maintenance	2035	$10,311
26C-MT-185	Merced County	Rehabilitation on Robin Ave from Livingston City Limits to Peach Ave	Rehabilitation	Maintenance	2035	$213
26C-MT-186	Merced County	Rehabilitation on Russell Ave from P St to Fresno County Line	Rehabilitation	Maintenance	2035	$445
26C-MT-187	Merced County	Rehabilitation on S Bear Creek Dr from Arboleda Dr to Merced City Limits	Rehabilitation	Maintenance	2035	$3,749
26C-MT-188	Merced County	Rehabilitation on SP Ave from Franklin Rd to Shaffer Rd	Rehabilitation	Maintenance	2035	$2,924
26C-MT-189	Merced County	Rehabilitation on San Luis Dr from Gonzaga Rd to Vista Grande Dr	Rehabilitation	Maintenance	2035	$196

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26C-MT-190	Merced County	Rehabilitation on Sand Slough Rd from Nickle Rd to Turner Island Rd	Rehabilitation	Maintenance	2035	$850
26C-MT-191	Merced County	Rehabilitation on Sandy Mush Rd from Kahlon Rd to Nickle Rd	Rehabilitation	Maintenance	2035	$16,660
26C-MT-192	Merced County	Rehabilitation on Santa Fe Ave from Madera County Line to Childs Ave	Rehabilitation	Maintenance	2035	$10,000
26C-MT-193	Merced County	Rehabilitation on Santa Fe Ave from SR 140 to Merced City Limits	Rehabilitation	Maintenance	2035	$893
26C-MT-194	Merced County	Rehabilitation on Santa Fe Dr from Merced City Limits to Atwater City Limits	Rehabilitation	Maintenance	2035	$8,442
26C-MT-195	Merced County	Rehabilitation on Santa Fe Dr from Atwater City Limits to Stanislaus County Line	Rehabilitation	Maintenance	2035	$11,050
26C-MT-196	Merced County	Rehabilitation on Santa Fe Grade from Lexington Ave to Dos Palos Rd	Rehabilitation	Maintenance	2035	$459
26C-MT-197	Merced County	Rehabilitation on Schendel Rd from Stephens St to Griffith Ave	Rehabilitation	Maintenance	2035	$1,824
26C-MT-198	Merced County	Rehabilitation on Shaffer Rd from Oakdale Rd to Santa Fe Dr	Rehabilitation	Maintenance	2035	$4,148
26C-MT-199	Merced County	Rehabilitation on Shain Ave from SR 33 to Seventh St	Rehabilitation	Maintenance	2035	$644
26C-MT-200	Merced County	Rehabilitation on Shanks Rd from Vincent to August Ave	Rehabilitation	Maintenance	2035	$1,434
26C-MT-201	Merced County	Rehabilitation on Silveira Way from Plainsburg Rd to Le Grand Rd	Rehabilitation	Maintenance	2035	$3,054
26C-MT-202	Merced County	Rehabilitation on Sixth St from Shain Ave to N St	Rehabilitation	Maintenance	2035	$383
26C-MT-203	Merced County	Rehabilitation on Snelling Rd from SR 59 to G St	Rehabilitation	Maintenance	2035	$8,517
26C-MT-204	Merced County	Rehabilitation on South Ave from Cortez Ave to Hillside Dr	Rehabilitation	Maintenance	2035	$1,641

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26C-MT-205	Merced County	Rehabilitation on Station Ave from SP Ave to Moran Ave	Rehabilitation	Maintenance	2035	$1,355
26C-MT-206	Merced County	Rehabilitation on Stephens St from El Capitan Way to Sycamore St	Rehabilitation	Maintenance	2035	$1,428
26C-MT-207	Merced County	Rehabilitation on Stretch Rd from McKee Rd to Merced City Limits	Rehabilitation	Maintenance	2035	$527
26C-MT-208	Merced County	Rehabilitation on Sultana Dr from SR 140 to Olive Ave	Rehabilitation	Maintenance	2035	$4,565
26C-MT-209	Merced County	Rehabilitation on Sutter St from SR 140 to Santa Fe Dr	Rehabilitation	Maintenance	2035	$323
26C-MT-210	Merced County	Rehabilitation on Sycamore St from Stephens St to Bloss Ave	Rehabilitation	Maintenance	2035	$638
26C-MT-211	Merced County	Rehabilitation on Third Ave from SR 165 to Cemetery Ave	Rehabilitation	Maintenance	2035	$3,400
26C-MT-212	Merced County	Rehabilitation on Thornton Rd from SR 140 to Merced City Limits	Rehabilitation	Maintenance	2035	$213
26C-MT-213	Merced County	Rehabilitation on Turlock Rd from SR 59 to Lee Rd	Rehabilitation	Maintenance	2035	$7,353
26C-MT-214	Merced County	Rehabilitation on Turner Island Rd from Sand Slough Rd to SR 152	Rehabilitation	Maintenance	2035	$7,013
26C-MT-215	Merced County	Rehabilitation on Turner Rd from Mitchell Rd to Central Ave	Rehabilitation	Maintenance	2035	$867
26C-MT-216	Merced County	Rehabilitation on Tyler Rd from Childs Ave to Merced City Limits	Rehabilitation	Maintenance	2035	$646
26C-MT-217	Merced County	Rehabilitation on Valeria Ave from Custer Ave to Dos Palos City Limits	Rehabilitation	Maintenance	2035	$1,369
26C-MT-218	Merced County	Rehabilitation on Vera Cruz Dr from End to Luis Ave	Rehabilitation	Maintenance	2035	$849
26C-MT-219	Merced County	Rehabilitation on Vincent Rd from Stanislaus County Line to El Capitan Way	Rehabilitation	Maintenance	2035	$2,822

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26C-MT-220	Merced County	Rehabilitation on Vine Ave from Olive Ave to Walnut Ave	Rehabilitation	Maintenance	2035	$425
26C-MT-221	Merced County	Rehabilitation on Vinewood Ave from Robin Ave to River Rd	Rehabilitation	Maintenance	2035	$2,139
26C-MT-222	Merced County	Rehabilitation on Volta Rd from Ingomar Grade to End	Rehabilitation	Maintenance	2035	$3,927
26C-MT-223	Merced County	Rehabilitation on Walnut Ave from Shaffer Rd to Livingston City Limits	Rehabilitation	Maintenance	2035	$4,930
26C-MT-224	Merced County	Rehabilitation on Washington Rd from Madera County Line to Indiana Rd	Rehabilitation	Maintenance	2035	$9,112
26C-MT-225	Merced County	Rehabilitation on Weir Ave from Westside Blvd to Atwater Jordan Rd	Rehabilitation	Maintenance	2035	$1,700
26C-MT-226	Merced County	Rehabilitation on Westside Blvd from Olive Ave to SR 165	Rehabilitation	Maintenance	2035	$9,724
26C-MT-227	Merced County	Rehabilitation on Whitworth Rd from Stanislaus County Line to McCabe Rd	Rehabilitation	Maintenance	2035	$10,438
26C-MT-228	Merced County	Rehabilitation on Williams Ave from SR 165 to Mitchell Rd	Rehabilitation	Maintenance	2035	$4,250
26C-MT-229	Merced County	Rehabilitation on Winton Way from Olive Ave to Atwater City Limits	Rehabilitation	Maintenance	2035	$3,400
26C-MT-230	Merced County	Rehabilitation on Yosemite Ave from Arboleda Dr to Lake Rd	Rehabilitation	Maintenance	2035	$2,559
					Subtotal:	**$1,436,337**

Safety & Operations Project List

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26M-TF-001	Merced	Signal Installation at University and G Street	Install new signal	Intersection Impr.	2027	$3,000

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26A-TF-002	Atwater	Northbound Buhach Dedicated Left Turn Modification	Extend dedicated left turn	Traffic Flow Impr.	2028	$150
26A-TF-003	Atwater	Dedicated High School Entry Lane	At Fruitland Ave just west of Winton Way	Traffic Flow Impr.	2033	$500
26A-TF-004	Atwater	Shaffer Road and Channel Ave Traffic Signal	Construct New Signal	Traffic Flow Impr.	2030	$1,500
26D-TF-005	Dos Palos	Construct Roundabout at Christian Avenue and SR 33	Construct Roundabout and tie into Christian Street	Intersection Impr.	2040	$3,500
26D-TF-006	Dos Palos	Construct Roundabout at Stearman St. and SR 33	Construct Roundabout	Intersection Impr.	2045	$4,000
26S-IT-001	Caltrans	Mer, Sta, and Tuo TMS Replacement: 1L450	In Merced, San Joaquin, and Stanislaus Counties at various locations TMS replacement.	Traffic Managem. Syst.	2028	$13,497
26S-TF-007	Caltrans	SR 152 Intersection Control Improvement: 1Q040	At SR 152/Volta Road, about two miles west of Los Banos	Intersection Impr.	2027	$22,062
26S-TF-008	Caltrans	SR 165 Intersection Control Improvement: 1Q050	At SR 165/Willmott Road in Los Banos	Intersection Impr.	2028	$11,652
26S-SA-001	Caltrans	Midwest Guardrail System Installation: 1Q390	Install guardrail system at six locations in Merced County	Safety	2026	$9,736
26B-TF-009	Los Banos	Mercy Springs (SR 165) and De Anza Intersection Improvements	Intersection Improvement	Intersection Impr.	2026	$3,000
26B-OT-001	Los Banos	ADA Improvements	In "state street" and "presidential street" areas	ADA Impr.	2029	$1,000
26B-SA-002	Los Banos	Bridge Repairs	Bridge repair on West I St, Center Ave, and Pioneer Rd	Safety	2027	$600
26B-TF-010	Los Banos	Mercy Springs (SR 165) and Pioneer Rd Intersection Improvements	Intersection Improvement	Intersection Impr.	2033	$8,525

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26M-TF-011	Merced	Citywide Traffic Signal Synchronization	Citywide Traffic Signal Synchronization	Traffic Flow Impr.	2027	$2,000
26G-TF-012	Gustine	Lucerne/West Ave Roundabout Project	Construct Roundabout at Lucerne, West, and 3rd Aves.	Intersection Impr.	2027	$905
26G-TF-013	Gustine	Construct Roundabout at 5th Street and 4th Avenue	Construct Roundabout	Intersection Impr.	2027	$554
26G-TF-014	Gustine	1st Ave and 5th St Safety Improvements	Construct pedestrian safety mitigations	Intersection Impr.	2038	$400
26G-TF-015	Gustine	Grove Ave and Sullivan Rd Roundabout	Construct Roundabout	Intersection Impr.	2028	$2,500
26G-TF-016	Gustine	Sullivan Rd/SR-33/140 Roundabout	Construct Roundabout	Intersection Impr.	2040	$5,000
26G-TF-017	Gustine	Meredith Ave and Gove Ave Intersection Improvements	Crossing and Safety improvements	Intersection Impr.	2035	$750
26G-TF-018	Gustine	SR-33/140 Intersection Improvements	Intersection and complete street improvements	Intersection Impr.	2049	$3,500
26L-TF-019	Livingston	Briarwood and B Street Roundabout	Construct Roundabout	Intersection Impr.	2035	$3,500
26L-TF-020	Livingston	Hammatt and Campbell Intersection Improvements	Intersection Improvement	Intersection Impr.	2027	$2,520
26L-TF-021	Livingston	Main and Davis Signal and Intersection Redesign	Intersection Improvement	Intersection Impr.	2031	$1,500
26V-SA-003	Various	Various Railroad Grade Separations and Crossing Improvement Projects	Various railroad grade seps. and crossing improvements.	Safety	2035	$75,000
26V-TF-022	Various	Various Operational Improvements	Traffic flow improvement projects	Traffic Flow Impr.	NA	$100,000
26V-IT-002	Various	Various Intelligent Transportation Systems (ITS) Projects	ITS installs, upgrades, and improvements	ITS	NA	$50,000

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26V-SA-004	Various	Various Roadway Safety Improvement Projects	Various roadway safety improvements.	Safety	2040	$75,000
					Subtotal:	**$405,851**

Complete Streets & Active Transportation Project List

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26A-AT-001	Atwater	Downtown Pedestrian Improvements - Phase 3	Includes Oak, Mulberry, Laurel, Kadota, Juniper, Third, Linden, First	Active Transportation	2029	$1,699
26A-AT-002	Atwater	Downtown Pedestrian Improvements - Phase 4	Includes Holly, Hemlock, Grove, Fir, Elm, Eucalyptus, Packers, High	Active Transportation	2027	$3,857
26A-AT-003	Atwater	Bike & Ped Path Along Livingston/Atwater Canal	From Shaffer Road to Giannini Road	Active Transportation	2032	$2,000
26A-AT-004	Atwater	Atwater Canal Class 1 Path	N Buhach Rd to Olive Ave	Active Transportation	2032	$23,130
26A-AT-005	Atwater	Bellevue Rd Class 2 Bike Lane	Atwater Canal to Santa Fe Rd	Active Transportation	2032	$1,050
26A-AT-006	Atwater	Fifth St Class 3 Bikeway	Bellevue Rd to Atwater Blvd	Active Transportation	2030	$210
26A-AT-007	Atwater	First St Class 2 Bike Lane	Bellevue Rd to Atwater Blvd	Active Transportation	2030	$320
26A-AT-008	Atwater	Juniper Ave Class 3 Bikeway	Shaffer Rd to Winton Way	Active Transportation	2030	$220
26A-AT-009	Atwater	Juniper Ave Class 1 Path	Shaffer Rd to Buhach Rd	Active Transportation	2034	$5,070
26A-AT-010	Atwater	Mitchell Ave Class 1 Path	N Winton Way to Atwater Canal Path	Active Transportation	2032	$2,080
26A-AT-011	Atwater	N Winton Way Class 2 Bike Lane	City Limits to Olive Ave	Active Transportation	2030	$550

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26A-AT-012	Atwater	Shaffer Rd Separated Bikeway	Bellevue Rd to Atwater Blvd	Active Transportation	2032	$660
26D-AT-013	Dos Palos	California Ave Class 3 Bikeway	Colony Branch Three Canal to Valeria St	Active Transportation	2030	$100
26D-AT-014	Dos Palos	SR-33 Class 2 Bike Lane	Valerie St to County limits	Active Transportation	2032	$550
26D-AT-015	Dos Palos	Valeria St Class 3 Bikeway	Bryant Ave to Elgin Ave	Active Transportation	2032	$300
26D-AT-016	Dos Palos	Valeria St Class 1 Path	Center Ave to Elgin Ave	Active Transportation	2032	$2,760
26G-AT-017	Gustine	2nd Avenue Class 3 Bikeway	West Avenue to SR 33/140 (4th St)	Active Transportation	2028	$5
26G-AT-018	Gustine	5th Street Class 3 Bikeway	SR 33/140 to North Avenue	Active Transportation	2028	$8
26G-AT-019	Gustine	Laurel Avenue Class 3 Bikeway	North Avenue to Sullivan Road	Active Transportation	2030	$20
26G-AT-020	Gustine	Linden Avenue Class 3 Bikeway	Sullivan Road to SR 33/140	Active Transportation	2030	$5
26G-AT-021	Gustine	West Avenue Class 3 Bikeway	North Avenue to Sullivan Road	Active Transportation	2030	$20
26G-AT-022	Gustine	Shaffer Rd Class 3 Bikeway	North side of Meredith Ave (between elem. school and Railroad Ave); along Railroad Ave (between Meredith Ave and South Ave)	Active Transportation	2027	$650
26G-AT-023	Gustine	Middle School Multiuse Path, Class 1	Connect Middle and Elem. Schools via Grove & Sullivan Route	Active Transportation	2030	$708
26G-AT-024	Gustine	Borelli Ranch Park Multiuse Path, Class 1	Along access road between Fentem Rd and Via del Pettoruto	Active Transportation	2035	$750
26G-AT-025	Gustine	Schmidt Park Pedestrian Tunnel	Extension of MUP under SR33/140 to Overholtzer property	Active Transportation	2040	$1,500

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26G-AT-026	Gustine	Ped Improvements on 3rd, East, and South Aves.	3rd Ave (3rd St to East); East Ave (3rd Ave to South); South Ave (Railroad to East Ave)	Active Transportation	2026	$667
26G-AT-027	Gustine	East Ave Sidewalk Improvements	On east side of East Ave between SR 140 and Carnation	Active Transportation	2035	$1,500
26G-AT-028	Gustine	Lucerne Ave Infill Sidewalk Improvements	Along Lucerne between Jensen Rd and Laurel Ave.	Active Transportation	2027	$753
26V-AT-029	Various	Active Transportation Plan Implementation	Various locations; identified in ATP	Active Transportation	NA	$145,000
26V-AT-030	Various	Sidewalk Infill Improvements	Close gaps and repair ped infrastructure at various locations	Active Transportation	NA	$40,000
26V-AT-031	Various	Bike Lane Improvements	Incorporate bike lane improvements at various locations	Active Transportation	NA	$20,000
26S-CS-001	Caltrans	Hilmar Complete Streets: 1P140	SR 165 from Geer Rd to August Ave in Hilmar	Active Transportation	2028	$20,604
26C-AT-032	Merced County	Santa Fe Dr Class 1 Path	City of Atwater to City of Merced	Active Transportation	2035	$19,230
26C-AT-033	Merced County	In Delhi: 5th St Class 1 Path	El Capitan Way to Sierra St	Active Transportation	2035	$2,420
26C-AT-034	Merced County	In Delhi: El Capitan Way Class 2 Bike Lane	Palm St to Stephens St	Active Transportation	2032	$180
26C-AT-035	Merced County	In Delhi: Merced Ave Sidewalk Installation	August Ave to Schendel Ave	Active Transportation	2032	$260
26C-AT-036	Merced County	In Delhi: Oslo Rd Class 1 Path	Letteau Ave to Merced Ave	Active Transportation	2032	$3,170
26C-AT-037	Merced County	In Delhi: Schendel Ave Separated Bikeway	Stephens St to Merced Ave	Active Transportation	2032	$560
26C-AT-038	Merced County	In Delhi: Stephens St Class 2 Bike Lane	Johnson St to El Capitan Way	Active Transportation	2030	$160

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26C-AT-039	Merced County	In Delhi: Vincent Rd Class 3 Bikeway	El Capitan Way to Shanks Rd	Active Transportation	2030	$70
26C-AT-040	Merced County	In Le Grand: Brice St Class 3 Bikeway	Brice St to Cook St	Active Transportation	2032	$30
26C-AT-041	Merced County	In Le Grand: Jefferson St Class 1 Path	Washington St to Le Grand Rd	Active Transportation	2032	$750
26C-AT-042	Merced County	In Le Grand: S Cook St Class 3 Bikeway	E Brice St to Le Grand Rd	Active Transportation	2030	$30
26C-AT-043	Merced County	In Le Grand: S McKee St Class 1 Path	to Jefferson St	Active Transportation	2030	$180
26C-AT-044	Merced County	In Planada: Plainsburg Rd Separated Bikeway	Santa Fe Dr to Gerard Ave	Active Transportation	2034	$410
26C-AT-045	Merced County	In Santa Nella: SR-33 Santa Nella Blvd Sidewalk Project	I-5 to W Centinella Ave	Active Transportation	2032	$780
26C-AT-046	Merced County	In South Dos Palos: 6th St Class 3 Bikeway	K St to P St	Active Transportation	2032	$80
26C-AT-047	Merced County	In South Dos Palos: 7th St Class 3 Bikeway	Santa Fe Grade to L St	Active Transportation	2030	$20
26C-AT-048	Merced County	In South Dos Palos: 7th St Class 1 Path	Santa Fe Grade to N St	Active Transportation	2035	$430
26C-AT-049	Merced County	In South Dos Palos: Santa Fe Grade Class 3 Bikeway	Adobe St to 7th St	Active Transportation	2032	$80
26C-AT-050	Merced County	In Winton: Winton Way Separated Bikeway	Atwater City Limits to Olive Ave	Active Transportation	2034	$970
26C-AT-051	Merced County	SR 152 Pacheco Blvd. Regional Bike Path	Badger Flat to Merced College	Active Transportation	2035	$5,000
26M-AT-052	Merced	26th St Class 3 Bikeway	Glen Ave to O St	Active Transportation	2030	$270
26M-AT-053	Merced	Bear Creek Trail S Class 1 Path	McKee Rd to W 25th St	Active Transportation	2032	$14,260
26M-AT-054	Merced	E 21st St Class 2 Bike Lane	Yosemite Pkwy to Glen Ave	Active Transportation	2030	$180

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26M-AT-055	Merced	Melody Lane Sidewalks	Install sidewalks along Melody Lane from G Street to approx. Arch Rock Street	Active Transportation	2026	$380
26M-AT-056	Merced	Yosemite and Community College Path	On Community College Drive from M Street to G Street and on the north side of Yosemite Avenue.	Active Transportation	2027	$1,366
26M-AT-057	Merced	Sidewalks on West, Fig, and Home Avenues	Install sidewalks along east side of West Ave from 2nd St to 1st St, the east side of West Ave from Childs Ave to Riggs Ave, both sides of Fig Ave from T St to S St, and both sides of Home Ave from West Ave to S St	Active Transportation	2028	$900
26M-AT-058	Merced	E Childs Ave Separated Bikeway	Campus Pkwy to Delong St	Active Transportation	2034	$1,190
26M-AT-059	Merced	E Main St Class 2 Bike Lane	Glen Ave to G St	Active Transportation	2030	$240
26M-AT-060	Merced	G St Separated Bikeway	Childs Ave to Bellevue Rd	Active Transportation	2034	$2,510
26M-CS-002	Merced	Canal & Childs Sidewalks and Street Improvements		Complete Streets	2028	$3,000
26M-AT-061	Merced	Glen Ave Class 2 Bike Lane	Bear Creek Trail to E Main St	Active Transportation	2030	$380
26M-AT-062	Merced	M St Separated Bikeway	Childs Ave to Bellevue Rd	Active Transportation	2032	$2,560
26M-AT-063	Merced	Motel Dr Separated Bikeway	Almond Ave to Glen Ave	Active Transportation	2030	$200
26M-AT-064	Merced	O St Separated Bikeway	26th St to 8th St	Active Transportation	2034	$680
26M-AT-065	Merced	Olive Ave Separated Bikeway	Campus Pkwy to R St	Active Transportation	2035	$2,200

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26M-AT-066	Merced	R St Separated Bikeway	W Childs Ave to W Yosemite Ave	Active Transportation	2034	$1,570
26M-AT-067	Merced	Rascal Bike Class 1 Path	McKee Rd to Snelling Hwy	Active Transportation	2035	$20,150
26M-AT-068	Merced	S Parsons Ave Separated Bikeway	S Coffee St to Yosemite Pkwy	Active Transportation	2034	$950
26M-AT-069	Merced	V St Class 2 Bike Lane	W Main St to SR-140	Active Transportation	2032	$140
26M-AT-070	Merced	W 11th St Class 3 Bikeway	D St to X St	Active Transportation	2032	$370
26M-AT-071	Merced	W 13th St Class 3 Bikeway	B St to R St	Active Transportation	2032	$300
26M-AT-072	Merced	W 16th St Class 2 Bike Lane	G St to V St	Active Transportation	2032	$360
26M-AT-073	Merced	W 18th St Class 2 Bike Lane	G St to V St	Active Transportation	2032	$570
26M-AT-074	Merced	W 21st St Class 3 Bikeway	Glen Ave to R St	Active Transportation	2032	$320
26M-AT-075	Merced	W 8th St Class 3 Bikeway	MLK Jr Way to West Ave	Active Transportation	2032	$250
26M-AT-076	Merced	W Childs Ave Class 2 Bike Lane	De Long St to N West Ave	Active Transportation	2032	$880
26M-AT-077	Merced	M Street Sidewalk Rehabilitation	19th Street to 21st Street	Active Transportation	2026	$700
26M-AT-078	Merced	W Main St Class 3 Bikeway	G St to O St	Active Transportation	2032	$150
26M-AT-079	Merced	W Yosemite Ave Class 2 Bike Lane	G St to San Augustine Ave	Active Transportation	2032	$690
26M-AT-080	Merced	West Ave Class 2 Bike Lane	W Childs Ave to W 11th St	Active Transportation	2032	$400
26B-CS-003	Los Banos	Pioneer Road Safety Project	Complete Streets Improvements from East of Creek Road to Gus Vilalta Dr.	Complete Streets	2036	$43,216

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26B-AT-081	Los Banos	Canal Farm Lane Improvements	Sidewalk Improvements on Canal Farm Ln from Mercey Springs (SR 165) to end	Active Transportation	2028	$2,000
26B-AT-082	Los Banos	Rail Trail Rehabilitation	From Ward Rd. to Place Rd.; and SR 165 to Second St	Active Transportation	2028	$100
26B-CS-004	Los Banos	Downtown Complete Streets	Street and sidewalk rehabilitation, new curbs and finished street surface with storm drains	Complete Streets	2026	$6,000
26B-AT-083	Los Banos	7th St Separated Bikeway	Madison Ave to Willmott Ave	Active Transportation	2034	$590
26B-AT-084	Los Banos	B St Separated Bikeway	Ward Rd to 7th St	Active Transportation	2034	$660
26B-AT-085	Los Banos	H St Separated Bikeway	Pachecho Blvd to Ingomar Grade	Active Transportation	2035	$1,230
26B-AT-086	Los Banos	I St Separated Bikeway	4th St to Cardoza Rd	Active Transportation	2034	$800
26B-AT-087	Los Banos	Mercey Springs Rd Class 1 Path	Del Rio Dr to Pacheco Blvd	Active Transportation	2035	$10,360
26B-AT-088	Los Banos	Overland Ave Separated Bikeway	Place Rd to Johnson Rd	Active Transportation	2034	$930
26B-AT-089	Los Banos	Pacheco Blvd Separated Bikeway	Ward Rd to Merced College	Active Transportation	2032	$2,050
26B-AT-090	Los Banos	Rail Trail Class 1 Path	Ward St to 2nd St	Active Transportation	2035	$10,650
26B-AT-091	Los Banos	San Luis St Separated Bikeway	Pacheco Blvd to Mercey Springs Rd	Active Transportation	2034	$930
26B-AT-092	Los Banos	Ward Rd Separated Bikeway	Pacheco Blvd to Snow Goose Dr	Active Transportation	2034	$330
26B-AT-093	Los Banos	Willmott Ave Separated Bikeway	Johnson Rd to Las Palmas St	Active Transportation	2034	$880

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26B-AT-094	Los Banos	Canal Trail Extension from W I St to Badger Flat Rd	Multi-use Trail from West I St to Badger Flat Rd with canal crossing on SR-152	Active Transportation	2030	$10,000
26B-AT-095	Los Banos	Canal Trail Rehabilitation	From Pioneer Rd. to West I Street	Active Transportation	2027	$100
26B-CS-005	Los Banos	Downtown Master Plan Complete Street Improvements Phase 1	On 4th, 5th, and 6th streets between H and Pacheco (SR 152)	Complete Streets	2028	$49,000
26L-AT-096	Livingston	Celia Dr Class 3 Bikeway	N Main St to Walnut Ave	Active Transportation	2032	$60
26L-AT-097	Livingston	F St Class 3 Bikeway	Hammatt Ave to Prusso St	Active Transportation	2032	$90
26L-AT-098	Livingston	Hammatt Ave Class 3 Bikeway	Peach Ave to Park St	Active Transportation	2032	$30
26L-AT-099	Livingston	Main St Class 2 Bike Lane	Peach Ave to D St	Active Transportation	2034	$170
26L-AT-100	Livingston	Main St Class 2 Bike Lane	Court St to Olive Ave	Active Transportation	2034	$300
26L-AT-101	Livingston	Park St Class 3 Bikeway	Hammatt Ave to Main St	Active Transportation	2032	$110
26L-AT-102	Livingston	Peach Ave Class 2 Bike Lane	Dwight Way to Main St	Active Transportation	2034	$270
26L-AT-103	Livingston	Peach Ave Class 3 Bikeway	Main St to Robin Ave	Active Transportation	2035	$130
26L-AT-104	Livingston	Walnut Ave Class 2 Bike Lane	365 ft east of Sycamore St to Stefani Ave	Active Transportation	2035	$420
					Subtotal:	**$511,078**

Capacity Increasing Project List

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26A-CP-001	Atwater	Buhach Road Widening at Livingston Canal	Add second NB lane approx. 1,000' south of Liv. Canal	Capacity Increasing	2030	$1,250
26B-CP-002	Los Banos	Ortigalita Road Extension and Intersection Improvement	Intersection Improvement at Ortigalita Rd and SR 152, and Extension of Ortigalita Rd from SR 152 to Badger Flat Rd	Capacity Increasing	2027	$7,000
26B-CP-003	Los Banos	Mercy Springs (SR 165) and Radcliff Dr. Intersection Improvements	Widening and intersection improvements	Capacity Increasing	2027	$4,000
26B-CP-004	Los Banos	Mercy Springs (SR 165) and Vineyard/Dove Intersection Improvements	Widening and intersection improvements	Capacity Increasing	2026	$2,500
26B-CP-005	Los Banos	Mercy Springs (SR 165) and Henry Miller Rd. Intersection Improvements	Widening and intersection improvements	Capacity Increasing	2028	$4,000
26B-CP-006	Los Banos	Mercy Springs (SR 165) and Willmott Rd. Intersection Improvements	Widening and intersection improvements	Capacity Increasing	2029	$2,500
26B-CP-007	Los Banos	East of Creek Road	Construct new two-lane roadway from SR 152 just east of Los Banos Creek, to 0.5 mi south of SR 152.	Capacity Increasing	2030	$10,945
26B-CP-008	Los Banos	East of Creek Road Extension	Construct new two-lane roadway from 0.5 mi south of SR 152 just east of Los Banos Creek, to Pioneer Road	Capacity Increasing	2030	$15,098
26B-CP-009	Los Banos	Ward Road Safety Project	Rehab/reconstruct Ward Road from SR 152 to Pioneer Rd Extension Alignment	Capacity Increasing	2039	$21,937

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26B-CP-010	Los Banos	Pioneer Road Extension	Construct new roadway, extending Pioneer Rd. from SR 165 to Ward Rd.	Capacity Increasing	2042	$32,847
26B-CP-011	Los Banos	Pioneer Road Bridge over Main Canal	Widen from 2 to 4 lanes	Capacity Increasing	2049	$24,466
26B-CP-012	Los Banos	H St, Badger Flat Rd, & Overland Widening	Widening on H St; Badger Flat- SR 152 to Ingomar Grade; and Overland Ave from Nantes Ave to H St	Capacity Increasing	2027	$25,000
26M-CP-013	Merced	Mission Ave Widening Segment 1	Widen 2 to 4 lanes from Henry St to G St	Capacity Increasing	2035	$30,000
26M-CP-014	Merced	Mission Ave Realignment	G St to SR-59, realign and widen to 4 lanes	Capacity Increasing	2035	$7,000
26M-CP-015	Merced	SR-59 Black Rascal Bridges: Replacement & Widening	Replace 2 bridges and widen from 2 to 4 lanes	Capacity Increasing	2029	$16,150
26M-CP-016	Merced	SR-59 Merced Widening Phase 1	Widen 2 to 4 lanes from 16th St to Olive Ave/Santa Fe Dr	Capacity Increasing	2029	$20,000
26M-CP-017	Merced	SR-59 Merced Widening Phase 2	Widen 2 to 4 lanes from Black Rascal Creek Bridges from Olive Ave/Santa Fe Dr. to Yosemite Ave	Capacity Increasing	2040	$19,000
26M-CP-018	Merced	SR-59 Merced Widening Phase 3	Widen 2 to 4 lanes from Yosemite Ave to Cardella Rd	Capacity Increasing	2045	$35,000
26M-CP-019	Merced	SR-59 Merced Widening Phase 4	Widen 2 to 4 lanes from Cardella Rd to Bellevue Rd - Env. Only	Environmental Only	2040	$8,000
26M-CP-020	Merced	Bellevue Rd Widening	Widen from 2 to 4 lanes from SR-59 to Lake Rd	Capacity Increasing	2042	$41,000
26M-CP-021	Merced	G Street Widening	Widening from Mercy Ave. to Merrill Pl.	Capacity Increasing	2032	$3,000

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26S-CP-022	Caltrans	Merced SR-99 Managed Lanes Phase A	Construct one Managed Lane in each direction; between 0.90 miles north of Mission Avenue and 0.72 miles south of Buhach Rd	Capacity Increasing	2033	$460,000
26S-CP-023	Caltrans	Atwater SR-99 Managed Lanes Phase A	Construct one Managed Lane in each direction; postmiles 20.34 to 24.08	Capacity Increasing	2038	$125,000
26C-CP-024	Merced County	Campus Parkway Phase 4	Four-lane expressway from Yosemite Avenue to Cardella Rd. Alignment	Capacity Increasing	2028	$13,000
26M-CP-025	Merced	Campus Parkway Phase 5	Four-lane expressway from Cardella Rd Alignment to U.C. Merced	Capacity Increasing	2028	$5,000
26C-CP-026	Merced County	Atwater Merced Expressway (AME) Phase 1B & 2	Four-lane expressway from Green Sands to Bellevue Road	Capacity Increasing	2031	$100,000
26C-CP-027	Merced County	Atwater Merced Expressway (AME) Phase 3	Four-lane expressway south from Phase 1A Interchange to SR 140 - Env. Only	Environmental Only	2030	$8,000
					Subtotal:	**$1,041,693**

Public Transportation Project List

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26T-BO-001	TJPAMC	Fixed Route Operations & Maintenance	Fixed Route Bus Operations Countywide; some extensions into Stan. Co.	Bus Transit	NA	$278,870
26T-BO-002	TJPAMC	Fixed Route Expansion	Fixed Route Bus Operations Countywide; some extensions into Stan. Co.	Bus Transit	NA	$162,670
26Y-BO-003	YARTS	Fixed Route Operations & Maintenance	YARTS Operations in YARTS Service Area	Bus Transit	NA	$132,210
26T-BO-004	TJPAMC	Micro Bus On-demand Operations & Maintenance	Micro Bus Operations Countywide; some extensions into Stan. Co.	Bus Transit	NA	$144,240
26T-BO-005	TJPAMC	Paratransit Operations & Maintenance	Paratransit Operations Countywide; some extensions into Stan. Co.	Bus Transit	NA	$120,200
26T-BC-001	TJPAMC	Concourse Facility Redesign	Redesign Concourse at Merced Transpo	Bus Transit	2026	$200
26T-BC-002	TJPAMC	Merced Transpo Redesign and Upgrades	Redesign and Upgrade Merced Transpo	Bus Transit	2028	$3,500
26T-BC-003	TJPAMC	Eastside Battery-Electric Bus Charging Infrastructure	Install and maintain BEB Charging Infrastructure	Bus Transit	2026	$15,000
26T-BC-004	TJPAMC	Westside Operations and Maintenance Facility	Construct Operations and Maintenance Facility	Bus Transit	2028	$8,000
26T/Y-BC-005	TJPAMC/YARTS	Hydrogen Fueling Station	Construct Hydrogen Fueling Station - Eastside	Bus Transit	2027	$10,000
26Y-BC-006	YARTS	Fleet Replacement	Fleet Replacement and Expansion	Bus Transit	2049	$72,000

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26T-BC-007	TJPAMC	Fleet Replacement and Expansion	Fleet Replacement and Expansion	Bus Transit	NA	$187,160
26T-BC-008	TJPAMC	Hydrogen Buses	Hydrogen Bus Purchases	Bus Transit	2041	$6,400
26T-BC-009	TJPAMC	Bus Stop Improvements	Bus stop improvements Countywide	Bus Transit	NA	$10,000
26T-BC-010	TJPAMC	Technology Improvements	Various technology improvements (fleet & facilities)	Bus Transit	NA	$15,000
26T-BO-007	TJPAMC	ACE Bus Bridge Program	Fixed-route service from Merced County to Turlock and Ceres	Bus Transit	2028	$1,200
26T-BO-008	TJPAMC	Measure V Free Ride Program	Free rides for specific Merced County riders	Bus Transit	NA	$10,700
26T-NI-001	TJPAMC	Outreach and Marketing	Outreach and Marketing	Bus Transit	NA	$2,400
26Y-NI-002	YARTS	Outreach and Marketing	Outreach and Marketing	Bus Transit	NA	$2,040
26T-BO-009	TJPAMC	Amtrak thru-way bus service - Merced to Gilroy Pilot	Bus Service from Merced to Gilroy	Bus Transit	NA	$1,500
26L-BC-011	Livingston	Livingston Transit Center	Construct Transit Center on Main Street, Along Union Pacific Right of Way	Bus Transit	2027	$2,900
26A-BC-012	Atwater	Atwater Transit Center	Construct Transit Center on Atwater Blvd, Along Union Pacific Right of Way	Bus Transit	2033	$7,000
26T-BC-013	TJPAMC	New Transit Centers and Transfer Stations Countywide	Construct transit facilities for riders countywide	Bus Transit	NA	$33,684
					Subtotal:	**$1,226,874**

Non-Infrastructure Project List

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26U-NI-003	UC Merced	Merced Campus Connections	Develop SAP to connect UC Merced campus to Merced & Merced College; conduct temp. demonstration activities such as multiuse path.	Non-Infrastructure (Planning)	2026	$4,036
26U-NI-004	UC Merced	Merced Campus Connections: Phase II	Further study and remedy identified concern around pick up and drop off; including a quick-build demonstration project.	Non-Infrastructure (Planning)	2028	$5,220
26X-TD-001	MCAG	Transportation Demand Management (TDM), Rideshare, and Vanpool Programs	Support TDM Programs	Non-Infrastructure (TDM)	NA	$8,000
					Subtotal:	**$17,256**

Other/Multipurpose Project List

Project ID	Agency	Project Title	Project Description	Project Type (Primary)	Year/Open to Traffic	Total Cost in 1,000s (Year of Expend.)
26R-ZE-001	SJVAPCD	San Joaquin Valley I-5 Electric Freight Corridor (Valley EFC) Project	On SR 140 approx. 0.5 miles east of I-5. Install 45 passenger vehicle DCFCs, 40 DCFCs for MHDEVs, and 8 MCS chargers.	EV Charging	2026	$41,758
26V-ZE-002	Various	EV Infrastructure Countywide	Install infrastructure and charging equipment countywide	EV Charging	2049	$23,477
26B-ZE-003	Los Banos	DC Fast Charger Installation	Install 2 DC Fast Chargers; 1 at City Hall, 1 at Community Center	EV Charging	2030	$12
26M-MU-001	Merced	R Street Improvements	Reconstruction, turn lane addition and ATP improvements between Olive Ave. and Northwood Dr.	Multipurpose	2026	$3,500
					Subtotal:	**$68,747**
					Total	**$4,707,836**

APPENDIX C

NOISE ASSESSMENT WORKSHEETS

REPORT:	**Results: Sound Levels - No Barrier Objects**
TNM VERSION	3.2.8741.34338
CALCULATED WITH:	TNM v3.2.8741.34338
CASE:	Existing Conditions
UNITS:	English
DEFAULT GROUND TYPE:	HardSoil
ATMOSPHERICS:	68°F, 50%
PAVEMENT TYPE(S) USED:	Average

REPORT DATE:	9 June 2026
CALCULATION DATE:	6/9/2026 12:40:07 AM
ORGANIZATION:	MCAG
ANALYSIS BY:	
PROJECT/CONTRACT	2026 RTP/SCS

Average pavement type shall be used unless a state highway agency substantiates the use of a different type with approval FHWA.

Receiver				Modeled Traffic Noise Levels				
				LAeq		Increase over Existing		
Name	No.	Nb. R.R.	Existing LAeq	Calc.	Absolute Criterion	Calc.	Relative Criterion	Type of Impact
			dBA	dBA	dBA	dBA	dBA	
Receiver-1	1	1	---	79.3	0.0	---	---	Sound Level

REPORT:	**Results: Sound Levels - No Barrier Objects**		
TNM VERSION	3.2.8741.34338	REPORT DATE:	9 June 2026
CALCULATED WITH:	TNM v3.2.8741.34338	CALCULATION DATE:	6/9/2026 12:47:29 AM
CASE:	2023 Base Year Conditions	ORGANIZATION:	MCAG
UNITS:	English	ANALYSIS BY:	
DEFAULT GROUND TYPE:	HardSoil	PROJECT/CONTRACT	2026 RTP/SCS
ATMOSPHERICS:	68°F, 50%	Average pavement type shall be used unless a state highway agency substantiates the use of a different type with approval FHWA.	
PAVEMENT TYPE(S) USED:	Average		

Receiver				Modeled Traffic Noise Levels				
				LAeq		Increase over Existing		
Name	No.	Nb. R.R.	Existing LAeq	Calc.	Absolute Criterion	Calc.	Relative Criterion	Type of Impact
			dBA	dBA	dBA	dBA	dBA	
Receiver-1	1	1	---	75.9	0.0	---	---	Sound Level

REPORT:	**Results: Sound Levels - No Barrier Objects**		
TNM VERSION	3.2.8741.34338	REPORT DATE:	9 June 2026
CALCULATED WITH:	TNM v3.2.8741.34338	CALCULATION DATE:	6/9/2026 12:54:27 AM
CASE:	2049 Project Conditions	ORGANIZATION:	MCAG
UNITS:	English	ANALYSIS BY:	
DEFAULT GROUND TYPE:	HardSoil	PROJECT/CONTRACT	2026 RTP/SCS
ATMOSPHERICS:	68°F, 50%	Average pavement type shall be used unless a state highway agency substantiates the use of a different type with approval FHWA.	
PAVEMENT TYPE(S) USED:	Average		

Receiver				Modeled Traffic Noise Levels				
				LAeq		Increase over Existing		
Name	No.	Nb. R.R.	Existing LAeq	Calc.	Absolute Criterion	Calc.	Relative Criterion	Type of Impact
			dBA	dBA	dBA	dBA	dBA	
Receiver-1	1	1	---	78.4	0.0	---	---	Sound Level