



# 2022 Regional Transportation Plan/ Sustainable Communities Strategy

Draft Program Environmental Impact Report  
SCH# 20211100331

*prepared by*

**Kings County Association of Governments**

339 West D Street, Suite B

Lemoore, California 93245

Contact: Terri King, Executive Director

*prepared with the assistance of*

**Rincon Consultants, Inc.**

7080 North Whitney Avenue, Suite 101

Fresno, California 93720

**July 2022**



**RINCON CONSULTANTS, INC.**

Environmental Scientists | Planners | Engineers

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# Executive Summary

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This document is an Environmental Impact Report (EIR) analyzing the environmental effects of the proposed 2022 Regional Transportation Plan and Sustainable Communities Strategy (proposed 2022 RTP/SCS). This section summarizes the characteristics of the proposed project, alternatives to the proposed project, and the environmental impacts and mitigation measures associated with the proposed project.

## Project Synopsis

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### Project Description

This EIR has been prepared to examine the potential environmental effects of the proposed 2022 Regional Transportation Plan and Sustainable Communities Strategy (hereafter referred to as the proposed 2022 RTP/SCS). The following is a summary of the full project description, which can be found in Chapter 2, *Project Description*.

The proposed 2022 RTP/SCS covers the entire area of Kings County and includes all incorporated cities and unincorporated communities contained therein. Refer to Figure 2-1 in Chapter 2, *Project Description*, for a map of the project location. Capital improvement projects identified in the proposed 2022 RTP/SCS are located on State highways, county roads, and locally owned streets, as well as on airport property, transit district property, and public utility lands.

### *Project Objectives*

The purpose of the 2022 RTP/SCS is to coordinate and facilitate the programming and budgeting of all transportation facilities and services within Kings County through the year 2046 and demonstrate how the region will integrate transportation and land use planning to meet the GHG reduction targets established by the California Air Resources Board (CARB) and in accordance with other State and Federal regulations. It identifies reasonably available sources of funding for transportation. The 2022 RTP/SCS is a plan for improving the quality of life for residents of Kings County by planning for wise transportation investments and informed land use choices. The RTP/SCS aims to achieve variety and efficiency in travel choices, as well as a safe, secure, and efficient transportation system that would provide improved mobility and access. It includes strategies to generally improve air quality, improve health, and reduce greenhouse gas emissions consistent with SB 375 requirements. The plan achieves its overall objectives by combining transportation investment and policies with integrated land use strategies that reduce per capita vehicle miles traveled (VMT) and emissions.

The project's overall goal is to develop a transportation system that encourages and promotes the safe and efficient development, management, and operation of surface transportation systems to equitably and safely serve the mobility and accessibility needs of people and freight (including

meeting the Americans with Disabilities Act requirements, accessible pedestrian walkways, and bicycle transportation facilities) and foster economic growth and development, while minimizing transportation-related fuel consumption, air pollution, and greenhouse gas emissions.

Project policies and objectives include:

- Using Transportation System Management (TSM) evaluations, consider those alternative solutions that lessen environmental problems, yet serve transportation needs.
- Seek to mitigate unavoidable adverse impacts associated with selected alternatives.
- Use environmental documents such as Initial Studies and EIRs as decision-making tools.
- Coordinate transportation control measures with the San Joaquin Valley Air Pollution Control District and the latest air quality attainment plan for the San Joaquin Valley.
- Consult with lead agencies on projects having environmental effects, of statewide, regional, or areawide significance on transportation facilities.
- Maintain modeling capability that will respond to state and federal reporting requirements and the need for accurately projecting travel demand in future years.
- Conduct meaningful consultation with California Native American tribes for the protection of cultural resources in accordance with AB 52.
- Maintain and rehabilitate the regional system; reconstruct deteriorated road sections.
- Provide safety improvements to reduce the number, severity, and probability of fatal and serious injury vehicle collisions.
- Undertake new construction projects to upgrade and complete the regional system, and to close gaps in local and state highway systems.
- Implement operational improvements (such as road widening, relief of parking congestion, traffic signals, passing lanes, and turn lanes) to maximize service and efficiency.
- Carry out landscaping and maintenance projects to help make highways compatible with their surroundings.
- Enforce local ordinances regulating oversize truck terminal access.
- Work with Caltrans and local agencies to obtain right-of-way dedications at designated future interchanges and along mainline portions of state highways within the regional transportation system.
- Petition the California State Legislature and the California Transportation Commission to adopt equitable laws and policies for apportioning fuel taxes and funding highway projects. Ensure that Kings County receives its fair share of available transportation dollars.
- Work more closely with other Regional Transportation Planning Agencies in the area to foster coordinated highway facilities planning.
- Preserve an effective and convenient intercity public transportation system of regularly scheduled bus and rail services.
- Provide public transit services for those needs defined as "Unmet Transit Needs" which are "Reasonable to Meet".
- Support the efforts of the trucking and rail industries to transport commodities safely and efficiently.
- Improve routes of regional significance to promote the safe operation of vehicular traffic, especially during high collision probability times such as times of heavy winter fog, night, etc.



- A fully functional and integrated air transportation and airport system that is complementary to the regional transportation system.
- Provide a well-developed, safe, and convenient, intermodally-connected system of bikeways complete with support facilities.
- Ensure that future development supports and facilitates the expansion, improvement, and maintenance of the bikeway system.
- Provide on-going bicycle safety education and information programs.
- Implement bikeways that will connect major employers, educational facilities, and recreational areas.
- Encourage the use of bicycle and pedestrian modes of transportation to enhance air quality and improve human health.
- Shorten the travel time required to move people and goods on the existing system.
- Reduce air quality impacts caused by the existing system.
- Reduce the amount of energy consumed by users of the existing system.

### *Project Characteristics*

The most recent RTP/SCS was adopted by KCAG in 2018 (2018 RTP/SCS). This 2022 update is a technical update which reflects changes in planning assumptions, planning lists, legislative requirements, demographics, local land use policies, and resource constraints while preserving the foundational elements of the 2018 RTP/SCS.

The 2022 RTP/SCS plans how the Kings County Region will meet its transportation needs for the approximately 25-year period from 2022 to 2046, considering existing and projected future land use patterns as well as forecast population and job growth. Continued growth in the region would occur independently with or without implementation of the RTP/SCS. Therefore, the RTP/SCS is intended to accommodate the inevitable growth of the region and distribute growth. The RTP/SCS would not directly increase population; rather, the RTP/SCS intends to provide framework on how to plan for expected growth. The 2022 RTP/SCS plans for approximately \$724 million in revenues expected to be available to the region from all transportation funding sources over the course of the planning period. It identifies and prioritizes expenditures of this anticipated funding for transportation projects of all transportation modes: highways, streets and roads, transit, rail, bicycle, pedestrian, as well as transportation demand management measures and intelligent transportation systems.

The 2022 RTP/SCS is based on a preferred land use and transportation scenario (Scenario A also referred as the “Current Trend” scenario)<sup>1</sup> which defines a pattern of future growth and transportation system investment for the region emphasizing a transit-oriented development and compact infill approach to land use and housing. Population and job growth is allocated principally within existing urban areas near public transit. The preferred land use scenario reflects the planned general plan growth detailed in the local agency's general plans. These growth patterns are consistent with growth historically seen in Kings County, with most residential and non-residential growth occurring within the incorporated cities of Hanford, Lemoore, Corcoran, and Avenal. Although Kings County is relatively rural, mixed-use infill and higher-density development are already seen in part of the urbanized areas. In addition, the mixed-use and infill development projects are encouraged in all the local agency general plans – most recently in Hanford general plan update. This includes a mix of infill development in downtown areas with some development in new

growth areas but still within urban growth lines. Over 98 percent of countywide housing growth is projected to occur within incorporated cities, with less than 2 percent growth in unincorporated communities. Likewise, 95 percent of employment growth under the Current Trend scenario is in the cities, while 5 percent is in existing unincorporated communities.

The housing type distribution under Scenario A is approximately 77% detached single family homes over multi-family housing which constitute 23% of residential land use. The distribution of new residential development reflects a 83/17 percent split of single-family housing relative to new multi-family housing. Transportation investments in Scenario A prioritize roadway rehabilitation and roadway system preservation. No new roadway capacity of state highway facilities is assumed. Transportation investment in Scenario A is dedicated to roadway maintenance with increased funding for alternative transportation improvements such as transit and bicycle/pedestrian improvements. Scenario A also includes the following:

- Current Trend Land Use (consistent with local agency General Plans)
- Tier I CIP list Investment Portfolio – roadway maintenance, KART service enhancements and fleet replacement and maintenance, construction of bicycle and pedestrian facilities.
- Medium Investment – encourage the development of infrastructure for and the implementation of alternative fuel vehicles.
- Low Investment
  - Mobility improvements: transit service expansion and ridesharing
  - Operational improvements that include installation of roundabouts, signal synchronization, and ITS/TSM strategies
  - Land use: encourage mixed-use, high-density and infill new development in existing communities

## **2022 RTP/SCS FRAMEWORK**

There are four required elements of the RTP (Policy Element, Sustainable Communities Strategy, Financial Element, and Action Element); all of which must be internally consistent. The goals and strategies in the policy element reflect regional priorities for mobility, which are supported by the assumptions in the SCS, and are further reflected in the funding allocations in the financial element.

A scenario represents the potential future interaction of these elements. Each land use scenario has been evaluated through a series of metrics to inform policymakers and the public how the scenario meets regional goals and strategies for improvement over current conditions. Each element's relationship to scenario development is discussed in the subheadings below.

## **DEVELOPMENT PATTERNS AND DEMOGRAPHIC PROJECTIONS**

- Location of new housing
- Location of new job centers
- Infill within downtowns and mixed-use neighborhoods versus converted farmland or open space;

## **TRANSIT/TRANSPORTATION INVESTMENTS**

- Spending levels on active transportation investments
- Transit service improvements

- Vanpool formation
- Passenger rail enhancements
- Electromobility investments

Broadband expansions to facilitate telecommuting, tele-shop and tele-health opportunities for disadvantaged communities in Kings County.

The proposed 2022 RTP/SCS, also referred to as Kings Regional Vision, is organized into the following chapters:

*Chapter 1: Introduction.* Includes an introduction to the RTP, purpose of the plan, and relevant background information.

*Chapter 2: Overview of Transportation Planning and Programming.* This chapter seeks to integrate a wide range of social and economic matters that figure into KCAG's transportation planning process.

*Chapter 3: The Policy Element.* Includes the objectives and policies needed to help meet the goal of the RTP: program, environmental, public participation, regional highway system, goods movement, public transportation, intercity rail and bus, aviation, active transportation, transportation systems, and transportation technology.

*Chapter 4: The Regional Highway System.* Includes an analysis of the current conditions, assumptions, and inventories of the regional highway system.

*Chapter 5: Goods Movement.* Includes assumptions, inventories, issues, and significant studies to address efficient goods movement throughout the region.

*Chapter 6: Public Transportation.* Provides an overview of the existing private and public agencies providing transportation services in the region. Among those providers mentioned in this chapter are Kings Area Regional Transit (KART), Corcoran Area Transit, Amtrak San Joaquin, high speed and commuter rail service, in addition to a discussion of vanpool ridesharing and programs.

*Chapter 7: Aviation.* Includes a discussion of the role of aircrafts to the economy of communities and businesses in Kings County, in addition to an inventory of registered aircrafts and public use and private airstrips in the region.

*Chapter 8: Active Transportation.* Provides an overview of the existing, current, and planned bike and pedestrian efforts to provide public benefit in Kings County. As well as discussion of the future impacts of state and federal opportunities to provide long-term funding for a variety of active transportation projects.

*Chapter 9: Transportation Demand Management.* This section describes the Transportation Demand Management (TDM) and Transportation System Management (TSM) implemented by King County to promote strategies and adaptations that ensure residents can get the most out of its existing roadway system. This chapter also includes descriptions of the role of intelligent transportation systems (ITS) which use broadband or mobile communications technology in transportation.

*Chapter 10: Air Quality.* Includes a description of the current planning efforts and strategies to improve air quality in the region in an effort to meet established air quality standards.

*Chapter 11: Revenue Forecast.* Includes a revenue projection for the forecast horizon of the RTP/SCS. Includes local, state, and federal inflows and some description of anticipated operating expenditures.

*Chapter 12: Regional Transportation Needs.* This chapter details the financially-constrained list of improvements planned across all modes in Kings County. This chapter shows capital projects and operational costs are reflected across modes.

*Chapter 13: Sustainable Communities Strategy.* Includes a description of the public outreach component and the required SCS chapter, including the investment analysis, plan adjustment, and off-model reduction calculations and other required modeling information

Of these thirteen chapters of the 2022 RTP/SCS, the Planning Process, Investment Plan, and Transportation Performance Policies (included in Chapters 3, 11, and 13) are the three elements that include provisions with the potential to create physical changes to the environment and will be the primary focus for analysis in this EIR.

## **POLICY ELEMENT**

The Policy Element of the 2022 RTP/SCS has been broadened to include both a regional policy section and a local policy section. The regional policy section includes specific policies for various topical issues and transportation modes (highways and roadways, bicycle, transit, etc.).

## **INVESTMENT PLAN**

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

## **PERFORMANCE MEASURES/SCENARIO DEVELOPMENT**

The Performance Measures portion of the 2022 RTP/SCS delineates the current program of highway, streets and roadways, bicycle and pedestrian, transit, intelligent transportation systems, transportation demand management, railroad, and aviation projects. Many of the programmed and planned transportation improvement projects carry over from the 2018 RTP/SCS; however, the 2022 RTP/SCS also includes a number of new projects. All projects listed in the 2022 RTP/SCS are defined as Tier I improvements. The Tier I list contains short- and long-range projects that are fully fundable from anticipated revenue sources and would likely be programmed during the life of the RTP (by 2046).

The recommended Tier I improvements for each transportation mode type, including roadways, transit, bicycle and pedestrian and aviation, are intended to implement a balanced multimodal circulation system, improve air quality by reducing vehicle miles traveled (VMT) and greenhouse gas (GHG) emissions while accommodating anticipated travel demand. In addition to the typical transportation system improvements such as widening roadways and adding traffic signals to improve congestion and mobility, KCAG is committed to analyzing alternative strategies such as Transportation Systems Management (TSM), Transportation Demand Management (TDM), and Intelligent Transportation Systems (ITS) to increase system efficiencies. The alternative strategies will provide increased opportunities for non-auto travel; thus, reducing VMT and improving overall air quality.

## Transportation Projects

### *Roadway Improvements*

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

The proposed roadway projects include road widenings and extensions, various improvements to interchanges/intersections, bridge replacements, and construction of freeway overcrossings. Road widening, auxiliary lane construction, roadway rehabilitation, railroad crossing improvements and various other improvements including signal installation are programmed or planned along highways and along local arterials in Hanford, Lemoore, Corcoran, Avenal, and throughout Kings County.

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

### *Transit Improvements*

Transit improvements include: installing bus shelters, beginning the implementation of Zero Emission fleet including purchasing zero-emission vehicles and buses, implement zero-emission fueling stations, widening streets from two to four lanes with either a left turn or median included, constructing multimodal transit centers, implement traffic-calming designs for intersections, and more.

### *Bicycle and Pedestrian Improvements*

Bicycle and pedestrian improvements consist of various signage, striping, and signal modifications to facilitate multiple use of existing roadway corridors throughout the county; specifically, continuous bike lanes (Class II), new bike routes (Class III), separated bikeways (Class IV), expansion of the Hanford Pedestrian Project to more streets, bike station installations, improved sidewalks and restriped crosswalks along major roads and the surrounding areas, pedestrian crossings across railroads, footpaths and multi-use paths in new developments, and cut-throughs from cul-de-sacs.

### *Airport Improvements*

The 2022 RTP/SCS includes a number of new projects at Hanford Municipal Airport. These include the following:

- Rehabilitate South Transient Runway Apron- Design Only
- Rehabilitate South Transient Runway Apron – Construction Phase I
- Rehabilitate South Transient Runway Apron – construction Phase II
- Rehabilitate Taxiway A, Connector Taxiways & Large Aircraft Apron – design only.

### *Operations and Maintenance*

Operations and Maintenance projects are under the jurisdiction of Caltrans, as they are regional projects throughout the County. The types of improvements include: upgrading curb ramps, sidewalk and crosswalks, the installation of new centerlines or edge lines and shoulder rumble strips, upgrading water and wastewater systems, implementing/upgrading transportation infrastructure for zero-emission vehicle charging, construction of new auxiliary lane and arterial roadway, addressing and maintaining areas roadsides and drainages, re/paving multi-use paths, implementing a Pavement Maintenance Program, and installing traffic signals and pedestrian facilities.

## Alternatives

As required by the California Environmental Quality Act (CEQA), this EIR examines alternatives to the proposed project. Studied alternatives include the following two alternatives. Based on the alternatives analysis, Alternative 4 was determined to be the environmentally superior alternative.

- **Alternative 1: Current Trend (No Project Alternative; SCS Scenario A).** Scenario A (Current Trend) reflects the planned general plan growth detailed in the local agency's general plans. These growth patterns are consistent with growth historically seen in Kings County, with most residential and non-residential growth occurring within the incorporated cities of Hanford, Lemoore, Corcoran, and Avenal. Although Kings County is relatively rural, mixed-use infill and higher-density development are already seen in part of the urbanized areas. In addition, the mixed-use and infill development projects are encouraged in all the local agency general plans – most recently in Hanford general plan update. This includes a mix of infill development in downtown areas with some development in new growth areas but still within urban growth lines. Over 98 percent of countywide housing growth is projected within incorporated cities, with less than 2 percent growth in unincorporated communities. Likewise, 95 percent of employment growth under the Current Trend scenario is in the cities, while 5 percent is in existing unincorporated communities. Likewise, 95 percent of employment growth under the Current Trend scenario is in the cities while 5 percent is in existing unincorporated communities. The housing type distribution under Scenario A is approximately 77% detached single-family homes over multi-family housing, constituting 23% of residential land use. The distribution of new residential development reflects an 83/17 percent split of single-family housing relative to new multi-family housing. Transportation investments in the Project prioritize roadway rehabilitation and roadway system preservation. No new roadway capacity of state highway facilities is assumed. Transportation investment in Scenario A is dedicated to roadway maintenance with increased funding for alternative transportation improvements such as transit and bicycle/pedestrian improvements.
- **Alternative 2: Residential Infill (SCS Scenario B).** Scenario B (Residential Infill) reflects efforts in several jurisdictions currently revising their zoning codes to accommodate new accessory dwelling units (AB 1584) and lot split (SB 9) flexibility (Avenal, Corcoran, the County are currently updating their zoning codes). This scenario reflects the potential market response for increases in Accessory Dwelling Unit (ADU) development and lot-split activity in established detached single family residential areas of Kings County. This scenario reflects a reallocation of single-family detached dwelling unit (SFDU) growth which will decrease the numbers of new SFDU assumed to be developed and increase the assumptions for ADUs within high probability neighborhoods within the cities and developed unincorporated areas of Kings County. This effectively focuses more residential development nearer to downtown cores in close proximity

to jobs and services. It also limits development in new growth areas by limiting the need for new residential development in unincorporated communities. Compared to Scenario A, established residential neighborhoods in this scenario will absorb approximately 1,522 ADU units by 2035 providing higher residential density relative to Scenario A. The higher housing density comes from a greater reliance on ADUs and multi-family housing. The housing type distribution under Scenario B is approximately 74% detached single-family homes over multi-family housing which constitute 26% of residential land use. The distribution of new residential development reflects a 64/33 percent split of single family housing relative to new multi-family housing or ADUs. Identical to Scenario A, transportation investments in Scenario B prioritize roadway rehabilitation and roadway system preservation. No new roadway capacity of state highway facilities is assumed. Transportation investment in Scenario A is dedicated to roadway maintenance with increased funding for alternative transportation improvements such as transit and bicycle/pedestrian improvements.

- **Alternative 3: Current Land Use with Enhanced Transportation Investment (SCS Scenario C).** Alternative 3 couples the Current Trend (Scenario A) land use with enhanced investments in electromobility (i.e., ZEV charging infrastructure), broadband expansion (serving areas that currently have no or poor broadband access), active transportation infrastructure (advancing more projects identified in the active transportation plans) and passenger rail (i.e., High Speed Rail). Based on the financial analysis of projected revenues relative to the capital/operating costs the RTP Tier 1 list of projects, these additional investments can be absorbed without exceeding the projected revenue line. Transportation investments for Scenario C are more relatively focused on alternative transportation and emerging trends in transportation such as electromobility and broadband expansion as a means to reduce VMT and GHG emissions. The relative amount of these investments the relative amount of investment in new roadway capacity.
- **Alternative 4: Residential Infill with Enhanced Transportation Investment (SCS Scenario D).** Scenario D couples the Residential Infill (Scenario B) land use with the same enhanced investments described for Scenario C. This includes the same enhanced investments in electromobility (i.e., ZEV charging infrastructure), broadband expansion (serving areas that currently have no or poor broadband access), active transportation infrastructure (advancing more projects identified in the active transportation plans) and passenger rail (i.e., High Speed Rail).

Refer to Section 6.0, *Alternatives*, for the complete alternatives analysis.

## Areas of Known Controversy

The EIR scoping process identified few areas of known controversy for the proposed project. Responses to the Notice of Preparation of the Draft EIR and input received are summarized in Chapter 1, *Introduction*.

## Issues to be Resolved

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

## Summary of Impacts and Mitigation Measures

Table ES-1 summarizes the environmental impacts of the proposed project, proposed mitigation measures, and residual impacts (the impact after application of mitigation, if required). Although distinct from mitigation measures, project design features (PDFs) are also listed because they will be included as conditions of approval by the City to avoid potential biological and geological impacts. Impacts are categorized as follows:

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

Cumulative impacts are not discussed under Table ES-1; rather, cumulative impacts are discussed within each resource section of Chapter 4 of the EIR.



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

Impact	Mitigation Measure(s)	Impact Finding
<b>Aesthetic and Visual Resources</b>		
<p><b>Impact AES-1.</b> The proposed transportation projects and land use projects envisioned under the proposed 2022 RTP/SCS would have a substantial adverse effect on scenic vistas and substantially damage scenic resources within a state scenic highway. Impacts would be significant and unavoidable.</p>	<p><b>AES-1(a) Discouragement of Architectural Features that Block Scenic Views.</b> The implementing agency shall, or can and should, design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Setbacks and acoustical design of adjacent structures shall be preferentially used as mitigation for potential noise impacts arising from increased traffic volumes associated with adjacent land development. The use of sound walls, or any other architectural features that could block views from the scenic highways or other view corridors, shall be discouraged to the extent possible. Where use of sound walls is found to be necessary, walls shall incorporate offsets, accents, and landscaping to prevent monotony. In addition, sound walls shall be complementary in color and texture to surrounding natural features.</p> <p><b>AES-1(b) Tree Protection and Replacement.</b> The implementing agency for new roadways, extensions, and widenings of existing roadways, trails and facility improvements shall, or can and should, avoid the removal of existing mature trees to the extent possible consistent with adopted local City and County policies as applicable. The implementing agency of a particular 2022 RTP/SCS project shall replace any trees lost at a minimum 2:1 basis and incorporate them into the landscaping design for the roadway when feasible. The implementing agency also shall ensure the continued vitality of replaced trees through periodic maintenance.</p>	Significant and Unavoidable
<p><b>Impact AES-2.</b> The proposed transportation projects and land use patterns envisioned by the proposed 2022 RTP/SCS would in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site or its surroundings, and in an urbanized area, would conflict with applicable zoning and other regulations governing scenic quality. Impacts would be significant and unavoidable.</p>	<p><b>AES-2(a) Recontouring for Adjacent Landforms.</b> Where a particular 2022 RTP/SCS project affects adjacent landforms, the local jurisdiction in which the project is located should ensure that recontouring provides a smooth and gradual transition between modified landforms and existing grade. This requirement can be accomplished through the placement of conditions on the project by the implementing agency during the project specific environmental review.</p> <p><b>AES-2(b) Landscaping for Landform Variation.</b> The local jurisdiction in which a particular project is located should ensure that associated landscape materials and design enhance landform variation, provide erosion control and blend with the natural setting. This requirement can be accomplished through the placement of conditions on the project by the local jurisdiction during individual environmental review. To ensure compliance with approved landscape plans, the implementing agency should provide a performance security equal to the value of the landscaping/irrigation installation.</p> <p><b>AES-2(c) Design Measures for Visual Compatibility.</b> The implementing agency shall, or can and should, require measures that minimize contrasts in scale and massing between the project and surrounding natural forms and developments. Strategies to achieve this include:</p> <ul style="list-style-type: none"> <li>▪ Siting or designing projects to minimize their intrusion into important viewsheds;</li> <li>▪ Avoiding large cuts and fills when the visual environment (natural or urban) would be substantially disrupted;</li> <li>▪ Ensuring that re-contouring provides a smooth and gradual transition between modified landforms and existing grade;</li> <li>▪ Developing transportation systems to be compatible with the surrounding environments (e.g., colors and materials of construction material; scale of improvements);</li> </ul>	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
<b>Impact AES-3.</b> Development of proposed transportation improvement projects and land use patterns envisioned under proposed 2022 RTP/SCS would create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area. Impacts are significant and unavoidable.	<ul style="list-style-type: none"> <li>▪ Designing and installing landscaping to add natural elements and visual interest to soften hard edges, as well as to restore natural features along corridors where possible after widening, interchange modifications, re-alignment, or construction of ancillary facilities. The implementing agency shall provide a performance security equal to the value of the landscaping/irrigation installation to ensure compliance with landscaping plans; and</li> <li>▪ Designing new structures to be compatible in scale, mass, character, and architecture with existing structures</li> </ul>	Significant and Unavoidable
	<p><b>AES-3(a) Roadway and Project Lighting.</b> The implementing shall, or can and should, minimize roadway lighting to the extent possible, consistent with safety and security objectives, and shall not exceed the minimum height requirements of the local jurisdiction in which the project is proposed. This may be accomplished through the use of back shields, hoods, low intensity lighting, and using as few lights as necessary to achieve the goals of the project.</p> <p>As part of planning, design, and engineering for projects, project sponsors shall ensure that projects proposed near light-sensitive uses avoid substantial spillover lighting. Potential design measures include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>▪ Lighting shall consist of cutoff-type fixtures that cast low-angle illumination to minimize incidental spillover of light into adjacent properties and undeveloped open space. Fixtures that project light upward or horizontally shall not be used.</li> <li>▪ Lighting shall be directed away from habitat and open space areas adjacent to the project site.</li> <li>▪ Light mountings shall be downcast, and the height of the poles minimized to reduce potential for backscatter into the nighttime sky and incidental spillover of light onto adjacent private properties and undeveloped open space. Light poles will be 20 feet high or shorter. Luminary mountings shall have non-glare finishes.</li> <li>▪ Exterior lighting features shall be directed downward and shielded in order to confine light to the boundaries of the subject project. Where more intense lighting is necessary for safety purposes, the design shall include landscaping to block light from sensitive land uses, such as residences.</li> </ul> <p><b>AES-3(b) Glare Reduction Measures.</b> Implementing agencies shall, or can and should, minimize and control glare from transportation and infill development projects near glare-sensitive uses through the adoption of project design features such as:</p> <ul style="list-style-type: none"> <li>▪ Planting trees along transportation corridors to reduce glare from the sun;</li> <li>▪ Creating tree wells in existing sidewalks;</li> <li>▪ Adding trees in new curb extensions and traffic circles;</li> <li>▪ Adding trees to public parks and greenways;</li> <li>▪ Landscaping off-street parking areas, loading areas, and service areas;</li> <li>▪ Limiting the use of reflective materials, such as metal;</li> <li>▪ Using non-reflective material, such as paint, vegetative screening, matte finish coatings, and masonry;</li> <li>▪ Screening parking areas by using vegetation or trees;</li> <li>▪ Using low-reflective glass; and</li> </ul>	

Impact	Mitigation Measure(s)	Impact Finding
	<ul style="list-style-type: none"> <li>Complying with applicable general plan policies, municipal code regulations, city or local controls related to glare</li> <li>Tree species planted to comply with this measure shall provide substantial shade cover when mature. Utilities shall be installed underground along these routes wherever feasible to allow trees to grow and provide shade without need for severe pruning.</li> </ul>	
<b>Air Quality</b>		
<b>Impact AQ-1.</b> The proposed 2022 RTP/SCS would not conflict with or obstruct implementation of the applicable air quality plan. Impacts would be less than significant.	None required.	Less than Significant
<b>Impact AQ-2.</b> Construction activities associated with transportation improvements and land use projects envisioned by the proposed 2022 RTP/SCS would result in a cumulatively considerable net increase in criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard. This impact would be significant and unavoidable.	<p><b>AQ-2(a) Application of SJVAPCD Feasible Mitigation Measures.</b> For all projects, the implementing agency shall incorporate the most recent SJVAPCD feasible construction mitigation measures and/or technologies for reducing inhalable particles based on analysis of individual sites and project circumstances. Additional and/or modified measures may be adopted by SJVAPCD prior to implementation of individual projects under the proposed 2022 RTP/SCS; therefore, the most current list of feasible mitigation measures at the time of project implementation shall be used. The current SJVAPCD feasible mitigation measures include the following (SJVAPCD 2015b):</p> <ul style="list-style-type: none"> <li>All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, tarp cover, or other suitable cover or vegetative ground cover.</li> <li>All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.</li> <li>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.</li> <li>Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.</li> <li>An owner/operator of any site with 150 or more vehicle trips per day, or 20 or more vehicle trips per day by vehicles with three or more axles shall implement measures to prevent carryout and trackout.</li> <li>Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use.</li> </ul> <p><b>AQ-2(b) Diesel Equipment Emissions Standards.</b> The implementing agency shall ensure, to the maximum extent feasible, that diesel construction equipment meeting CARB Tier 4 emission standards for off-road heavy-duty diesel engines is used. If use of Tier 4 equipment is not feasible, diesel construction equipment meeting Tier 3 (or if</p>	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	<p>infeasible, Tier 2) emission standards shall be used. These measures shall be noted on all construction plans, and the implementing agency shall perform periodic site inspections.</p> <p><b>AQ-2(c) Electric Construction Equipment.</b> The implementing agency shall ensure that to the extent feasible, construction equipment utilizes electricity from power poles rather than temporary diesel power generators and/or gasoline power generators.</p>	
<p><b>Impact AQ-3.</b> Operation of the proposed transportation improvements and land use projects envisioned by the proposed 2022 RTP/SCS would result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. Impacts would be significant and unavoidable.</p>	<p><b>AQ-3 Long-term Regional Operational Emissions.</b> Implementing agencies can and should implement long-term operational emissions reduction measures. Such reduction measures include the following:</p> <ul style="list-style-type: none"> <li>▪ Require that all interior and exterior architectural coatings for all developments utilize coatings following SJVAPCD Rule 4601, <i>Architectural Coatings</i>.</li> <li>▪ Increase building envelope energy efficiency standards in excess of applicable building standards and encourage new development to achieve zero net energy use.</li> <li>▪ Install energy-efficient appliances, interior lighting, and building mechanical systems. Encourage installation of solar panels for new residential and commercial development.</li> <li>▪ Locate sensitive receptors more than 500 feet of a freeway, 500 feet of urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.</li> <li>▪ Locate sensitive receptors more than 1,000 feet of a major diesel rail service or railyards. Where adequate buffer cannot be implemented, implement the following: <ul style="list-style-type: none"> <li>▫ Install air filtration (as part of mechanical ventilation systems or stand-alone air cleaners) to indoor reduce pollution exposure for residents and other sensitive populations in buildings that are close to transportation network improvement projects.</li> <li>▫ Use air filtration devices rated MERV-13 or higher.</li> </ul> </li> <li>▪ Plant trees and/or vegetation suited to trapping roadway air pollution and/or sound walls between sensitive receptors and the pollution source. The vegetation buffer should be thick, with full coverage from the ground to the top of the canopy. Install higher efficacy public street and exterior lighting.</li> <li>▪ Use daylight as an integral part of lighting systems in buildings.</li> <li>▪ Use passive solar designs to take advantage of solar heating and natural cooling.</li> <li>▪ Install light colored “cool” roofs, cool pavements.</li> <li>▪ Install solar and tankless hot water heaters.</li> <li>▪ Exclude wood-burning fireplaces and stoves.</li> <li>▪ Incorporate design measures and infrastructure that promotes safe and efficient use of alternative modes of transportation (e.g., neighborhood electric vehicles, bicycles) pedestrian access, and public transportation use. Such measures may include incorporation of electric vehicle charging stations, bike lanes, bicycle-friendly intersections, and bicycle parking and storage facilities.</li> </ul>	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact Finding
	<ul style="list-style-type: none"> <li>▪ Incorporate design measures that promote ride sharing programs (e.g., by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading and waiting areas for ride sharing vehicles, and providing a web site or message board for coordinating rides).</li> </ul>	
<p><b>Impact AQ-4.</b> The proposed transportation improvements and land use projects envisioned by the proposed 2022 RTP/SCS would expose sensitive receptors to substantial particulate matter pollutant concentrations. However, impacts would be significant and unavoidable.</p>	<p>T-2(a) – See Impact T-2.</p>	<p>Significant and Unavoidable</p>
<p><b>Impact AQ-5.</b> The transportation improvements and land use projects envisioned by the proposed 2022 RTP/SCS would expose sensitive receptors to substantial TAC concentrations. Impacts would be significant and unavoidable.</p>	<p><b>AQ-4 Health Risk Reduction Measures.</b> Transportation project sponsor agencies shall implement the following measures for projects that could facilitate an increase in vehicle trips:</p> <ul style="list-style-type: none"> <li>▪ During project-specific design and CEQA review, the potential localized particulate (PM<sub>10</sub> and PM<sub>2.5</sub>) impacts and their health risks shall be evaluated for individual projects. Localized particulate matter concentrations shall be estimated using procedures and guidelines consistent with U.S. EPA 2015's <i>Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM<sub>2.5</sub> and PM<sub>10</sub> Nonattainment and Maintenance Areas</i>. If required based on the project-level hotspot analysis, project-specific mitigation shall be added to the project design concept or scope to ensure that local particulate (PM<sub>10</sub> and PM<sub>2.5</sub>) emissions would not reach a concentration at any location that would cause estimated cancer risk to exceed the SJVAPCD threshold of 20 in one million. Per the U.S. EPA guidance (2015), potential mitigation measures to be considered may include but shall not be limited to: providing a retrofit program for older higher emitting vehicles, anti-idling requirements or policies, controlling fugitive dust, routing traffic away from populated zones and replacing older buses with cleaner buses. These measures can and should be implemented to reduce localized particulate impacts as needed.</li> <li>▪ For projects that do not meet screening criteria, retain a qualified air quality consultant to prepare a health risk assessment (HRA) in accordance with CARB and OEHHA requirements to determine the exposure of nearby residents to TAC concentrations.</li> <li>▪ If impacts result in increased risks to sensitive receptors above significance thresholds, plant trees and/or vegetation suited to trapping TACs and/or sound walls between sensitive receptors and the pollution source.</li> </ul> <p>In addition, consistent with the general guidance contained in CARB's <i>Air Quality and Land Use Handbook</i> (2005) and Technical Advisory on <i>Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways</i> (2017), cities and counties shall incorporate appropriate and feasible measures into project building design for land use projects including residential, school and other sensitive uses located within 500 feet (or other appropriate distance as determined by the lead agency) of freeways, heavily travelled arterials, railways and other sources of diesel</p>	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact Finding
	<p>particulate matter, including roadways experiencing significant vehicle delays. The appropriate measures shall include one or more of the following methods, as applicable and as determined by a qualified professional. The implementing agency shall incorporate health risk reduction measures based on an analysis of individual sites and project circumstances. These measures may include:</p> <ul style="list-style-type: none"> <li>▪ Avoid siting new sensitive land uses within 500 feet of a freeway or railway.</li> <li>▪ Require development projects for new sensitive land uses to be designed to minimize exposure to roadway-related pollutants to the maximum extent feasible through inclusion of design components including air filtration and physical barriers.</li> <li>▪ Do not locate sensitive receptors near the entry and exit points of a distribution center.</li> <li>▪ Locate structures and outdoor living areas for sensitive uses as far as possible from the source of emissions. As feasible, locate doors, outdoor living areas and air intake vents primarily on the side of the building away from nearby high volume roadways or other pollution source. As feasible, incorporate dense, tiered vegetation that regains foliage year-round and has a long life span between the pollution source and the project.</li> <li>▪ Maintain a 50-foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year).</li> <li>▪ Install, operate, and maintain in good working order a central heating and ventilation (HV) system or other air take system in the building, or in each individual residential unit, that meets the efficiency standard of the MERV 13. The HV system should include the following features: <ul style="list-style-type: none"> <li>▫ Installation of a high efficiency filter and/or carbon filter-to-filter particulates and other chemical matter from entering the building.</li> <li>▫ Use of either HEPA filters or ASHRAE 85 percent supply filters.</li> <li>▫ Completion of ongoing maintenance.</li> </ul> </li> <li>▪ Retain a qualified HV consultant or Home Energy Rating Systems rater during the design phase of the project to locate the HV system based on exposure modeling from the mobile and/or stationary pollutant sources.</li> <li>▪ Maintain positive pressure within the building.</li> <li>▪ Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air.</li> <li>▪ Achieve a performance standard of at least four air exchanges per hour of recirculation. Achieve a performance standard of 0.25 air exchanges per hour of unfiltered infiltration if the building is not positively pressurized.</li> <li>▪ Require project owners to provide a disclosure statement to occupants and buyers summarizing technical studies that reflect health concerns about exposure to highway/freeway exhaust emissions.</li> </ul>	
<b>Impact AQ-6.</b> Construction of the proposed transportation improvements and land use projects envisioned by the proposed 2022 RTP/SCS would not result in other emissions (such as those leading to	None required.	Less than Significant

Impact	Mitigation Measure(s)	Impact Finding
odors) adversely affecting a substantial number of people. Impacts would be less than significant.		
<b>Agriculture and Forestry</b>		
<b>Impact AG-1.</b> The proposed 2022 RTP/SCS could result in the conversion of important farmland to nonagricultural use, and/or conflict with existing zoning for agriculture. This impact would be significant and unavoidable.	<p><b>AG-1 Agricultural Land Impact Avoidance and Minimization.</b> Implementing agencies shall, or can and should, implement measures, where feasible based on project-and site-specific considerations that include, but are not limited to those identified below.</p> <ul style="list-style-type: none"> <li>Require project relocation or corridor realignment, where feasible, to avoid Important Farmland, agriculturally zoned land and/or land under Williamson Act contract;</li> <li>Compensatory mitigation at a minimum 1:1 (impacted: replaced) acreage ratio with Important Farmland of equivalent or better quality;</li> <li>Require acquisition of conservation easements on land at least equal in quality and size as mitigation for the loss of Important Farmland through an appropriate land trust (e.g., Central Valley Farmland Trust); and/or</li> <li>Institute new protection of farmland in the project area or elsewhere through the use of long-term restrictions on use, such as 20-year Farmland Security Zone contracts (Government Code Section 51296 et seq.) or 10-year Williamson Act contracts (Government Code Section 51200 et seq.).</li> </ul>	Significant and Unavoidable
<b>Impact AG-2.</b> The proposed 2022 RTP/SCS would not conflict with existing zoning for forest land, timberland, or timberland production, and would not convert forest land to non-forest uses. This impact would be less than significant.	None required.	Less than Significant
<b>Biological Resources</b>		
<b>Impact BIO-1.</b> Implementation of transportation projects and the land use scenario envisioned by the proposed 2022 RTP/SCS may result in impacts to special-status plant and animal species, either directly or through habitat modifications. This impact	<p><b>BIO-1(a) Biological Resources Screening and Assessment.</b> The implementing agencies shall, or can and should, implement the following measures during CEQA review of projects implementing the proposed 2022 RTP/SCS. On a project-by-project basis, a preliminary biological resource screening shall be performed as part of the environmental review process to determine whether the project has any potential to impact biological resources. If it is determined that the project has no potential to impact biological resources, no further action is required. If the project would have the potential to impact biological resources, prior to construction, a qualified biologist shall conduct a biological resources assessment to document the existing biological resources within the project footprint plus a buffer and to determine the potential impacts to those resources. The biological resources assessment shall evaluate the potential for impacts to all biological resources including, but not limited to: special-status species, nesting birds, wildlife movement, sensitive plant communities, critical habitat, Essential Fish Habitat, and other resources judged to be</p>	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
would be significant and unavoidable.	<p>sensitive by local, state, and/or federal agencies. Pending the results of the biological resources assessment, design alterations, further technical studies (i.e., protocol surveys) and/or consultations with the USFWS, CDFW and/or other local, state, and federal agencies may be required. If the project cannot be designed without complete avoidance, the sponsor agency shall coordinate with the appropriate regulatory agency (i.e., USFWS, NMFS, CDFW, USACE) to obtain regulatory permits and implement project - specific mitigation prior to any construction activities. The following mitigation measures [BIO-1(b) through BIO-1(j)] shall be incorporated only as applicable into the biological resources assessment and/or the project CEQA document for projects where specific resources are present or may be present and impacted by the project. Note that specific surveys described in the mitigation measures below may be completed as part of the biological resources assessment where suitable habitat is present. The results of the biological resources screening and assessment shall be provided to the implementing agency for review and approval.</p> <p><b>BIO-1(b) Special-Status Plant Species Surveys.</b> If completion of the project-specific biological resources assessment determines that special-status plant species have potential to occur on-site, surveys for special-status plants shall be completed prior to any vegetation removal, grubbing, or other construction activity of each project (including staging and mobilization). The surveys shall be floristic in nature and shall be seasonally timed to coincide with the target species identified in the project-specific biological resources assessment. All plant surveys shall be conducted by a qualified biologist approved by the implementing agency no more than two years prior to project implementation. All special-status plant species identified on-site shall be mapped onto a site-specific aerial photograph or topographic map. Surveys shall be conducted in accordance with the most current protocols established by the CNPS, CDFW and/or USFWS. A report of the survey results shall be submitted to the implementing agency for review. If special-status plant species are identified, mitigation measure BIO-1(c) shall apply.</p> <p><b>BIO-1(c) Special-Status Plant Species Avoidance, Minimization, and Mitigation.</b> If state or federally listed and/or CRPR 1 and 2 species are found during special-status plant surveys [pursuant to mitigation measure BIO-1(b)], then the project shall be re-designed to avoid impacting these plant species to the maximum extent feasible. Occurrences of these species that are not within the immediate disturbance footprint but are located within 50 feet of disturbance limits shall have bright orange protective fencing installed at least 30 feet beyond their extent, or other distance as approved by a qualified biologist, to protect them from harm. If CRPR 3 and 4 species are found, the biologist shall evaluate to determine if they meet criteria to be considered special-status, and if so, the same process as identified for CRPR 1 and 2 species shall apply.</p> <p>If special-status plants species cannot be avoided and would be impacted by a project implemented under the 2022 RTP/SCS, all impacts shall be mitigated at a minimum ratio of 1:1 (number of acres or individuals restored to number of acres or individuals impacted) for each species as a component of habitat restoration. A restoration plan shall be prepared and submitted to the implementing agency. The restoration plan shall include, at a minimum, the following components:</p> <ul style="list-style-type: none"> <li>▪ Description of the project/impact site (i.e., location, responsible parties, areas to be impacted by habitat type);</li> <li>▪ Goal(s) of the compensatory mitigation project [type(s) and area(s) of habitat to be established, restored, enhanced, and/or preserved; specific functions and values of habitat type(s) to be established, restored, enhanced, and/or preserved];</li> </ul>	



Impact	Mitigation Measure(s)	Impact Finding
	<ul style="list-style-type: none"> <li>▪ Description of the proposed compensatory mitigation site (location and size, ownership status, existing functions and values);</li> <li>▪ Implementation plan for the compensatory mitigation site (rationale for expecting implementation success, responsible parties, schedule, site preparation, planting plan);</li> <li>▪ Maintenance activities during the monitoring period, including weed removal as appropriate (activities, responsible parties, schedule);</li> <li>▪ Monitoring plan for the compensatory mitigation site, including no less than quarterly monitoring for the first year (performance standards, target functions and values, target acreages to be established, restored, enhanced, and/or preserved, annual monitoring reports);</li> <li>▪ Success criteria based on the goals and measurable objectives; said criteria to include numeric criteria to be selected based on the scale of the restoration effort and the restoration technique used: <ul style="list-style-type: none"> <li>▫ At least 80 percent survival of container plants, and/or</li> <li>▫ Successful establishment the required number of individuals planted from seed to meet required replacement ratios; and/or</li> <li>▫ Sampling-based recruitment/survival criteria to achieve vegetative cover or total number of surviving individuals equal to at least 70 percent of the equivalent metric in reference sites for the same habitat type; sampling-based criteria must use a scientifically valid vegetation sampling method;</li> </ul> </li> <li>▪ An adaptive management program and remedial measures to address any shortcomings in meeting success criteria;</li> <li>▪ Notification of completion of compensatory mitigation and agency confirmation; and</li> <li>▪ Contingency measures (initiating procedures, alternative locations for contingency compensatory mitigation, funding mechanism).</li> </ul> <p><b>BIO-1(d) Endangered/Threatened Animal Species Habitat Assessment and Protocol Surveys.</b> If the results of the biological resources assessment determine that suitable habitat may be present for any such species, protocol habitat assessments/surveys shall be completed in accordance with CDFW and/or USFWS/NMFS protocols prior to issuance of any construction permits/project approvals.</p> <p>Alternatively, in lieu of conducting protocol surveys, the implementing agency may choose to assume presence within the project footprint and proceed with development of appropriate avoidance measures, consultation, and permitting, as applicable.</p> <p>If the target species is detected during protocol surveys, or protocol surveys are not conducted and presence assumed based on suitable habitat, mitigation measure BIO-1(e) shall apply.</p> <p><b>BIO-1(e) Endangered/Threatened Animal Species Avoidance and Compensatory Mitigation.</b> If habitat is occupied or presumed occupied by federal and/or state listed species and would be impacted by the project, the implementing agency shall redesign the project in coordination with a qualified biologist to avoid impacting occupied/presumed occupied habitat to the extent feasible. If occupied or presumed occupied habitat cannot be avoided, the</p>	

Impact	Mitigation Measure(s)	Impact Finding
	<p>implementing agency shall estimate the total acreages for habitat that would be impacted prior to the issuance of construction permits/approvals.</p> <p>Compensatory mitigation shall be achieved through purchase of credits at a USFWS, NMFS and/or CDFW approved conservation bank if available for the affected species, and/or through providing compensatory mitigation to offset impacts to federal and/or state listed species habitat. Compensatory mitigation shall be provided at a minimum ratio of 1:1 with the final ratio to be determined by a qualified biologist (in coordination with CDFW and USFWS as and if applicable). Compensatory mitigation may be combined/nested with special-status plant species and sensitive community restoration where applicable. Temporary impact areas shall be restored to pre-project conditions.</p> <p>If on and/or off-site compensatory mitigation sites are identified, the implementing agency shall retain a qualified biologist to prepare a Habitat Mitigation and Monitoring Plan (HMMP) to ensure the success of compensatory mitigation sites that are to be conserved for compensation of permanent impacts to federal and/or state listed species. The HMMP shall identify long term site management needs, routine monitoring techniques, techniques, and success criteria, and shall determine if the conservation site has restoration needs to function as a suitable mitigation site. If restoration is required on the conservation site, the HMMP shall contain the restoration components outlined under the Restoration Plan listed in measure BIO-1(c). The HMMP shall be submitted to the implementing agency.</p> <p><b>BIO-1(f) Endangered/Threatened Species Avoidance and Minimization.</b> The following measures shall be applied to aquatic and terrestrial species, where appropriate. Project sponsors shall select from these measures as appropriate depending on site conditions, the species with potential for occurrence, and the results of the biological resources screening and assessment (measure BIO-1[a]).</p> <ul style="list-style-type: none"> <li>▪ Preconstruction surveys for federal and/or state listed species with potential to occur shall be conducted where suitable habitat is present by a qualified biologist not more than 48 hours prior to the start of construction activities. The survey area shall include the proposed disturbance area and all proposed ingress/egress routes, plus a 100-foot buffer. If any life stage of federal and/or state listed species is found within the survey area, the appropriate measures in the BO or Habitat Conservation Plan(HCP)/Incidental Take Permit (ITP) issued by the USFWS/NMFS (relevant to federal listed species) and/or the ITP issued by the CDFW (relevant to state listed species) shall be implemented; or if such guidance is not in place for the activity, the USFWS, NMFS and/or CDFW shall be consulted to determine the appropriate course of action. The results of the pre-construction surveys shall be submitted to the implementing agency for review and approval prior to start of construction.</li> <li>▪ Ground disturbance shall be limited to the minimum necessary to complete the project. The project limits of disturbance shall be flagged. Areas of special biological concern within or adjacent to the limits of disturbance shall have highly visible orange construction fencing installed between said area and the limits of disturbance.</li> <li>▪ All projects occurring within/adjacent to aquatic habitats (including riparian habitats and wetlands) shall be completed between April 1 and October 31, to avoid impacts to sensitive aquatic species.</li> <li>▪ All projects occurring within or adjacent to sensitive habitats that may support federally and/or state endangered/threatened species shall have a qualified biologist present during all initial ground disturbing/vegetation clearing activities. Once initial ground disturbing/vegetation clearing activities have been completed, said biologist shall conduct daily pre-activity clearance surveys for endangered/threatened species.</li> </ul>	

Impact	Mitigation Measure(s)	Impact Finding
	<p>Alternatively, and upon approval of the CDFW and/or USFWS or as outlined in project permits, said biologist may conduct site inspections at a minimum of once per week to ensure all prescribed avoidance and minimization measures are begin fully implemented.</p> <ul style="list-style-type: none"> <li>▪ No endangered/threatened species shall be captured and relocated without authorization from the CDFW and/or USFWS/NMFS.</li> <li>▪ If pumps are used for dewatering activities, all intakes shall be completely screened with wire mesh not larger than five millimeters to prevent animals from entering the pump system.</li> <li>▪ If at any time during construction of the project an endangered/threatened species enters the construction site or otherwise may be impacted by the project, all project activities shall cease. At that point, the USFWS, NMFS and/or CDFW shall be consulted to determine the appropriate course of action, or the appropriate measures implemented in accordance with the BO or HCP/ITP issued by the USFWS (relevant to federal listed species) and/or the ITP issued by the CDFW (relevant to state listed species) and work can then continue as guided by those documents and the agencies as appropriate.</li> <li>▪ All vehicle maintenance/fueling/staging shall occur not less than 100 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills. A minimum of one spill kit shall be available at each work location near riparian habitat or water bodies.</li> <li>▪ No equipment shall be permitted to enter wetted portions of any affected drainage channel.</li> <li>▪ All equipment operating within streambeds (restricted to conditions in which water is not present) shall be in good conditions and free of leaks. Spill containment shall be installed under all equipment staged within stream areas and extra spill containment and clean up materials shall be located in close proximity for easy access.</li> <li>▪ If project activities could degrade water quality, water quality sampling shall be implemented to identify the pre-project baseline, and to monitor during construction for comparison to the baseline.</li> <li>▪ At the end of each workday, excavations shall be secured with cover or a ramp shall be provided to prevent wildlife entrapment.</li> <li>▪ All trenches, pipes, culverts, or similar structures shall be inspected for animals prior to burying, capping, moving, or filling</li> </ul> <p><b>BIO-1(g) Non-Listed Special-status Animal Species Avoidance and Minimization.</b> Depending on the species identified in the biological resources screening assessment (measure BIO-1[a]), measures shall be selected from among the following to reduce the potential for impacts to non-listed special-status animal species:</p> <ul style="list-style-type: none"> <li>▪ Preconstruction clearance surveys shall be conducted within 14 days prior to the start of construction (including staging and mobilization). The surveys shall cover the entire disturbance footprint plus a minimum 100-foot buffer and shall identify all special-status animal species that may occur on-site. All non-listed special-status species shall be relocated from the site either through direct capture or through passive exclusion. A report of the preconstruction survey shall be submitted to the implementing agency for their review and approval prior to the start of construction.</li> </ul>	

Impact	Mitigation Measure(s)	Impact Finding
	<ul style="list-style-type: none"> <li>▪ A qualified biologist shall be present during all initial ground disturbing activities, including vegetation removal, to recover special-status animal species unearthed by construction activities.</li> <li>▪ Upon completion of the project, a qualified biologist shall prepare a final compliance report documenting all compliance activities implemented for the project, including the preconstruction survey results. The report shall be submitted within 30 days of completion of the project.</li> <li>▪ If special-status bat species may be present and impacted by the project, within 30 days of the start of construction a qualified biologist shall conduct presence/absence surveys for special-status bats, in consultation with the CDFW, where suitable roosting habitat is present. Surveys shall be conducted using acoustic detectors and by searching tree cavities, crevices, and other areas where bats may roost. If active bat roosts or colonies are present, the biologist shall evaluate the type of roost to determine the next step.</li> <li>▪ If a maternity colony is present, all construction activities shall be postponed within a 250-foot buffer around the maternity colony until it is determined by a qualified biologist that the young have dispersed or as recommended by CDFW through consultation. Once it has been determined that the roost is clear of bats, the roost shall be removed immediately. <ul style="list-style-type: none"> <li>▫ If a roost is determined by a qualified biologist to be used by a large number of bats (large hibernaculum), alternative roosts, such as bat boxes if appropriate for the species, shall be designed and installed near the project site. The number and size of alternative roosts installed will depend on the size of the hibernaculum and shall be determined through consultations with the CDFW.</li> <li>▫ If other active roosts are located, exclusion devices such as valves, sheeting or flap-style one-way devices that allow bats to exit but not re-enter roosts discourage bats from occupying the site.</li> </ul> </li> </ul>	
	<p><b>BIO-1(h) Preconstruction Surveys for Nesting Birds.</b> The implementing agencies shall, or can and should, implement the following measures during CEQA review of projects implementing the proposed 2022 RTP/SCS. For construction activities occurring during the nesting season (generally February 1 to September 15), surveys for nesting birds covered by the CFGC, the Migratory Bird Treaty Act, and Bald and Golden Eagle Protection Act shall be conducted by a qualified biologist no more than 30 days prior to vegetation removal activities.</p> <p>A qualified biologist shall conduct preconstruction surveys for raptors. The survey for the presence of bald and golden eagles, shall cover all areas within of the disturbance footprint plus a one-mile buffer where access can be secured. The survey area for all other nesting bird and raptor species shall include the disturbance footprint plus a 300-foot and 500-foot buffer, respectively.</p> <p>If active nests (nests with eggs or chicks) are located, the qualified biologist shall establish an appropriate avoidance buffer ranging from 50 to 300 feet based on the species biology and the current and anticipated disturbance levels occurring in vicinity of the nest. The objective of the buffer shall be to reduce disturbance of nesting birds. All buffers shall be marked using high-visibility flagging or fencing, and, unless approved by the qualified biologist, no construction activities shall be allowed within the buffers until the young have fledged from the nest or the nest fails.</p> <p>For bald or golden eagle nests identified during the preconstruction surveys, an avoidance buffer of up to one mile shall be established on a case-by-case basis in consultation with the USFWS and CDFW. The size of the buffer may be</p>	

Impact	Mitigation Measure(s)	Impact Finding
	<p>influenced by the existing conditions and disturbance regime, relevant landscape characteristics, and the nature, timing, and duration of the expected disturbance. The buffer shall be established between February 1 and September 15; however, buffers may be relaxed earlier than September 15 if a qualified ornithologist determines that a given nest has failed or that all surviving chicks have fledged, and the nest is no longer in use.</p> <p>A report of these preconstruction nesting bird surveys and nest monitoring (if applicable) shall be submitted to the implementing agency for review and approval prior to the start of construction.</p> <p><b>BIO-1(i) Fence and Signpost Restriction.</b> Any fencing posts or signs installed temporarily or permanently throughout the course of the project shall have the top three post holes covered or filled with screws or bolts to prevent the entrapment of wildlife, specifically the talons of birds of prey. Also, fencing shall incorporate wildlife friendly design elements, such as smooth wires and having a 6-inch or greater gap above grade. Fencing shall also be designed to be wildlife friendly (e.g., smooth top wire, smooth bottom wire at 6 inches above grade, etc.).</p> <p><b>BIO-1(j) Worker Environmental Awareness Program (WEAP).</b> The implementing agencies shall, or can and should, implement the following measures during CEQA review of projects implementing the proposed 2022 RTP/SCS. Prior to initiation of construction activities (including staging and mobilization), all personnel associated with project construction shall attend WEAP training, conducted by a qualified biologist, to aid workers in recognizing special-status resources that may occur in the project area. The specifics of this program shall include identification of the sensitive species and habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction of the project. All employees shall sign a form documenting that they have attended the WEAP and understand the information presented to them.</p>	
<p><b>Impact BIO-2.</b> Implementation of transportation projects and the land use scenario envisioned by the proposed 2022 RTP/SCS would result in substantial adverse impacts on sensitive habitats, including state or federally protected wetlands. This impact would be significant and unavoidable.</p>	<p><b>BIO-2(a) Aquatic Resources Jurisdictional Delineation and Impact Avoidance.</b> The implementing agencies shall, or can and should, implement the following measures during CEQA review of projects implementing the proposed 2022 RTP/SCS. If the results of measure BIO-1(a) indicates projects implemented under the proposed 2022 RTP/SCS occur within or adjacent to wetland, drainages, riparian habitats, or other areas that may fall under the jurisdiction of the CDFW, USACE, and/or RWQCB, a qualified biologist shall complete an aquatic resources delineation in accordance with the requirement set forth by each agency. The result shall be submitted to the implementing agency, USACE, RWQCB, and/or CDFW, as appropriate, for review and approval, and the project shall be designed to avoid and minimize impacts to jurisdictional areas to the extent feasible. The delineation shall serve as the basis to identify potentially jurisdictional areas to be protected during construction, through implementation of the avoidance and minimization identified in measure BIO-2(f).</p> <p><b>BIO-2(b) Wetland, Drainages, and Riparian Habitat Restoration.</b> The implementing agencies shall, or can and should, implement the following measures during CEQA review of projects implementing the proposed 2022 RTP/SCS. Unavoidable impacts to jurisdictional wetlands, drainages, and riparian habitat shall be mitigated at a ratio as required in applicable permits but shall not be less than a minimum ratio of 1:1, and as determined by a qualified biologist retained by the implementing agency and shall occur on-site or as close to the impacted habitat as possible. A mitigation and monitoring plan consistent with regulatory agency requirements and meeting those minimum</p>	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact Finding
	<p>standards outlined in measure BIO-1(c) shall be developed by a qualified biologist and submittal to the regulatory agency overseeing the project for approval. Alternatively, mitigation shall be accomplished through purchase of credits from an approved wetlands mitigation bank.</p> <p><b>BIO-2(c) Landscaping Plan.</b> If landscaping is proposed for a specific project, a qualified biologist/landscape architect retained by the implementing agency shall prepare a landscape plan. Drought tolerant, locally native plant species shall be used. Noxious, invasive and/or non-native plant species that are recognized on the Federal Noxious Weed List, California Noxious Weeds List and/or California Invasive Plant Council Inventory shall not be permitted. Species selected for planting shall be regionally appropriate native species that are known to occur in the adjacent native habitat types.</p> <p><b>BIO-2(d) Sensitive Natural Community Avoidance and Mitigation.</b> If the results of measure BIO-1(a) indicates projects implemented under the proposed 2022 RTP/SCS would impact sensitive natural communities, the implementing agency shall avoid impacts to sensitive natural communities through final project design modifications if feasible.</p> <p>If the implementing agency determines that sensitive natural communities cannot be avoided, impacts shall be mitigated on-site or offsite at a minimum ratio of 1:1 for permanently impacted sensitive communities (habitat restored for habitat lost). Temporarily impacted areas shall be restored to pre-project conditions. A Restoration Plan shall be developed by a qualified biologist and submitted to the implementing agency.</p> <p><b>BIO-2(e) Invasive Weed Prevention and Management Program.</b> Prior to start of construction for each project that occurs within or adjacent to native habitats, an Invasive Weed Prevention and Management Program shall be developed by a qualified biologist retained by the implementing agency to prevent invasion of native habitat by non-native plant species. The plan shall be submitted to the implementing agency for review and approval. A list of target species shall be included, along with measures for early detection and eradication.</p> <p>The plan, which shall be implemented by the implementing agency, shall also include, but not be limited to, the following measures to prevent the introduction of invasive weed species:</p> <ul style="list-style-type: none"> <li>▪ During construction, limit the use of imported soils for fill. If the use of imported fill material is necessary, the imported material must be obtained from a source that is known to be free of invasive plant species.</li> <li>▪ To minimize colonization of disturbed areas and the spread of invasive species, the contractor shall stockpile topsoil and redeposit the stockpiled soil after construction or transport the topsoil to a permitted landfill for disposal.</li> <li>▪ All erosion control materials, including straw bales, straw wattles, or mulch used on-site must be free of invasive species seed.</li> <li>▪ Exotic and invasive plant species shall be excluded from any erosion control seed mixes and/or landscaping plant palettes associated with the proposed project</li> <li>▪ All disturbed areas shall be hydroseeded with a mix of locally native species upon completion of work in those areas.</li> </ul>	

Impact	Mitigation Measure(s)	Impact Finding
	<p><b>BIO-2(f) Wetlands, Drainages, and Riparian Habitat Best Management Practices During Construction.</b> The following best management practices shall be required by the implementing agency for development within or adjacent to wetlands, drainages, or riparian habitat:</p> <ul style="list-style-type: none"> <li>Access routes, staging and construction areas shall be limited to the minimum area necessary to achieve the project goal and minimize impacts to other waters including locating access routes and ancillary construction areas outside of jurisdictional areas.</li> <li>To control sedimentation during and after project implementation, appropriate erosion control materials shall be deployed to minimize adverse effects on jurisdictional areas in the vicinity of the project.</li> <li>Project activities within the jurisdictional areas should occur during the dry season (typically between June 1 and November 1) in any given year, or as otherwise directed by the regulatory agencies.</li> <li>During construction, no litter or construction debris shall be placed within jurisdictional areas. All such debris and waste shall be picked up daily and properly disposed of at an appropriate site.</li> <li>Raw cement, concrete, or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic species resulting from project related activities, shall be prevented from contaminating the soil and/or entering wetlands, drainages, or riparian habitat.</li> <li>All refueling, maintenance and staging of equipment and vehicles shall occur at least 100 feet from bodies of water and in a location where a potential spill would not drain directly toward aquatic habitat (e.g., on a slope that drains away from the water source). Prior to the onset of work activities, a plan must be in place for prompt and effective response to any accidental spills.</li> </ul>	
<p><b>Impact BIO-3.</b> Implementation of transportation projects and the land use scenario envisioned by the proposed 2022 RTP/SCS would interfere substantially with wildlife movement, including fish migration, and/or impede the use of native wildlife nursery sites. This impact would be significant, and unavoidable.</p>	<p><b>BIO-3(a) Project Design for Wildlife Connectivity.</b> All projects including long segments of fencing and lighting shall be designed to minimize impacts to wildlife. Fencing or other project components shall not block wildlife movement through riparian or other natural habitat. Where fencing or other project components that may disrupt wildlife movement is required for public safety concerns, they shall be designed to permit wildlife movement by incorporating design features such as:</p> <ul style="list-style-type: none"> <li>A minimum 16 inches between the ground and the bottom of the fence to provide clearance for small animals;</li> <li>A minimum 12 inches between the top two wires, or top the fence with a wooden rail, mesh, or chain link instead of wire to prevent animals from becoming entangled; and</li> <li>If privacy fencing is required near open space areas, openings at the bottom of the fence measure at least 16 inches in diameter shall be installed at reasonable intervals to allow wildlife movement, or the fence may be installed with the bottom at least 16 inches above the ground level.</li> <li>If fencing or other project components must be designed in such a manner that wildlife passage would not be permitted, wildlife crossing structures shall be incorporated into the project design as appropriate.</li> <li>Lighting installed as part of any project shall be designed to be minimally disruptive to wildlife (see mitigation measure AES-3(a) Roadway Lighting for lighting requirements).</li> </ul>	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact Finding
	<p><b>BIO-3(b) Maintain Connectivity in Drainages.</b> No permanent structures shall be placed within any drainage or river that would impede wildlife movement (i.e., no hardened caps or other structures in the stream channel perpendicular to stream flow be left exposed or at depth with moderate to high risk for exposure as a result of natural bed scour during high flow events and thereby potentially create impediments to passage).</p> <p>In addition, upon completion of construction within any drainage, areas of stream channel and banks that are temporarily impacted shall be returned to pre-construction contours and in a condition that allows for unimpeded passage through the area once the work has been complete.</p> <p>If water is to be diverted around work sites, a diversion plan shall be submitted to KCAG and/or local jurisdiction for review and approval prior to issuance of project construction permits/approvals. The diversion shall be designed in a way as to not impede movement while the diversion is in place.</p> <p><b>BIO-3 (c) Construction Best Management Practices to Minimize Disruption to Wildlife.</b> The following construction BMPs shall be incorporated into all grading and construction plans in order to minimize temporary disruption of wildlife, which could hinder wildlife movement:</p> <ul style="list-style-type: none"> <li>▪ Designation of a 20 mile per hour speed limit in all construction areas.</li> <li>▪ Daily construction work schedules shall be limited to daylight hours only.</li> <li>▪ Mufflers shall be used on all construction equipment and vehicles shall be in good operating condition.</li> <li>▪ All trash shall be placed in sealed containers and shall be removed from the project site a minimum of once per week.</li> <li>▪ No pets are permitted on project site during construction.</li> </ul>	
<b>Impact BIO-4.</b> Implementation of transportation improvements and the land use scenario envisioned by the proposed 2022 RTP/SCS would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy. This impact would be less than significant.	None required.	Less than Significant
<b>Impact BIO-5.</b> Implementation of transportation projects and the land use scenario envisioned by the 2022 RTP/SCS would not conflict with the provisions of an	None required.	No Impact



Impact	Mitigation Measure(s)	Impact Finding
adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. There would be no impact.		
<b>Cultural Resources</b>		
<b>Impact CR-1.</b> Transportation improvement projects and the land use scenario envisioned by the proposed 2022 RTP/SCS would cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5. This impact would be significant and unavoidable.	<p><b>CR-1 Built Environment Historical Resources.</b> Prior to the issuance of an individual project permit, the implementing agency of a 2022 RTP/SCS project involving a building or structure over 45 years of age shall prepare a map defining the project area. This map shall indicate the areas of disturbance associated with construction and operation of the facility and will help in determining whether known and potential historical resources are located within the project area. If a structure greater than 45 years in age is within the identified impact zone, a survey and evaluation of the structure(s) to determine their eligibility for recognition under State, federal, or local historic resource designation criteria shall be conducted. The evaluation shall be prepared by an architectural historian or historical architect meeting the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, Professional Qualification Standards (PQS) as defined in 36 CFR Part 61. All buildings and structures 45 years of age or older within the project area shall be evaluated in their historic context and documented in a report meeting the OHP guidelines. All evaluated properties shall be documented on Department of Parks and Recreation Series 523 Forms. The report shall be submitted to the implementing agency for review and concurrence.</p> <p>If historical resources are identified within the project area of a proposed development, efforts shall be made to the extent feasible to ensure that impacts are mitigated. Application of mitigation shall generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the implementing agency for review.</p> <p>Efforts shall be made to the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the <i>Secretary of the Interior's Standards for the Treatments of Historic Properties</i> (Standards). In accordance with CEQA, a project that has been determined to conform with the Standards generally would not cause a significant adverse direct or indirect impact to historical resources (14 CCR § 15126.4(b)(1)). Application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the implementing agency for review and concurrence.</p> <p>If significant historical resources are identified on a development site and compliance with the Standards and/or avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. Mitigation measures may include documentation of the historical resource in the form of a Historic American Building</p>	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
<p><b>Impact CR-2.</b> Construction activity associated with transportation improvement projects and the land use scenario envisioned by the proposed 2022 RTP/SCS may cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5. Potential impacts to archaeological resources would be significant and unavoidable.</p>	<p>Survey-Like report. The report shall comply with the Secretary of the Interior’s Standards for Architectural and Engineering Documentation and shall generally follow the HABS Level III requirements, including digital photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the PQS and submitted to the implementing agency prior to issuance of any permits for demolition or alteration of the historical resource. Copies of the report shall be provided to a local library and/or other appropriate repositories.</p> <p><b>CR-2(a) Archaeological Resources Impact Minimization.</b> Before construction activities, implementing agencies shall, or can and should, retain a qualified archaeologist to conduct a record search at the Southern San Joaquin Valley Information Center to determine whether the project area has been previously surveyed and whether resources were identified. When recommended by the Information Center, implementing agencies shall, or can and should, retain a qualified archaeologist to conduct archaeological surveys before construction activities. Implementing agencies shall, or can and should, follow recommendations identified in the survey, which may include, but would not be limited to: subsurface testing, designing and implementing a Worker Environmental Awareness Program (WEAP), construction monitoring by a qualified archaeologist, or avoidance of sites and preservation in place. Recommended mitigation measures will be consistent with State CEQA Guidelines Section 15126.4(b)(3) recommendations and may include but not be limited to preservation in place and/or data recovery. All cultural resources work shall follow accepted professional standards in recording any find including submittal of standard Department of Parks and Recreation (DPR) Primary Record forms (Form DPR 523) and location information to the appropriate California Historical Resources Information System office for the project area.</p> <p><b>CR-2(b) Unanticipated Discoveries During Construction.</b> During construction activities, implementing agencies shall, or can and should, implement the following measures. If evidence of any prehistoric or historic-era subsurface archaeological features, deposits are discovered during construction-related earthmoving activities (e.g., ceramic shard, trash scatters, lithic scatters), all ground-disturbing activity proximate to the discovery shall be halted until a qualified archaeologist (36 CFR Section 61) can assess the significance of the find. If the find is a prehistoric archaeological site, the appropriate Native American group shall be notified. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the archaeologist determines that further information is needed to evaluate significance, a testing plan shall be prepared and implemented. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall work with the implementing agency to avoid disturbance to the resources, and if complete avoidance is not feasible in light of project design, economics, logistics and other factors, shall recommend additional measures such as the preparation and implementation of a data recovery plan. All cultural resources work shall follow accepted professional standards in recording any find including submittal of standard DPR Primary Record forms (DPR 523a) and location information to the appropriate California Historical Resources Information System office for the project area. If the find is a Native American archaeological site, the culturally affiliated California Native American tribe shall be notified and afforded the opportunity to monitor mitigative treatment. During evaluation or mitigative treatment, ground disturbance and construction work could continue in other parts of the project area that are distant enough from the find not to impact it, as determined by the qualified archaeologist.</p>	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact Finding
<b>Impact CR-3.</b> Construction activity associated with transportation improvement projects and the land use scenario envisioned by the 2022 RTP/SCS could result in disturbances to human remains including those interred outside of formal cemeteries. Potential impacts to human remains would be less than significant.	None required.	Less than Significant
<b>Energy</b>		
<b>Impact E-1.</b> Future transportation improvement projects and implementation of the land use scenario envisioned by the proposed 2022 RTP/SCS would not result in significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. This impact would be less than significant.	None required.	Less than Significant
<b>Impact E-2.</b> The proposed 2022 RTP/SCS would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This impact would be less than significant.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Impact Finding
<b>Geology and Soils</b>		
<b>Impact GEO-1.</b> The transportation improvements and land use projects envisioned by the proposed 2022 RTP/SCS would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides. Impacts would be less than significant.	None required.	Less than Significant
<b>Impact GEO-2.</b> The proposed transportation improvements and land use projects envisioned by the proposed 2022 RTP/SCS would not result in substantial soil erosion or the loss of topsoil. Impacts would be less than significant.	None required.	Less than Significant
<b>Impact GEO-3.</b> Implementation of transportation improvements and future projects included in the land use scenario envisioned in the proposed 2022 RTP/SCS could be located on potentially unstable soils, in areas of lateral spreading, subsidence, or high liquefaction potential, or areas	None required.	Less than Significant

Impact	Mitigation Measure(s)	Impact Finding
of expansive soil. Impacts would be Less than significant.		
<p><b>Impact GEO-4.</b> Implementation of the proposed transportation improvements and the land use scenario envisioned by 2022 RTP/SCS could cause a substantial adverse change in or disturb known and unknown paleontological resources as defined in CEQA guidelines section 15064.5. Impacts to paleontological resources would be significant and unavoidable.</p>	<p><b>GEO-4 Paleontological Resources Impact Minimization.</b> Prior to any ground disturbance, the implementing agency of a 2022 RTP/SCS project involving ground disturbing activities (including grading, trenching, foundation work and other excavations) within intact (previously undisturbed) deposits shall retain a qualified paleontologist, defined as a paleontologist who meets the SVP standards for Qualified Professional Paleontologist (SVP 2010), to conduct a Paleontological Resources Assessment (PRA). The PRA shall determine the age and paleontological sensitivity of geologic formations underlying the proposed disturbance area, consistent with SVP Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (SVP 2010) guidelines for categorizing paleontological sensitivity of geologic units within a project area. If underlying formations are found to have a high potential (sensitivity) for paleontological resources, the following measures shall apply:</p> <ul style="list-style-type: none"> <li>▪ <b>Avoidance.</b> Avoid routes and project designs that would permanently alter unique paleontological and geological features. If avoidance practices cannot be implemented, the following measures shall apply.</li> <li>▪ <b>Paleontological Mitigation and Monitoring Program.</b> A qualified paleontologist shall prepare a Paleontological Mitigation and Monitoring Program to be implemented during ground disturbance activity. This program shall outline the procedures for construction staff Worker Environmental Awareness Program (WEAP) training, paleontological monitoring extent and duration (i.e., in what locations and at what depths paleontological monitoring shall be required), salvage and preparation of fossils, the final mitigation and monitoring report and paleontological staff qualifications.</li> <li>▪ <b>Paleontological Worker Environmental Awareness Program (WEAP).</b> Prior to the start of ground disturbance activity greater than two feet below existing grade, construction personnel shall be informed on the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff.</li> <li>▪ <b>Paleontological Monitoring.</b> Ground disturbing activity with the potential to disturbed geologic units with high paleontological sensitivity shall be monitored on a full-time basis by a qualified paleontological monitor. Should no fossils be observed during the first 50 percent of such excavations, paleontological monitoring could be reduced to weekly spot-checking under the discretion of the qualified paleontologist. Monitoring shall be conducted by a qualified paleontological monitor, who is defined as an individual who has experience with collection and salvage of paleontological resources.</li> <li>▪ <b>Salvage of Fossils.</b> If fossils are discovered, the implementing agency shall be notified immediately, and the qualified paleontologist (or paleontological monitor) shall recover them. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case, the paleontologist should have the authority to temporarily direct, divert or halt construction activity to ensure that the fossil(s) can be removed in a safe and timely manner.</li> <li>▪ <b>Preparation and Curation of Recovered Fossils.</b> Once salvaged, fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition and curated in a scientific institution with a permanent paleontological collection, along with all pertinent field notes, photos, data and maps.</li> </ul>	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	<ul style="list-style-type: none"> <li>▪ <b>Final Paleontological Mitigation and Monitoring Report.</b> Upon completion of ground disturbing activity (and curation of fossils if necessary) the qualified paleontologist shall prepare a final mitigation and monitoring report outlining the results of the mitigation and monitoring program. The report shall include discussion of the location, duration and methods of the monitoring, stratigraphic sections, any recovered fossils, and the scientific significance of those fossils, and where fossils were curated. The report shall be submitted to the sponsor agency. If the monitoring efforts produced fossils, then a copy of the report shall also be submitted to the designated museum repository</li> </ul>	
<b>Greenhouse Gas Emissions and Climate Change</b>		
<b>Impact GHG-1.</b> Construction of the transportation improvements and land use projects envisioned by the proposed 2022 RTP/SCS would generate GHG emissions that may have a significant impact on the environment. Impacts would be significant and unavoidable.	<p><b>GHG-1 Construction GHG Reduction Measures.</b> The project sponsor shall incorporate the most recent GHG emission reduction measures for off-road construction vehicles during construction. The measures shall be noted on all construction plans, and the implementing agency shall perform periodic site inspections. Current GHG-reducing measures include the following:</p> <ul style="list-style-type: none"> <li>▪ Use of diesel construction equipment meeting CARB's Tier 4 certified engines wherever feasible for off-road heavy-duty diesel engines and comply with the State Off-Road Regulation. Where the use of Tier 4 engines is not feasible, Tier 3 certified engines shall be used; where the use of Tier 3 engines are not feasible, Tier 2 certified engines shall be used;</li> <li>▪ Use of on-road heavy-duty trucks that meet CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation;</li> <li>▪ Minimizing idling time (e.g., five-minute maximum). Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the five-minute idling limit;</li> <li>▪ Use of electric-powered equipment in place of diesel-powered equipment when feasible;</li> <li>▪ Use of alternatively fueled or catalyst-equipped diesel construction equipment when feasible, to the extent electric powered equipment is not feasible;</li> <li>▪ Substitute gasoline-powered in place of diesel-powered equipment, when neither electric-powered equipment or alternatively fueled or catalyst-equipped diesel equipment is feasible; and</li> <li>▪ Incentives for construction workers to carpool and/or use electric vehicles to commute to and from the project site.</li> </ul>	Significant and Unavoidable
<b>Impact GHG-2.</b> Proposed transportation improvements and land use projects envisioned by the proposed 2022 RTP/SCS would result in a net increase in GHG emissions by 2046 compared to the existing baseline conditions and would therefore have a	<p><b>GHG-2 Land Use Project Energy Consumption and Water Use Reduction Measures.</b> For land use projects under their jurisdiction, cities and the County can and should implement measures to reduce energy consumption, water use, solid waste generation, and VMT, all of which contribute to GHG emissions. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions. These measures include, but are not limited to:</p> <ul style="list-style-type: none"> <li>▪ Require new residential and commercial construction to install solar energy systems or be solar-ready</li> <li>▪ Require new residential and commercial development to install low flow water fixtures</li> </ul>	Significant and unavoidable

Impact	Mitigation Measure(s)	Impact Finding
significant impact on the environment. Impacts would be significant and unavoidable.	<ul style="list-style-type: none"> <li>Require new residential and commercial development to install water-efficient drought-tolerant landscaping, including the use of compost and mulch</li> <li>Require new development to exceed the applicable Title 24 energy-efficiency requirements</li> <li>Require new development to be fully electric</li> <li>Require new residential and commercial development to offer information on recycling, composting, and disposal of household hazardous waste and e-waste</li> <li>Require new development to implement circulation design elements in parking lots for no-residential uses to reduce vehicle queuing and improve the pedestrian environment</li> </ul>	
<b>Impact GHG-3.</b> The transportation improvements and land use projects envisioned by the proposed 2022 RTP/SCS would not conflict with regional SB 375 per capita passenger vehicle CO <sub>2</sub> emission reduction targets of 16 percent by 2035 from 2005 levels. Impacts would be less than significant.	None required.	Less than Significant
<b>Impact GHG-4.</b> Implementation of the proposed 2022 RTP/SCS would conflict with the State's ability to achieve SB 32, EOs S-3-05 and B-55-18, and applicable local GHG reduction plan targets and goals. Impacts would be significant and unavoidable.	<p><b>GHG-4(a) Transportation-Related GHG Reduction Measures.</b> The implementing agency shall incorporate the most recent GHG emission reduction measures and/or technologies for reducing VMT and associated transportation related GHG emissions. Current GHG-reducing measures include the following:</p> <ul style="list-style-type: none"> <li>Installation of electric vehicle charging stations beyond those required by State and local codes</li> <li>Utilization of electric vehicles and/or alternatively fueled vehicles in company fleet</li> <li>Provision of dedicated parking for carpools, vanpool, and clean air vehicles</li> <li>Provision of vanpool and/or shuttle service for employees</li> <li>Implementation of reduced parking minimum requirements</li> <li>Implementation of maximum parking limits</li> <li>Provision of bicycle parking facilities beyond those required by State and local codes</li> <li>Provision of a bicycle-share program</li> <li>Expansion of bicycle routes/lanes along the project site frontage</li> <li>Provision of new or improved transit amenities (e.g., covered turnouts, bicycle racks, covered benches, signage, lighting) if project site is located along an existing transit route</li> <li>Expansion of existing transit routes</li> <li>Provision of transit subsidies</li> </ul>	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	<ul style="list-style-type: none"> <li>Expansion of sidewalk infrastructure along the project site frontage</li> <li>Provision of safe, pedestrian-friendly, and interconnected sidewalks and streetscapes</li> <li>Provision of employee lockers and showers</li> <li>Provision of on-site services that reduce the need for off-site travel (e.g., childcare facilities, automatic teller machines, postal machines, food services)</li> <li>Provision of alternative work schedule options, such as telework or reduced schedule (e.g., 9/80 or 10/40 schedules), for employees</li> <li>Implementation of transportation demand management programs to educate and incentivize residents and/or employees to use transit, smart commute, and alternative transportation options</li> </ul>	
<b>Hazards and Hazardous Materials</b>		
<b>Impact HAZ-1.</b> Transportation improvement projects and the land use scenario envisioned by the 2022 RTP/SCS may facilitate the routine transport, use, or disposal of hazardous material, and may result in reasonably foreseeable upset and accident conditions. Mandatory compliance with existing regulations and programs would minimize the risk associated with these activities or accident conditions. Impacts would be less than significant.	None required.	Less than Significant
<b>Impact HAZ-2.</b> Transportation improvement projects and the land use scenario envisioned by the 2022 RTP/SCS would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing	None required.	Less than Significant



Impact	Mitigation Measure(s)	Impact Finding
or proposed school. Impacts would be less than significant.		
<b>Impact HAZ-3.</b> The 2022 RTP/SCS transportation improvement projects and a land use scenario that could occur on previously unknown hazardous material sites or sites on the list compiled by Government Code Section 65962.5, and therefore create a significant hazard to the public or environment. This impact would be significant and unavoidable.	<p><b>HAZ-3 Site Remediation.</b> If an individual project included in the proposed 2022 RTP/SCS is located on or near hazardous materials and/or waste site pursuant to Government Code Section 65962.5, the implementing agency shall prepare a Phase I ESA in accordance with the American Society for Testing and Materials' E-1527-05 standard. For work requiring any demolition or renovation, the Phase I ESA shall make recommendations for any hazardous building materials survey work that shall be done. All recommendations included in a Phase I ESA prepared for a site shall be implemented. If a Phase I ESA indicates the presence or likely presence of contamination, the implementing agency shall require a Phase II ESA, and recommendations of the Phase II ESA shall be fully implemented. Examples of typical recommendations provided in Phase I/II ESAs include removal of contaminated soil in accordance with a soil management plan approved by the local environmental health department; covering stockpiles of contaminated soil to prevent fugitive dust emissions; capturing groundwater encountered during construction in a holding tank for additional testing and characterization and disposal based on its characterization; and development of a health and safety plan for construction workers.</p> <p>For any project located on or near sites that are not listed and do not have the potential for residual hazardous materials as a result of historic land uses, no action is required unless unknown hazards are discovered during development. In that case, the implementing agency shall discontinue development until DTSC, RWQCB, SJVAPCD, and/or other responsible agency issues a determination, which would likely require a Phase I ESA as part of the assessment.</p>	Significant and Unavoidable
<b>Impact HAZ-4.</b> Transportation improvement projects and land use scenario envisioned by the 2022 RTP/SCS located within an airport land use plan or within two miles of a public or public use airport would not result in a safety hazard or excessive noise for people residing or working in the project area. Impacts would be less than significant.	None required.	Less than Significant
<b>Hydrology and Water Quality</b>		
<b>Impact HYD-1.</b> Transportation projects the land use scenario envisioned in the proposed 2022 RTP/SCS would not violate water quality standards	None required.	Less than Significant

Impact	Mitigation Measure(s)	Impact Finding
<p>or waste discharge requirements, or otherwise substantially degrade surface or ground water quality. Impacts would be less than significant.</p>		
<p><b>Impact HYD-2.</b> Transportation projects the land use scenario envisioned in the proposed 2022 RTP/SCS would substantially decrease groundwater supplies, and interfere with groundwater recharge such that it may impede sustainable groundwater management of the basins. Impacts would be significant and unavoidable.</p>	<p><b>HYD-2(a) Construction Dust Suppression Water Supply.</b> For all proposed 2022 RTP/SCS projects, where feasible, implementing agencies shall use reclaimed and/or recycled water for dust suppression during construction activities. This includes use of such reclaimed water in water trucks utilized for project construction occurring outside developed areas and away from water infrastructure which would otherwise provide such reclaimed water. This measure shall be noted on construction plans and shall be spot checked by the local jurisdiction.</p> <p><b>HYD-2(b) Landscape Watering.</b> In jurisdictions that do not already have an appropriate local regulatory program related to landscape watering, implementing agencies shall design proposed 2022 RTP/SCS projects that include landscaping shall be designed with drought tolerant plants and drip irrigation. When feasible, native plant species shall be used. In addition, landscaping associated with proposed improvements shall be maintained using reclaimed water when feasible. If reclaimed water could feasibly be utilized for project landscape watering due to proximity of reclaimed water sources but is unavailable due to lack of connecting infrastructure, implementing agencies shall conduct an analysis of the upgrades needed to provide such infrastructure, which will include the potential for new connections to existing reclaimed water systems to provide reclaimed water to other nearby sources besides the proposed project in the analysis, and shall perform such steps as necessary to utilize available reclaimed water if feasible.</p>	<p>Significant and Unavoidable</p>
<p><b>Impact HYD-3.</b> Transportation projects the land use scenario envisioned in the proposed 2022 RTP/SCS would not substantially alter the existing drainage pattern of a site or area through alteration of the course of a stream or river or through the addition of impervious surfaces in a manner where drainage changes would result in flooding on- or off-site, redirect or impede flood flows, exceed the capacity of stormwater systems, or provide additional polluted</p>	<p>None required.</p>	<p>Less than Significant</p>

Impact	Mitigation Measure(s)	Impact Finding
runoff. Impacts would be less than significant.		
<b>Impact HYD-4.</b> Transportation projects the land use scenario envisioned in the proposed 2022 RTP/SCS would not risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones. Impacts would be less than significant.	None required.	Less than significant
<b>Impact HYD-5.</b> Transportation projects the land use scenario envisioned in the proposed 2022 RTP/SCS would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plans. Impacts would be significant and unavoidable.	Mitigation Measures HYD-2(a) and HYD-2(b) are required.	Significant and Unavoidable.
<b>Land Use &amp; Planning</b>		
<b>Impact LU-1.</b> Proposed transportation improvements and the land use scenario envisioned by the proposed 2022 RTP/SCS would not physically divide an established community. This impact would be less than significant.	None required.	Less than Significant
<b>Impact LU-2.</b> Proposed transportation improvements and the land use scenario envisioned by the proposed 2022 RTP/SCS would not cause a significant environmental	Mitigation measures are provided for applicable resources throughout their respective environmental issue area sections of the EIR to reduce impacts. No additional mitigation is required for this impact.	Less than Significant

Impact	Mitigation Measure(s)	Impact Finding
<p>impact due to a conflict with any land use plan, policy, or regulation (including, but not limited to, the General Plan or Zoning Ordinance) and result in a physical change to the environment not already addressed in the other resource chapters of this EIR. This impact would be less than significant.</p>		
<b>Noise</b>		
<p><b>Impact N-1.</b> Construction activity associated with transportation improvements and land use projects envisioned by the proposed 2022 RTP/SCS would generate a substantial temporary increase in ambient noise levels in excess of standards established in local general plans or noise ordinances and would generate a substantial absolute noise increase over existing noise levels. This impact would be significant and unavoidable.</p>	<p><b>N-1 Construction Noise Reduction.</b> To reduce construction noise levels to achieve applicable standards, implementing agencies for transportation and land use projects shall implement the measures identified below where feasible.</p> <ul style="list-style-type: none"> <li>a. <b>Compliance with local Construction Noise Regulations.</b> Implementing agencies shall ensure that, where residences or other noise sensitive uses are located within 800 feet of construction sites without pile driving, appropriate measures shall be implemented to ensure consistency with local noise ordinance requirements relating to construction. Specific techniques may include, but are not limited to, restrictions on construction timing, use of sound blankets on construction equipment, and the use of temporary walls and noise barriers to block and deflect noise.</li> <li>b. <b>Noise Complaint and Enforcement Manager.</b> Designate an on-site construction complaint and enforcement manager for projects within 800 feet of sensitive receivers. Implementing agencies shall post phone numbers for the on-site enforcement manager at construction sites along with complaint procedures and who to notify in the event of a problem.</li> <li>c. <b>Pile Driving.</b> For any project within 3,200 feet of sensitive receptors that requires pilings, the implementing agency shall require caisson drilling or sonic pile driving as opposed to pile driving, where feasible. This shall be accomplished through the placement of conditions on the project during its individual environmental review.</li> <li>d. <b>Construction Equipment Noise Control.</b> Implementing agencies shall ensure that equipment and trucks used for project construction utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds).</li> <li>e. <b>Impact Equipment Noise Control.</b> Implementing agencies shall ensure that impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction be hydraulically or electrically powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, use of an exhaust muffler on the compressed air exhaust can lower noise levels from the exhaust by up to about 10 dBA. When feasible, external jackets on the impact equipment can</li> </ul>	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact Finding
	<p>achieve a reduction of 5 dBA. Whenever feasible, use quieter procedures, such as drilling rather than impact equipment operation.</p> <p>f. <b>Construction Activity Timing Restrictions.</b> Except where timing restrictions are already established in local codes or policies, construction activities shall be limited to:</p> <ul style="list-style-type: none"> <li>▪ Monday through Friday: 7 a.m. to 6 p.m.</li> <li>▪ Saturday: 9 a.m. to 5 p.m.</li> </ul> <p>g. <b>Placement of Stationary Noise Sources.</b> Locate stationary noise sources as far from noise-sensitive receptors as possible. Stationary noise sources that must be located near existing receptors will be equipped with the best available mufflers.</p>	
<p><b>Impact N-2.</b> Proposed transportation improvements envisioned by the proposed 2022 RTP/SCS would generate a substantial permanent increase in ambient noise levels in excess of standards or over existing noise levels and generate a substantial absolute noise increase over existing noise levels. This impact would be significant and unavoidable.</p>	<p><b>N-2 Noise Assessment and Control for Mobile and Point Source Reduction.</b> Implementing agencies for 2022 RTP/SCS projects shall complete detailed noise assessments using applicable guidelines (e.g., Caltrans Traffic Noise Analysis Protocol) for roadway projects that may impact noise sensitive receptors. The implementing agency shall ensure that a noise survey is conducted that, at minimum:</p> <ul style="list-style-type: none"> <li>▪ Determines existing and projected noise levels</li> <li>▪ Determines the amount of attenuation needed to reduce potential noise impacts to applicable State and local standards</li> <li>▪ Identifies potential alternate alignments that allow greater distance from, or greater buffering of, noise-sensitive areas</li> <li>▪ If warranted, recommends methods for mitigating noise impacts, including: <ul style="list-style-type: none"> <li>▫ Appropriate setbacks</li> <li>▫ Sound attenuating building design, including retrofit of existing structures with sound attenuating building materials</li> <li>▫ Use of sound barriers (earthen berms, sound walls, or some combination of the two)</li> <li>▫ Locate transit-related passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations away from sensitive receptors to the maximum extent feasible.</li> </ul> </li> </ul> <p>Where new or expanded transportation projects are found to expose receptors to noise exceeding normally acceptable levels, the individual project lead agency shall implement techniques as recommended in the project-specific noise assessments. The preferred methods for mitigating noise impacts shall include the use of appropriate setbacks and sound attenuating building design, including retrofit of existing structures with sound attenuating building materials where feasible. In instances where use of these techniques is not feasible, the use of sound barriers (earthen berms, sound walls, or some combination of the two) shall be considered. Long expanses of walls or fences may be interrupted with offsets and provided with accents to prevent monotony. Landscape pockets and pedestrian access through walls may be provided. Whenever possible, a combination of elements shall be used, including open grade paving, solid fences, walls, and landscaped berms. Other techniques such as rubberized asphalt or “quiet pavement” shall be used where feasible to reduce road noise for new roadway segments or modifications requiring</p>	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact Finding																							
	repaving. The effectiveness of noise reduction measures shall be monitored by taking noise measurements and installing adaptive mitigation measures to achieve applicable standards.																								
<b>Impact N-3.</b> Construction activities associated with transportation projects and land use projects would generate excessive groundborne vibration levels. New truck, bus, and train traffic resulting from the 2022 RTP/SCS would generate excessive vibration levels. These impacts would be significant and unavoidable.	<p><b>N-3(a) Vibration Mitigation for Construction of Transportation Projects.</b> Where local vibration and groundborne noise standards do not apply, implementing agencies of proposed 2022 RTP/SCS projects utilizing heavy construction equipment shall estimate vibration levels generated by construction activities and use the Caltrans vibration damage potential threshold criteria to screen for and screen out projects as to their potential to damage buildings on site or near a project.</p> <p><b>Caltrans Vibration Damage Potential Threshold Criteria</b></p> <table> <tr> <th rowspan="2">Structure and Condition</th><th colspan="2">Maximum PPV (in/sec)</th></tr> <tr> <th>Transient Sources</th><th>Continuous/ Frequent Intermittent Sources</th></tr> <tr> <td>Extremely fragile historic buildings</td><td>0.12</td><td>0.08</td></tr> <tr> <td>Fragile buildings</td><td>0.20</td><td>0.10</td></tr> <tr> <td>Historic and some old buildings</td><td>0.50</td><td>0.25</td></tr> <tr> <td>Older Residential structures</td><td>0.50</td><td>0.30</td></tr> <tr> <td>New residential structures</td><td>1.00</td><td>0.50</td></tr> <tr> <td>Modern industrial structures</td><td>2.00</td><td>0.50</td></tr> </table> <p>Source: Transportation and Construction Vibration Guidance Manual (2020b)</p> <p>If construction equipment would generate vibration levels exceeding acceptable levels as established by Caltrans, implementing agencies shall, or can and should, complete the following tasks:</p> <ul style="list-style-type: none"> <li>▪ Prior to construction, survey the project site for vulnerable buildings, and complete geotechnical testing (preconstruction assessment of the existing subsurface conditions and structural integrity), for any older or historic buildings within 50 feet of pile driving. The testing shall be completed by a qualified geotechnical engineer and qualified historic preservation professional and/or structural engineer.</li> <li>▪ Prepare and submit a report to the lead agency that contains the results of the geological testing. If recommended by the preconstruction report implementing agencies shall require ground vibration monitoring of nearby historic structures. Methods and technologies shall be based on the specific conditions at the construction site. The preconstruction assessment shall include a monitoring program to detect ground settlement or lateral movement of structures in the vicinity of pile-driving activities and identify corrective measures to be taken should monitored vibration levels indicate the potential for building damage. In the event of unacceptable ground movement with the potential to cause structural damage, all impact work shall cease, and corrective measures shall be implemented to minimize the risk to the subject, or adjacent, historic structure.</li> <li>▪ To minimize disturbance withing 550 feet of pile-driving activities, implement “quiet” pile-driving technology, such as predrilling of piles and the use of more than one pile driver to shorten the duration of pile driving), where</li> </ul>	Structure and Condition	Maximum PPV (in/sec)		Transient Sources	Continuous/ Frequent Intermittent Sources	Extremely fragile historic buildings	0.12	0.08	Fragile buildings	0.20	0.10	Historic and some old buildings	0.50	0.25	Older Residential structures	0.50	0.30	New residential structures	1.00	0.50	Modern industrial structures	2.00	0.50	Significant and Unavoidable
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Modern industrial structures	2.00	0.50																							

Impact	Mitigation Measure(s)	Impact Finding
	<p>feasible, in consideration of geotechnical and structural requirements and conditions as defined as part of the geotechnical testing, if testing was feasible.</p> <ul style="list-style-type: none"> <li>▪ Use cushion blocks to dampen noise from pile driving.</li> <li>▪ Phase operations of construction equipment to avoid simultaneous vibration sources</li> </ul> <p><b>N-3(b) Vibration Mitigation for Operation of Transportation Projects.</b> Where local vibration and groundborne noise standards do not apply, implementing agencies of 2022 RTP/SCS projects shall comply with all applicable local vibration and groundborne noise standards, or in the absence of such local standards, comply with guidance provided by the FTA in Transit Noise and Vibration Impact Assessment (FTA 2018) to assess impacts to buildings and sensitive receptors and reduce vibration and groundborne noise. FTA recommended thresholds shall be used except in areas where local standards for groundborne noise and vibration have been established. Methods that can be implemented to reduce vibration and groundborne noise impacts include, but are not limited to:</p> <ul style="list-style-type: none"> <li>▪ Rail Traffic <ul style="list-style-type: none"> <li>▫ Maximizing the distance between tracks and sensitive uses</li> <li>▫ Conducting rail grinding on a regular basis to keep tracks smooth</li> <li>▫ Conducting wheel truing to re-contour wheels to provide a smooth-running surface and removing wheel flats</li> <li>▫ Providing special track support systems such as floating slabs, resiliently supported ties, high-resilience fasteners and ballast mats;</li> <li>▫ Implementing operational changes such as limiting train speed and reducing nighttime operations.</li> </ul> </li> <li>▪ Bus and Truck Traffic <ul style="list-style-type: none"> <li>▫ Constructing of noise barriers</li> <li>▫ Use noise reducing tires and wheel construction on bus wheels</li> <li>▫ Use vehicle skirts (i.e., a partial enclosure around each wheel with absorptive treatment) on freight vehicle wheels</li> </ul> </li> </ul>	
<p><b>Impact N-4.</b> Land use projects envisioned by the 2022 RTP/SCS may place sensitive receptors in areas with noise levels in excess of standards established in the local general plan or noise ordinance. This impact would be significant and unavoidable.</p>	<p><b>N-4 Noise Mitigation for Land Uses.</b> If a land use project is located in an area with exterior ambient noise levels above local noise standards, the implementing agency shall ensure that a noise study is conducted to determine the existing exterior noise levels in the vicinity of the project. If the project would be impacted by ambient noise levels, feasible attenuation measures shall be used to reduce operational noise to meet acceptable standards. In addition, noise insulation techniques shall be utilized to reduce indoor noise levels to thresholds set in applicable State and/or local standards. Such measures may include but are not limited to: dual-paned windows, solid core exterior doors with perimeter weather stripping, air conditioning system so that windows and doors may remain closed, and situating exterior doors away from roads. The noise study and determination of appropriate mitigation measures shall be completed during the project's individual environmental review.</p>	<p>Significant and Unavoidable</p>
<p><b>Impact N-5.</b> Transportation improvements and land use projects envisioned by the</p>	<p><b>N-5 Noise Mitigation Near Airports.</b> Implementing agencies for all new development proposed to be located within an existing airport influence zone, as defined by the locally adopted ALUCP or local general plan, or within two miles of a private use airport, shall require a site specific noise compatibility study. The study shall consider and evaluate</p>	<p>Significant and Unavoidable</p>

Impact	Mitigation Measure(s)	Impact Finding
proposed 2022 RTP/SCS would be located in close proximity to existing airports such that applicable exterior and interior noise thresholds would be exceeded. Impacts would be significant and unavoidable.	existing aircraft noise, based on specific aircraft activity data for the airport in question, and shall include recommendations for site design and building construction. Such measures may include but are not limited to: dual-paned windows, solid core exterior doors with perimeter weather stripping, air conditioning system so that windows and doors may remain closed, and situating exterior doors away from roads, such as dual paned windows. The noise study and determination of appropriate mitigation measures shall be completed during the project's individual environmental review.	
<b>Transportation</b>		
<b>Impact T-1.</b> Transportation projects and land use projects envisioned by the proposed 2022 RTP/SCS would not conflict with any program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. This impact would be less than significant.	None required.	Less than Significant
<b>Impact T-2.</b> The proposed 2022 would result in an overall increase in regional VMT above baseline (2020) conditions. The proposed 2022 RTP/SCS would result in an increase in VMT per capita above baseline (2020) conditions. Regional VMT and VMT per capita impacts from implementation of the proposed 2022 RTP/SCS would be significant and unavoidable. The induced travel impact at the regional level would be less than significant.	<p><b>T-2(a) Regional VMT Reduction Programs.</b> Implementing agencies shall require implementation of VMT reduction strategies through TDM programs, impact fee programs, mitigation banks or exchange programs, in-lieu fee programs, and other land use project conditions that reduce VMT. Programs shall be designed to reduce VMT from existing land uses, where feasible, and from new discretionary residential or employment land use projects. The design of programs and project specific mitigation shall focus on VMT reduction strategies that increase travel choices and improve the comfort and convenience of sharing rides in private vehicles, using public transit, biking, or walking. Modifications may include but are not limited to:</p> <ul style="list-style-type: none"> <li>▪ Provide car-sharing, vanpool, bike sharing, and ride-sharing programs</li> <li>▪ Implement or provide access to commute reduction programs</li> <li>▪ Improve pedestrian or bicycle networks, or transit service</li> <li>▪ Provide transit passes</li> <li>▪ Encourage telecommute programs</li> <li>▪ Incorporate affordable housing into the project</li> <li>▪ Increase density</li> <li>▪ Increase mixed uses within the project area</li> <li>▪ Incorporate improved pedestrian connections within the project/neighborhood</li> </ul>	Significant and Unavoidable



Impact	Mitigation Measure(s)	Impact Finding
	<ul style="list-style-type: none"> <li>▪ Incentivize development in low VMT communities</li> <li>▪ Incentivize housing near commercial and offices</li> <li>▪ Increase access to goods and services, such as groceries, schools, and daycare</li> <li>▪ Incorporate neighborhood electric vehicle network</li> <li>▪ Orient the project toward transit, bicycle, and pedestrian facilities</li> <li>▪ Provide traffic calming</li> <li>▪ Provide bicycle parking</li> <li>▪ Limit parking</li> <li>▪ Provide incentives to purchase electric vehicles</li> <li>▪ Construct intelligent transportation system management/intelligent transportation system (TSM/ITS) measures such as ramp metering, signalization of intersections, and changeable message signs</li> <li>▪ Provide a VMT mitigation bank or exchange program</li> </ul>	
<b>Impact T-3.</b> Proposed transportation and land use projects implementing the proposed 2022 RTP/SCS would not substantially increase hazards due to geometric design features or incompatible uses. This impact would be less than significant.	None required.	Less than Significant
<b>Impact T-4.</b> Transportation and land use projects implementing the proposed 2022 RTP/SCS would not result in inadequate emergency vehicle access or interfere with an adopted emergency response plan or emergency evacuation plan. This impact would be less than significant.	None required.	Less than Significant
<b>Tribal Cultural Resources</b>		
<b>Impact TCR-1.</b> Transportation projects and the land use scenario envisioned in the	<b>TCR-1(a) Identified Tribal Cultural Resources Impact Minimization.</b> Transportation project sponsor agencies shall comply with AB 52, which may require formal Tribal consultation. If the implementing agency determines that a project may cause a substantial adverse change to a Tribal cultural resource, they shall implement mitigation	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
proposed 2022 RTP/SCS has the potential to impact tribal cultural resources. Impacts would be significant and unavoidable.	<p>measures identified in the consultation process required under Public Resources Code (PRC) Section 21080.3.2, or shall implement the following measures where feasible to avoid or minimize the project-specific significant adverse impacts:</p> <ul style="list-style-type: none"> <li>▪ Avoidance and preservation of the resources in place, including, but not limited to: designing and building the project to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space to incorporate the resources with culturally appropriate protection and management criteria.</li> <li>▪ 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: <ul style="list-style-type: none"> <li>▫ Protecting the cultural character and integrity of the resource</li> <li>▫ Protecting the traditional use of the resource</li> <li>▫ Protecting the confidentiality of the resource</li> </ul> </li> <li>▪ Establishment of permanent conservation easements or other culturally appropriate property management criteria for the purposes of preserving or utilizing the resources or places.</li> <li>▪ Native American monitoring by the appropriate tribe during soil disturbance for all projects in areas identified as sensitive for potential Tribal cultural resources and/or in the vicinity (within 100 feet) of known tribal cultural resources.</li> </ul>	
<b>Wildfire</b>		
<b>Impact WF-1.</b> Proposed transportation improvements and land use projects envisioned by the proposed 2022 RTP/SCS would be located in or near an SRA or very high fire hazard severity zone, and significant risks of loss, injury, or death from wildfires or downstream flooding or landslides would occur. Impacts would be significant and unavoidable.	<p><b>WF-1(a) Wildfire Risk Reduction.</b> For individual transportation or land use project within or less than two miles from an SRA or very high fire hazard severity zones, the implementing agency shall require appropriate mitigation to reduce the risk. Examples of mitigation to reduce risk of loss, injury or death from wildlife include, but are not limited to:</p> <ul style="list-style-type: none"> <li>▪ Require the use of fire-resistant vegetation native to the KCAG region and/or the local microclimate of the project site and discourage the use of fire-prone species especially nonnative, invasive species.</li> <li>▪ Enforce defensible space regulations to keep overgrown and unmanaged vegetation, accumulations of trash and other flammable material away from structures.</li> <li>▪ Provide public education about wildfire risk, fire prevention measures, and safety procedures and practices to allow for safe evacuation and/or options to shelter-in-place.</li> <li>▪ Require adherence to the local hazard mitigation plan, as well as the local general plan policies and programs aimed at reducing the risk of wildfires through land use compatibility, training, sustainable development, brush management, public outreach, and service standards for fire departments.</li> <li>▪ Ensure sufficient emergency water supply.</li> <li>▪ Encourage the use of fire-resistant vegetation native to the KCAG region and/or the local microclimate of the project site and discourage the use of fire-prone species especially non-native, invasive species.</li> <li>▪ Require a fire safety plan be submitted to and approved by the local fire protection agency. The fire safety plan shall include all of the fire safety features incorporated into the project and the schedule for implementation of</li> </ul>	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	<p>the features. The local fire protection agency may require changes to the plan or may reject the plan if it does not adequately address fire hazards associated with the project as a whole or the individual phase of the project.</p> <ul style="list-style-type: none"> <li>Prohibit certain project construction activities with potential to ignite wildfires during red-flag warnings issued by the National Weather Service for the project site location. Example activities that should be prohibited during red-flag warnings include welding and grinding outside of enclosed buildings.</li> <li>Require fire extinguishers to be onsite during construction of projects. Fire extinguishers shall be maintained to function according to manufacturer specifications. Construction personnel shall receive training on the proper methods of using a fire extinguisher.</li> <li>Smoking and open fires shall be prohibited at individual transportation or land use projects sites included in 2022 RTP/SCS during construction and operations. A copy of the notification to all contractors regarding prohibiting smoking and burning shall be provided to the respective County in the KCAG Region.</li> </ul> <p><b>WF-1(b) Fire Protection Plan.</b> Individual transportation or land use projects included in the 2022 RTP/SCS shall prepare a Fire Protection Plan that meets Kings County Fire Department requirements. The plan shall contain (but not be limited to) the following provisions:</p> <ul style="list-style-type: none"> <li>All construction equipment shall be equipped with appropriate spark arrestors and carry fire extinguishers.</li> <li>A fire watch with appropriate firefighting equipment shall be available at the Project site at all times when welding activities are taking place. Welding shall not occur when sustained winds exceed that set forth by the Kings County Fire Department unless a Kings County Fire Department y -approved wind shield is on site.</li> <li>A vegetation management plan shall be prepared to address vegetation clearance around all Wind Turbine Generators (WTGs) and a regularly scheduled brush clearance of vegetation on and adjacent to all access roads, power lines, and other facilities.</li> <li>Operational fire water tanks shall be installed prior to construction.</li> <li>Provisions for fire/emergency services access if roadway blockage occurs due to large loads during construction and operation.</li> <li>Cleared, maintained parking areas shall be designated; no parking shall be allowed in non-designated areas.</li> <li>The need for and/or use of dedicated repeaters for emergency services.</li> <li>Appropriate Hot work permits (such as cutting and welding permits) shall be obtained from the jurisdictional fire agency.</li> <li>Compliance with California PRC 4291, 4442, and 4443</li> </ul>	

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# 1 Introduction

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This document is a Program Environmental Impact Report (EIR) that identifies and describes potential environmental impacts associated with implementation of the 2022 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) proposed by the Kings County Association of Governments (KCAG). The 2022 RTP/SCS is an update of the 2018 RTP/SCS, which was approved in August 2018.

Section 21000 of the California Government Code, commonly referred to as the California Environmental Quality Act of 1970 (CEQA), requires the evaluation of environmental impacts associated with all planning programs or development projects proposed. As such, this EIR is an informational document for use by KCAG, other agencies, and the general public in their consideration and evaluation of the environmental consequences of implementing of the proposed 2022 RTP/SCS.

This section discusses (1) the purpose of this EIR; (2) 2022 RTP/SCS and EIR background; (3) the type of environmental document prepared for the 2022 RTP/SCS; (4) the content and format of the EIR; and (5) the environmental review process required under CEQA. The proposed project is described in detail in Section 2.0, *Project Description*.

## 1.1 Statement of Purpose

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

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

As the lead agency for preparing this EIR, KCAG will rely on the EIR analysis of environmental effects in their review and consideration of the proposed 2022 RTP/SCS prior to approval.

As discussed in further detail below in Section 1.3.1, *CEQA Streamlining Opportunities*, Senate Bill (SB) 375 provides streamlining benefits for certain transit-oriented projects consistent with an adopted SCS. Pursuant to these provisions of SB 375, this EIR has also been prepared to allow qualifying projects to streamline their environmental review.

## 1.2 Project Background

As both the federally designated metropolitan planning organization (MPO) and the State-designated regional transportation planning agency (RTPA) for Kings County, KCAG is required by both federal and State law to prepare a county-level long-range Regional Transportation Plan (RTP) to serve as a long-range (at least 20-year) transportation planning document. State and federal law also requires that the RTP be updated every four years. As such, the RTP is the long-range transportation plan for Kings County. The RTP was updated in 2010, 2014, and most recently in

2018. The 2014 document was the first to contain a Sustainable Communities Strategy (SCS), as this was a new requirement pursuant to SB 375. A comprehensive program environmental impact report was prepared for the 2014 RTP/SCS update to satisfy CEQA requirements and a Supplemental Program EIR was prepared in 2018. The 2022 RTP/SCS update lists Tier I roadway projects to improve the transportation system during the 2022-2046 planning period (approximately 25 years). Tier I includes short-range and long-range projects that KCAG considers fully fundable from anticipated revenue sources and likely to be programmed during the life of the RTP/SCS. Although some of the projects from the 2018 RTP may have been completed or are currently under construction, many have not. Additionally, new projects have been incorporated into the 2022 RTP/SCS from the 2018 RTP/SCS.

The 2022 RTP/SCS is the culmination of a multi-year effort that aims to maintain or enhance the efficient and effective movement of goods, services, and persons. Further, the SCS, as part of the RTP, seeks to coordinate local land use and transportation systems within the region to reduce emissions from cars and light trucks. KCAG is required by federal law to develop an RTP that determines the needs of the transportation system and prioritizes proposed transportation projects. The RTP is also necessary to obtain and allocate federal and state funding for regional transportation projects.

In compliance with the CEQA Guidelines (Section 15063), KCAG, as the Lead Agency responsible for the 2022 RTP/SCS, solicited preliminary public agency comments on the project through distribution of a Notice of Preparation (NOP) (Appendix A) and receipt of public comments during a scoping meeting held virtually on November 3, 2021, via Zoom. The NOP scoping process is described and discussed further in Section 1.7, *Public Review and Participation Process*.

## 1.3 Type of Environmental Document

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

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

As a programmatic document, this EIR presents a regionwide assessment of the impacts of the proposed 2022 RTP/SCS. Analysis of site-specific impacts of individual projects is not required in a program EIR. Many specific projects are not currently defined to the level that would allow for such an analysis. Individual specific environmental analysis of each project will be performed as necessary by the appropriate implementing agency prior to each project being considered for approval. This program EIR serves as a first-tier environmental document under CEQA supporting second-tier environmental documents for:

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

Project sponsors implementing subsequent projects would undertake future environmental review for projects in the proposed 2022 RTP/SCS. These agencies would include cities (Avenal, Corcoran,

Hanford, and Lemoore) and the County of Kings. Agencies that would implement a project are also referred to herein as sponsor agencies in this EIR. This would include Caltrans, Amtrak, and transit agencies operating in the region, among others. All of these sponsors, as well as the KCAG member agencies, would be able to prepare subsequent environmental documents that incorporate by reference the appropriate information from this program EIR regarding secondary effects, cumulative impacts, broad alternatives and other relevant factors. If the lead agency finds that implementation of a later activity would have no new effects and that no new mitigation measures would be required, that activity would require no additional CEQA review. Where subsequent environmental review is required, such review would focus on project-specific significant effects specific to the project, or its site, that have not been considered in this program EIR (CEQA Guidelines Section 15168).

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

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

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

The degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR.

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

### 1.3.1 CEQA Streamlining

If the 2022 RTP/SCS is adopted and the program EIR is certified by KCAG, the California Air Resources Board (CARB) must then confirm that the RTP/SCS, if implemented, would achieve the greenhouse gas emission reduction targets required by SB 375. Upon making this determination, a number of streamlining benefits may become available to lead agencies that carry out or approve future projects consistent with the 2022 RTP/SCS.

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

### 1.3.2 Streamlining Under SB 375

SB 375 provides streamlining benefits for Transit Priority Projects (TPP). A TPP is a project that meets all of the criteria summarized below. For the purposes of this EIR, geographic areas that meet the TPP requirements are referred to as Transit Priority Areas (TPAs).

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

One of three potential streamlining benefits may apply to a TPP pursuant to SB 375, as described below.

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

Second, a TPP that does not qualify for the statutory exemption may be eligible to comply with CEQA using a Sustainable Communities Environmental Assessment (SCEA). An SCEA is similar to a streamlined negative declaration or mitigated negative declaration that requires a 30-day public review period (rather than the otherwise available 20-day public review period). An SCEA is available for a TPP that does not result in any potentially significant environmental impacts after mitigation and that has incorporated all feasible mitigation measures, performance standards, or criteria set forth in the prior applicable EIRs including the EIR for the RTP/SCS. An SCEA is not required to discuss (1) growth inducing impacts, or (2) any project specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network (PRC Sections 21155.2 (b)(1), 21159.28 (a)). Additionally, unlike a negative declaration or mitigated negative declaration, a lead agency's decision to approve a TPP based on an SCEA is reviewed, if challenged, by a court under the substantial evidence standard (PRC Section 21155.2(b)(7)).

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

In addition to the benefits provided for TPPs, SB 375 provides streamlining benefits for residential or mixed use residential projects, as defined in PRC Section 21159.28(d), that are consistent with the use designation, density, building intensity, and applicable policies specified for the project area in the SCS. Projects eligible for streamlining must incorporate applicable mitigation measures required by a prior environmental document, such as this EIR if it is certified by KCAG. EIRs for qualifying residential or mixed-use residential projects are not required to include a discussion of (1) growth



inducing impacts, (2) any project specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network, or (3) a reduced density alternative to address effects of car and light truck trips generated by the project (PRC Section 21159.28 (a)-(b)).

Projects that qualify to use the SB 375 CEQA streamlining benefits would still need to obtain discretionary permits or other approvals from the lead agency and the local jurisdiction, in accordance with local codes and procedures, including any agreements related to zoning, design review, use permits, and other local code requirements. The streamlining only applies to the CEQA processing of a project. Other development projects that do not fall into any of these categories could still use this EIR for other CEQA tiering benefits, as described in Section 1.3.5, *Other Tiering Opportunities*.

### 1.3.3 Streamlining Under SB 226

In 2011, the legislature enacted SB 226 to establish additional streamlining benefits applicable to infill projects that are consistent with the requirements set forth in CEQA Guidelines section 15183.3 (PRC Sections 21094.5 (c), 21094.5.5). Residential, commercial and retail, public office buildings, transit stations and schools are eligible for this streamlining provided they meet the following requirements: (1) are located in an urban area on a site that has been previously developed or adjoins existing qualified urban uses on at least 75 percent of the site's perimeter; (2) satisfy the performance standards provided in Appendix M of the CEQA Guidelines; and, (3) are 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, with some exceptions.

For these projects, more significant effects, or if uniformly applicable, development standards, would substantially mitigate such effects. If this is not the case, then a Mitigated Negative Declaration or, for TPPs, a Sustainable Communities Environmental Assessment (SCEA) may be prepared. If impacts cannot be mitigated through project changes, then an "Infill EIR" is prepared. An Infill EIR is only required to analyze effects on the environment that are specific to the project or to the project site and were not addressed as significant effects in a prior planning or programmatic level EIR unless new information shows the effects will be more significant than described in the prior EIR (PRC Section 21094.5 (a)(1)). Moreover, an Infill EIR is not required to consider potentially significant environmental effects of the project that may be reduced to a less-than-significant level by applying uniformly applicable development policies or standards adopted by the city, county, or the lead agency (PRC Section 21094.5 (a)(2)). The Infill EIR is not required to discuss (1) alternative locations, project densities and building intensities, or (2) growth inducing impacts.

Unlike the CEQA streamlining benefits established by SB 375, the benefits created by SB 226 may apply to non-residential projects including qualifying commercial, retail, transit station, school, or public office building projects (CEQA Guidelines, Section 15183.3 (f)(1)).

### 1.3.4 Streamlining Under SB 743

SB 743 (2013) (PRC Section 21099 and 21555.4) created an exemption from CEQA for certain residential, employment center and mixed use development projects that are consistent with a Specific Plan (see Public Resources Code Section 21155.4.) (A Specific Plan implements a General Plan within a smaller geographic area, such as a downtown core or along a transit corridor; see

Government Code Section 65450 et seq.). The exemption applies if a project meets all of the following criteria:

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

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

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

### 1.3.5 Other Tiering Opportunities

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

## 1.4 EIR Content and Format

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

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

- 1.0 **Introduction.** Provides the project background, description of the type of environmental document and CEQA streamlining opportunities, and information about the EIR content, format, and public review process.

- 2.0 **Project Description.** Presents and discusses the project objectives, project location and specific project characteristics.
- 3.0 **Environmental Setting.** Provides a description of the existing physical setting of the project area and an overview of the progress in implementing the 2022 RTP/SCS.
- 4.0 **Analysis of Environmental Issues.** Describes existing conditions found in the project area and assesses potential environmental impacts that may be generated by implementing the proposed project, including cumulative development in the region. These potential project impacts are compared to “thresholds of significance” in order to determine the nature and severity of the direct and indirect impacts. Mitigation measures, intended to reduce adverse, significant impacts below threshold levels, are proposed where feasible. Impacts that cannot be eliminated or mitigated to less-than-significant levels are also identified.
- 5.0 **Other CEQA Required Discussions.** Identifies growth inducing impacts that may result from implementation of the proposed project, as well as long-term effects of the project and significant irreversible environmental changes.
- 6.0 **Alternatives.** Describes alternatives to the proposed project, and compares each alternatives environmental impacts to the proposed project.
- 7.0 **References/Preparers.** Lists all published materials, federal, state, and local agencies, and other organizations and individuals consulted during the preparation of this EIR. It also lists the EIR preparers.

## 1.5 Public Review and Participation Process

KCAG distributed a Notice of Preparation (NOP) of the EIR for a 30-day agency and public review period starting on October 20, 2021 and ending on November 19, 2021. The NOP provided formal notification to all federal, state, and local agencies involved with funding or approval of the project, and to other interested organizations and members of the public, of the preparation of this Draft EIR for the project. A copy of the NOP is provided in Appendix A along with all written responses received. In addition, the KCAG held an EIR Scoping Meeting on November 3, 2021, at 1:00 pm. The meeting, held virtually via Zoom, was aimed at providing information about the proposed project to members of public agencies, interested stakeholders and residents/community members. KCAG received letters from four agencies in response to the NOP during the public review period, as well as various verbal comments during the EIR Scoping Meeting. The NOP is presented in Appendix B of this EIR, along with the Initial Study that was prepared for the project and the NOP responses received. Table 1-1 summarizes the content of the letters and verbal comments and where the issues raised are addressed in the EIR.

**Table 1-1 Notice of Preparation Comments**

Commenter	Comment/Request	EIR Section Where Comment is Addressed
<b>Agency Comments</b>		
California Department of Transportation (Caltrans)	Requests that impacts to State facilities due to increased traffic volumes are mitigated as part of project development and regional effort.	Section 4.15, <i>Transportation and Traffic</i>
California Department of Fish and Wildlife	Requests that the EIR prepares mitigation measures to adequately reduce impacts to special-status species to less than significant levels.  Recommends consultation with the US Fish and Wildlife Service prior to any ground disturbing activities.	Section 4.4, <i>Biological Resources</i>
	Requests that any potential alterations to lakes and/or streambeds are described, and impacts are adequately mitigated.	Section 4.4, <i>Biological Resources</i> , and Section 4.10, <i>Hydrology and Hazards</i>
Native American Heritage Commission	Recommends consultation with California Native American tribes affiliated with the area of the proposed project.	Section 4.16, <i>Tribal Cultural Resources</i>
San Joaquin Valley Air Pollution Control District	Recommends the EIR incorporate strategies to reduce vehicle miles traveled (VMT) and other strategies to reduce air pollution associated with transportation.	Section 4.15, <i>Transportation and Traffic</i>
	Recommends incorporating measure to use clean air off-road equipment to reduce greenhouse gas emissions associated with short-term construction and separate analysis of short-term operational and construction activities.  Requests separate analysis on emissions from stationary sources and mobile sources.	Section 4.8, <i>Greenhouse Gas Emissions</i>
	Requests project-related criteria pollutant emissions from construction and operational sources to be identified and quantified with CalEEMod.  Recommends an evaluation of heavy-duty truck routes to result in a measure to reduce greenhouse gas emissions associated with operation.  Recommends the project includes a Voluntary Emission Reduction Agreement to mitigate pollutant and greenhouse gas emissions.	
	Recommends the inclusion of a Health Risk Screening/Assessment to evaluate the impact of toxic air contaminants from to sensitive receptors, and the possible health impact of other pollutants. If the potential impacts cannot be specifically correlated, give a detailed explanation.	Section 4.2, <i>Air Quality</i>

Commenter	Comment/Request	EIR Section Where Comment is Addressed
	Requests an ambient air quality analysis be performed, as such analysis is required for any project with emissions that exceed 100 pounds per day of any pollutant.	
	Requests a discussion in the EIR regarding cumulative air impacts.	
	Recommends the use of vegetative barriers and solar deployment in the project area to reduce impacts to ambient air quality.	
	Recommends various strategies to reduce the emissions of criteria pollutants.	
	Requests further analysis to identify activities that would require permits according to District rules and regulations.	
<b>Public Comments</b>		
Cynthia Echavarria Baruch, Naval Air Station Lemoore	Notified during Scoping Meeting that they were in the process of reviewing the DEIR and will submit comments.	Section 4.X, <i>Title</i> .
David Padilla, Caltrans	Recommends that the Regional Corridor needs study.	Section 4.X, <i>Title</i> .
	Notified during Scoping Meeting that they were in the process of reviewing the NOP and may provide additional comments.	
Dustin Fuller, CCFCD	Notified during Scoping Meeting that they were in the process of reviewing.	Section 4.X, <i>Title</i> .
Joe Cosgrove, KCAG Planner	Expressed that he was looking forward to the project and working on it.	N/A

KCAG filed a Notice of Preparation (NOP) with the Governor’s Office of Planning and Research, State Clearinghouse., which initiated a 30-day public review period beginning on October, 20, 2021. During the public review period, the NOP was available for review online on KCAG’s website ([https://www.kingscog.org/2022rtp\\_update](https://www.kingscog.org/2022rtp_update)). A Public Scoping Meeting was held on November 3, 2021 via Zoom for Public Comments.

## 1.6 Environmental Review Process

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

1. **Notice of Preparation (NOP).** KCAG, following CEQA Guidelines section 15082(a), submitted a NOP to the State Clearinghouse which publicly released it on October 20, 2021 for a review period that ended on November 19, 2021.
2. **Draft EIR Prepared.** This Draft EIR contains: a) table of contents or index; b) summary; c) project description; d) environmental setting; e) discussion of significant impacts (direct, indirect, cumulative, growth-inducing and unavoidable impacts); f) a discussion of alternatives; g) mitigation measures; and h) discussion of irreversible changes.

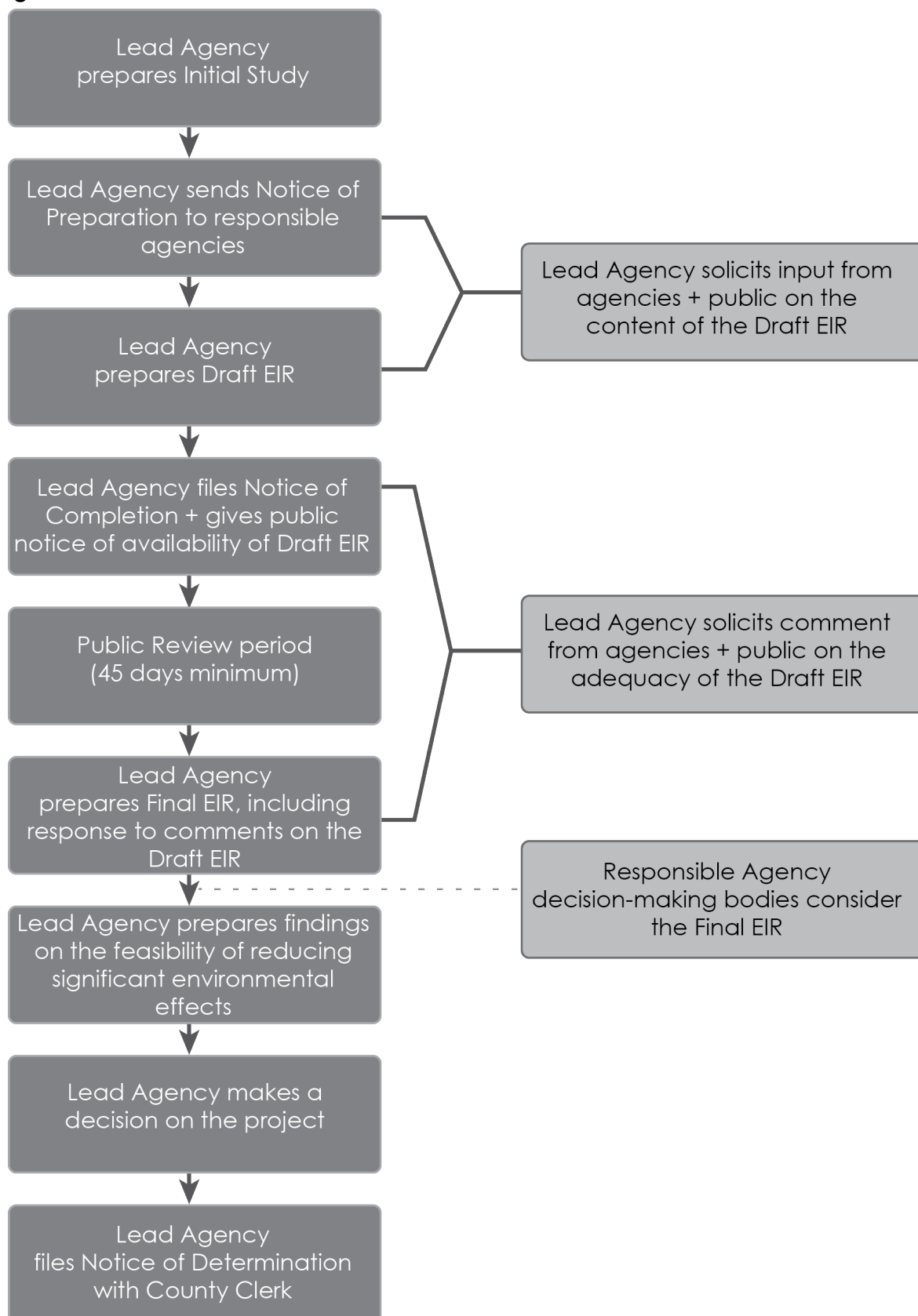
3. **Notice of Completion (NOC).** KCAG must file a NOC with the State Clearinghouse when it completes this Draft EIR and prepare a Public Notice of Availability of a Draft EIR. KCAG must place the NOC in the County Clerk's office for 30 days (Public Resources Code Section 21092.3) and send a copy of the NOC to anyone requesting it (*CEQA Guidelines* Section 15087). Additionally, public notice of Draft EIR availability must be given through at least one of the following procedures: a) publication in a newspaper of general circulation; b) posting on and off the project site; and c) direct mailing to owners and occupants of contiguous properties. KCAG must solicit input from other agencies and the public, and respond in writing to all comments received (Public Resources Code Sections 21104 and 21253). When a Draft EIR is sent to the State Clearinghouse for review, the public review period must be 45 days unless the State Clearinghouse approves a shorter period (Public Resources Code 21091). Further, as this is a project of regional significance (in accordance with Public Resources Code Section 21092.4), KCAG has consulted with transportation planning agencies and public agencies in regards to the RTP/SCS.
4. **Final EIR.** The Final EIR must include: a) the Draft EIR; b) copies of comments received during public review; c) list of persons and entities commenting; and d) responses to comments.
5. **Certification of Final EIR.** Prior to making a decision on the proposed project, KCAG must certify that: a) the Final EIR has been completed in compliance with CEQA; b) the Final EIR was presented to the decision-making body of the lead agency; and c) the decision-making body reviewed and considered the information in the Final EIR prior to approving a project (*CEQA Guidelines* Section 15090).
6. **Lead Agency Project Decision.** KCAG may a) disapprove the project because of its significant environmental effects; b) require changes to the project to reduce or avoid significant environmental effects; or c) approve the project despite its significant environmental effects, if the proper findings and statement of overriding considerations are adopted (*CEQA Guidelines* Sections 15042 and 15043).
7. **Findings/Statement of Overriding Considerations.** For each significant impact of the project identified in the EIR, KCAG must find, based on substantial evidence, that either: a) the project has been changed to avoid or substantially reduce the magnitude of the impact; b) changes to the project are within another agency's jurisdiction and such changes have or should be adopted; or c) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible (*CEQA Guidelines* Section 15091). If an agency approves a project with unavoidable significant environmental effects, it must prepare a written Statement of Overriding Considerations that sets forth the specific social, economic, or other reasons supporting the agency's decision.
8. **Mitigation Monitoring Reporting Program.** If KCAG is required to make findings on significant effects identified in the EIR, it shall adopt a reporting or monitoring program for mitigation measures that were adopted or made conditions of project approval to mitigate significant effects.
9. **Notice of Determination (NOD).** KCAG will file a NOD after deciding to approve a project for which an EIR is prepared (*CEQA Guidelines* Section 15094). KCAG shall file the NOD with the County Clerk. The NOD must be posted for 30 days and sent to anyone previously requesting notice. Posting of the NOD starts a 30-day statute of limitations on CEQA legal challenges (Public Resources Code Section 21167[c]).

## 1.7 Lead and Responsible Agencies

The *CEQA Guidelines* define lead and responsible and trustee agencies. A lead agency is the public agency with principal responsibility for carrying out or approving a project; the lead agency prepares the CEQA document (CEQA Guidelines Section 15367). A responsible agency is an agency other than the lead agency with responsibility for carrying out or approving a project, and uses the lead agency's CEQA document in its decision-making (CEQA Guidelines Section 15381).

KCAG is the lead agency for the 2022 RTP/SCS because it holds principal responsibility for approving the 2022 RTP/SCS. Project sponsors for individual projects analyzed in this program EIR may include: Caltrans; the County of Kings; cities within the KCAG region (Avenal, Corcoran, Hanford, and Lemoore); transit agencies; and other project sponsors who may implement any of the projects listed in the 2022 RTP/SCS. These agencies are considered responsible agencies for the 2022 RTP/SCS, but may be lead agencies for individual transportation or land use projects.

**Figure 1-1 Environmental Review Process**





## 2 Project Description

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This section describes the proposed project, the 2022 Regional Transportation Plan and Sustainable Communities Strategy (2022 RTP/SCS), as well as the project objectives, project location and characteristics, 2022 RTP/SCS transportation projects, the preferred land use scenario selected for the SCS, and discretionary actions needed for approval.

### 2.1 Lead Agency

Kings County Association of Governments (KCAG)  
(Regional Transportation Planning Agency)  
339 West D Street, Suite B  
Lemoore, California 93245  
(559) 852-2654

### 2.2 Lead Agency Contact Person

Terri King, Executive Director  
Kings County Association of Governments  
339 West D Street, Suite B  
Lemoore, California 93245  
terri.king@co.kings.ca.us  
(559) 852-2678

### 2.3 Background

The objective of the 2022 RTP/SCS is to comply with the current California Transportation Commission Regional Transportation Plan Guidelines, pursuant to Government Code Section 14522. The guidelines require the preparation of a regional transportation plan, and a long-range transportation planning document which would provide policy guidelines regarding the planning and programming of transportation projects within Kings County through 2046. Further, Government Code Sections 65050, 65400, 65584.01-04, 65587, 65588 and Public Resources Code Section 21155 were amended in January 2009 when Senate Bill (SB) 375 became law, requiring coordinated planning between regional land use and transportation plans to increase efficiency and reduce GHG emissions. The following sections describe the legislative requirements and local objectives associated with the 2022 RTP/SCS.

#### **General Legislative Requirements**

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

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

The California Transportation Commission's document *2017 California Regional Transportation Plan Guidelines* serves as the guidance for RTP development. All RTP updates started after the 2017 RTP Guidelines were adopted by the California Transportation Committee (CTC) (January 18, 2017) must use the new RTP guidelines. KCAG began their RTP/SCS after that date, so it is therefore following the 2017 RTP Guidelines. Under both federal and State law, KCAG must update its RTP every four years.<sup>1</sup> KCAG adopted its most recent RTP/SCS update in 2018 (2018 RTP/SCS). The 2018 RTP/SCS covered a 25-year period between 2018 and 2042 (KCAG 2018).

## **SB 375 Requirements**

The Sustainable Communities Strategy and Climate Protection Act, SB 375 (codified at CAL.GOV'T CODE §§ 14522.1, 14522.2, 65080.01, 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588; CAL. PUB. RES. CODE §§2161.3, 21155, 21159.28), is a law passed in 2008 by the California legislature that requires each MPO/RTPA to demonstrate, through the development of an SCS, how its region will integrate transportation, housing, and land use planning to meet the greenhouse gas (GHG) reduction targets set by the State. In addition to creating requirements for MPOs, it also creates requirements for the CTC and CARB. Some of the requirements include the following:

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

In 2010, CARB issued KCAG a regional GHG target of a 13 percent reduction in per capita GHG emissions in planning year 2035, as compared to baseline per capita emissions levels in 2005. These targets apply to the KCAG region as a whole for all on-road light-duty trucks and passenger vehicles emissions, and do not apply to individual cities or sub-regions. CARB is required to update 2035 GHG reduction targets every eight years for each region covered by one of the state's MPOs. CARB is required to adopt updated targets by 2026. However, the updated targets are not applicable for this cycle of the RTP/SCS. Therefore the 2022 RTP/SCS would be subject to the CARB targets established

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<sup>1</sup> 23 C.F.R. §450.322(c); Gov. Code §65080(d)

in 2018 (a 13 percent reduction in per capita GHG emissions for the planning year 2035). KCAG, through the RTP/SCS, must reduce these levels to meet the 2035 target.

SB 375 specifically states that local governments retain their autonomy to plan local General Plan policies and land uses. The 2022 RTP/SCS provides a regional policy foundation that local governments may build upon, if they so choose. The 2022 RTP/SCS includes and accommodates the quantitative growth projections for the region. SB 375 also requires that forecasted development pattern for the region be consistent with the eight-year regional housing needs as allocated to member jurisdictions through the Regional Housing Needs Allocation (RHNA) process under State housing law. RHNA, itself, is statutorily exempt from CEQA.

In addition, this 2022 RTP/SCS EIR lays the groundwork for the streamlined review of qualifying development projects within Transit Priority Areas.<sup>2</sup> Qualifying projects that meet statutory criteria and are consistent with the 2022 RTP/SCS are eligible for streamlined environmental review pursuant to CEQA. See Section 1.0, *Introduction*, for a full discussion of CEQA streamlining.

### **The Infrastructure Investment and Jobs Act (IIJA)**

This was signed into law on November 15, 2021. The IIJA authorizes \$1.2 trillion for transportation and infrastructure spending with \$550 billion of that figure going toward “new” investments and programs. Funding from the IIJA is expansive in its reach, addressing energy and power infrastructure, access to broadband internet, water infrastructure, and more. Some of the new programs funded by the bill could provide the resources needed to address a variety of infrastructure needs at the local level.

### **Fixing America’s Surface Transportation Act (FAST Act)**

The Fixing America’s Surface Transportation (FAST) Act, which builds on the changes made by MAP-21. The Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21), enacted in 2012, made a number of reforms to the metropolitan and statewide transportation planning processes, including incorporating performance goals, measures, and targets into the process of identifying needed transportation improvements and project selection. The FAST Act includes provisions to support and enhance these reforms. Public involvement remains a hallmark of the planning process.

The FAST Act continues requirements for a long-range plan and a short-term transportation improvement program (TIP). Long-range statewide and metropolitan plans are now required to include facilities that support intercity transportation, including intercity buses. The statewide and metropolitan long-range plans must describe the performance measures and targets that states and MPOs use in assessing system performance and progress in achieving the performance targets. Additionally, the FAST Act requires the planning process to consider projects/strategies to improve the resilience and reliability of the transportation system, address stormwater mitigation, and enhance travel and tourism.

Finally, to engage all sectors and users of the transportation network, the FAST Act requires that the planning process include public ports and private transportation providers, and further encourages MPOs to consult during this process with officials of other types of planning activities, including tourism and natural disaster risk reduction. MAP-21 and the FAST Act also change criteria for MPO

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

officials to provide transit provider representatives with equal authority and allow the representatives to also serve as the representative of a local municipality.

Through the RTP development process, the FAST Act encourages KCAG to:

- Consult with officials responsible for other types of planning activities that are affected by transportation in the area (including State and local planned growth, economic development, environmental protection, airport operations, and freight movements) or to coordinate its planning process, to the maximum extent practicable, with such planning activities.<sup>3</sup>

Specifically, the FAST Act requires that the RTP planning process considers projects and strategies that will:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety of the transportation system for motorized and non-motorized users;
- Increase the security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation;
- Emphasize the preservation of the existing transportation system.
- Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
- Enhance travel and tourism.<sup>4</sup>

## **Planning Final Rule – FAST Act**

On May 27, 2016, the Statewide and Nonmetropolitan Transportation Planning and Metropolitan Transportation Planning Final Rule was issued, with an effective date of June 27, 2016, for Title 23 CFR Parts 450 and 771 and Title 49 CFR Part 613. This final rule states, “On or after May 27, 2018, an RTPA may not adopt an RTP that has not been developed according to the provisions of MAP-21/FAST Act as specified in the Planning Final Rule.” This rule applies to the KCAG 2022 RTP/SCS as its projected adoption is for September 2022.

## **MAP-21**

The Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21) was enacted in 2012. Through the MTP development process, MAP-21 encourages KCAG to achieve the same goals as listed above under the FAST Act (i.e., support economic vitality, increase safety and security of the transportation systems, protect and enhance the environment, etc.). The 2022 RTP/SCS discusses in detail how these requirements are met.

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<sup>3</sup> 23 U.S.C. §134(g)(3)(A).

<sup>4</sup> 23 U.S.C. §134(h)(1).

## Environmental Justice

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

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

## Regional Transportation Plans

As noted, the procedures for developing RTPs are provided in the CTC’s Regional Transportation Plan Guidelines (2017). The guidelines identify the purpose of an RTP to be as follows:

- Provide an assessment of current modes of transportation and the potential of new travel options within the region;
- Project/estimate the future needs for travel and goods movement;
- Identify and document specific actions necessary to address the region’s mobility and accessibility needs;
- Guide and document public policy decisions by local, regional, state and federal officials regarding transportation expenditures and financing;
- Identify needed transportation improvements in sufficient detail to serve as a foundation for:
  - Development of the Federal Transportation Improvement Program (FTIP) and the Interregional Transportation Improvement Program (ITIP);
  - Facilitation of the National Environmental Protection Act (NEPA)/404 integration process; and
  - Identification of project purpose and need.
- Employ performance measures that demonstrate the effectiveness of the transportation improvement projects in meeting the intended goals.
- Promote consistency between the California Transportation Plan, the regional transportation plan and other transportation plans developed by cities, counties, districts, Native American Tribal Governments and State and Federal agencies in responding to statewide and interregional transportation issues and needs;
- Provide a forum for 1) participation and cooperation, and 2) facilitating partnerships that reconcile transportation issues which transcend regional boundaries; and
- Involve community-based organizations as part of the public, Federal, State and local agencies, Native American Tribal Governments, as well as local elected officials, early in the transportation planning process so as to include them in discussions and decisions on the social, economic, air quality, and environmental issues related to transportation.

RTPs must include long-term horizons (at least 20 years) that reflect regional needs, identify regional transportation issues, and develop and evaluate solutions that incorporate all modes of travel. RTPs must also recommend a comprehensive approach that provides direction for programming decisions to meet the identified regional transportation needs. The RTP must be fully consistent with the requirements of MAP-21, the FAST Act, and other federal regulations, including conformity with the 1990 Clean Air Act Amendments and consistency with the Federal Transportation Improvement Program (FTIP).

In addition, Government Code §§ 65050, 65400, 65584.01-04, 65587, 65588 and Public Resources Code §21155 were amended in January 2009 when SB 375 became law, requiring coordinated planning between regional land use and transportation plans to increase efficiency and reduce GHG emissions.

## 2.4 Project Objectives

The purpose of the 2022 RTP/SCS is to coordinate and facilitate the programming and budgeting of all transportation facilities and services within Kings County through the year 2046 and demonstrate how the region will integrate transportation and land use planning to meet the GHG reduction targets established by the California Air Resources Board (CARB) and in accordance with other State and Federal regulations. It identifies reasonably available sources of funding for transportation. The 2022 RTP/SCS is a plan for improving the quality of life for residents of Kings County by planning for wise transportation investments and informed land use choices. The RTP/SCS aims to achieve variety and efficiency in travel choices, as well as a safe, secure, and efficient transportation system that would provide improved mobility and access. It includes strategies to generally improve air quality, improve health, and reduce greenhouse gas emissions consistent with SB 375 requirements. The plan achieves its overall objectives by combining transportation investment and policies with integrated land use strategies that reduce per capita vehicle miles traveled (VMT) and emissions.

The project's overall goal is to develop a transportation system that encourages and promotes the safe and efficient development, management, and operation of surface transportation systems to equitably and safely serve the mobility and accessibility needs of people and freight (including meeting the Americans with Disabilities Act requirements, accessible pedestrian walkways, and bicycle transportation facilities) and foster economic growth and development, while minimizing transportation-related fuel consumption, air pollution, and greenhouse gas emissions.

Project policies and objectives include:

- Using Transportation System Management (TSM) evaluations, consider those alternative solutions that lessen environmental problems, yet serve transportation needs.
- Seek to mitigate unavoidable adverse impacts associated with selected alternatives.
- Use environmental documents such as Initial Studies and EIRs as decision-making tools.
- Coordinate transportation control measures with the San Joaquin Valley Air Pollution Control District and the latest air quality attainment plan for the San Joaquin Valley.
- Consult with lead agencies on projects having environmental effects, of statewide, regional, or areawide significance on transportation facilities.
- Maintain modeling capability that will respond to state and federal reporting requirements and the need for accurately projecting travel demand in future years.

- Conduct meaningful consultation with California Native American tribes for the protection of cultural resources in accordance with AB 52.
- Maintain and rehabilitate the regional system; reconstruct deteriorated road sections.
- Provide safety improvements to reduce the number, severity, and probability of fatal and serious injury vehicle collisions.
- Undertake new construction projects to upgrade and complete the regional system, and to close gaps in local and state highway systems.
- Implement operational improvements (such as road widening, relief of parking congestion, traffic signals, passing lanes, and turn lanes) to maximize service and efficiency.
- Carry out landscaping and maintenance projects to help make highways compatible with their surroundings.
- Enforce local ordinances regulating oversize truck terminal access.
- Work with Caltrans and local agencies to obtain right-of-way dedications at designated future interchanges and along mainline portions of state highways within the regional transportation system.
- Petition the California State Legislature and the California Transportation Commission to adopt equitable laws and policies for apportioning fuel taxes and funding highway projects. Ensure that Kings County receives its fair share of available transportation dollars.
- Work more closely with other Regional Transportation Planning Agencies in the area to foster coordinated highway facilities planning.
- Preserve an effective and convenient intercity public transportation system of regularly scheduled bus and rail services.
- Provide public transit services for those needs defined as "Unmet Transit Needs" which are "Reasonable to Meet".
- Support the efforts of the trucking and rail industries to transport commodities safely and efficiently.
- Improve routes of regional significance to promote the safe operation of vehicular traffic, especially during high collision probability times such as times of heavy winter fog, night, etc.
- A fully functional and integrated air transportation and airport system that is complementary to the regional transportation system.
- Provide a well-developed, safe, and convenient, intermodally-connected system of bikeways complete with support facilities.
- Ensure that future development supports and facilitates the expansion, improvement, and maintenance of the bikeway system.
- Provide on-going bicycle safety education and information programs.
- Implement bikeways that will connect major employers, educational facilities, and recreational areas.
- Encourage the use of bicycle and pedestrian modes of transportation to enhance air quality and improve human health.
- Shorten the travel time required to move people and goods on the existing system.
- Reduce air quality impacts caused by the existing system.
- Reduce the amount of energy consumed by users of the existing system.

## 2.5 Project Location

The 2022 RTP/SCS covers the entire area of Kings County and includes the cities of Avenal, Corcoran, Hanford, and Lemoore, as well as unincorporated areas within the County (see Figure 2-1). Capital improvement projects identified in the 2022 RTP/SCS are located on state highways, county roads and locally owned streets, as well as on airport property, transit district property and public utility lands.

## 2.6 Project Characteristics

The most recent RTP/SCS was adopted by KCAG in 2018 (2018 RTP/SCS). This 2022 update is a technical update which reflects changes in planning assumptions, planning lists, legislative requirements, demographics, local land use policies, and resource constraints while preserving the foundational elements of the 2018 RTP/SCS.

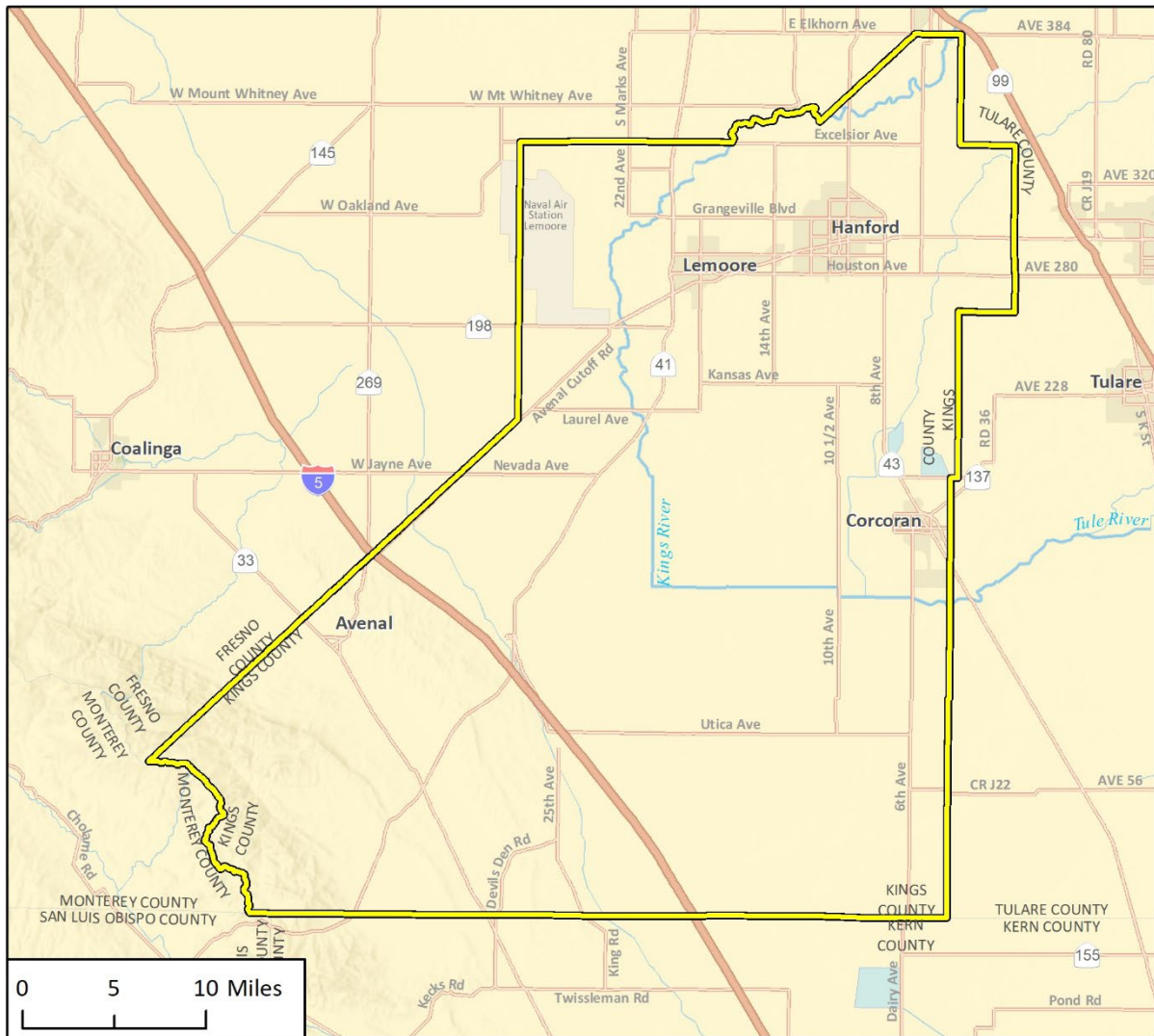
The 2022 RTP/SCS plans how the KCAG region will meet its transportation needs for the approximately 25-year period from 2022 to 2046, considering existing and projected future land use patterns as well as forecast population and job growth. Continued growth in the region would occur independently with or without implementation of the RTP/SCS. Therefore, the RTP/SCS is intended to accommodate the inevitable growth of the region and distribute growth. The RTP/SCS would not directly increase population; rather, the RTP/SCS intends to provide framework on how to plan for expected growth. The 2022 RTP/SCS plans for approximately \$724 million in revenues expected to be available to the region from all transportation funding sources over the course of the planning period. It identifies and prioritizes expenditures of this anticipated funding for transportation projects of all transportation modes: highways, streets and roads, transit, rail, bicycle, pedestrian, as well as transportation demand management measures and intelligent transportation systems.

The 2022 RTP/SCS is based on a preferred land use and transportation scenario (Scenario A also referred as the “Current Trend” scenario) which defines a pattern of future growth and transportation system investment for the region emphasizing a compact infill approach to land use and housing. Population and job growth is allocated principally within existing urban areas near public transit. The preferred land use scenario reflects the planned general plan growth detailed in the local agency's general plans. These growth patterns are consistent with growth historically seen in Kings County, with most residential and non-residential growth occurring within the incorporated cities of Avenal, Corcoran, Hanford, and Lemoore. Although Kings County is relatively rural, mixed-use infill and higher-density development are already seen in part of the urbanized areas. In addition, the mixed-use and infill development projects are encouraged in all the local agency general plans – most recently in Hanford general plan update. This includes a mix of infill development in downtown areas with some development in new growth areas but still within urban growth lines. Over 98 percent of countywide housing growth is projected to occur within incorporated cities, with less than 2 percent growth in unincorporated communities. Likewise, 95 percent of employment growth under the Current Trend scenario is in the cities, while 5 percent is in existing unincorporated communities.

The housing type distribution under Scenario A is approximately 77 percent detached single family homes over multi-family housing which constitute 23 percent of residential land use. The distribution of new residential development reflects a 83/17 percent split of single-family housing relative to new multi-family housing. Transportation investments in Scenario A prioritize roadway rehabilitation and roadway system preservation. No new roadway capacity of state highway



**Figure 2-1 Regional Project Location**



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 Kings County



Fig. 1 Regional Location

facilities is assumed. Transportation investment in Scenario A is dedicated to roadway maintenance with increased funding for alternative transportation improvements such as transit and bicycle/pedestrian improvements. Scenario A also includes the following:

- Current Trend Land Use (consistent with local agency General Plans)
- Tier I CIP list Investment Portfolio – roadway maintenance, KART service enhancements and fleet replacement and maintenance, construction of bicycle and pedestrian facilities.
- Medium Investment – encourage the development of infrastructure for and the implementation of alternative fuel vehicles.
- Low Investment
  - Mobility improvements: transit service expansion and ridesharing
  - Operational improvements that include installation of roundabouts, signal synchronization, and ITS/TSM strategies
  - Land use: encourage mixed-use, high-density and infill new development in existing communities

## **2022 RTP/SCS Framework**

There are four required elements of the RTP (Policy Element, Sustainable Communities Strategy, Financial Element, and Action Element); all of which must be internally consistent. The goals and strategies in the policy element reflect regional priorities for mobility, which are supported by the assumptions in the SCS, and are further reflected in the funding allocations in the financial element.

A scenario represents the potential future interaction of these elements. SCS scenarios were created consisting of a combination of strategies, each with varying level of investment. Each land use scenario has been evaluated through a series of metrics to inform policymakers and the public how the scenario meets regional goals and strategies for improvement over current conditions. Each element's relationship to scenario development is described below.

### *Development Patterns and Demographic Projections*

- Location of new housing
- Location of new job centers
- Infill within downtowns and mixed-use neighborhoods versus converted farmland or open space;

### *Transit/Transportation Investments*

- Spending levels on active transportation investments
- Transit service improvements
- Vanpool formation
- Passenger rail enhancements
- Electromobility investments
- Broadband expansions to facilitate telecommuting, tele-shop and tele-health opportunities for disadvantaged communities in Kings County.

The 2022 RTP/SCS, also referred to as Kings Regional Vision, is organized into the following chapters:

*Chapter 1: Introduction.* Includes an introduction to the RTP, purpose of the plan, and relevant background information.

*Chapter 2: Overview of Transportation Planning and Programming.* This chapter seeks to integrate a wide range of social and economic matters that figure into KCAG's transportation planning process.

*Chapter 3: The Policy Element.* Includes the objectives and policies needed to help meet the goal of the RTP: program, environmental, public participation, regional highway system, goods movement, public transportation, intercity rail and bus, aviation, active transportation, transportation systems, and transportation technology.

*Chapter 4: The Regional Highway System.* Includes an analysis of the current conditions, assumptions, and inventories of the regional highway system.

*Chapter 5: Goods Movement.* Includes assumptions, inventories, issues, and significant studies to address efficient goods movement throughout the region.

*Chapter 6: Public Transportation.* Provides an overview of the existing private and public agencies providing transportation services in the region. Among those providers mentioned in this chapter are Kings Area Regional Transit (KART), Corcoran Area Transit, Amtrak San Joaquin, high speed and commuter rail service, in addition to a discussion of vanpool ridesharing and programs.

*Chapter 7: Aviation.* Includes a discussion of the role of aircrafts to the economy of communities and businesses in Kings County, in addition to an inventory of registered aircrafts and public use and private airstrips in the region.

*Chapter 8: Active Transportation.* Provides an overview of the existing, current, and planned bike and pedestrian efforts to provide public benefit in Kings County. As well as discussion of the future impacts of state and federal opportunities to provide long-term funding for a variety of active transportation projects.

*Chapter 9: Transportation Demand Management.* This section describes the Transportation Demand Management (TDM) and Transportation System Management (TSM) implemented by King County to promote strategies and adaptations that ensure residents can get the most out of its existing roadway system. This chapter also includes descriptions of the role of intelligent transportation systems (ITS) which use broadband or mobile communications technology in transportation.

*Chapter 10: Air Quality.* Includes a description of the current planning efforts and strategies to improve air quality in the region in an effort to meet established air quality standards.

*Chapter 11: Revenue Forecast.* Includes a revenue projection for the forecast horizon of the RTP/SCS. Includes local, state, and federal inflows and some description of anticipated operating expenditures.

*Chapter 12: Regional Transportation Needs.* This chapter details the financially-constrained list of improvements planned across all modes in Kings County. This chapter shows capital projects and operational costs are reflected across modes.

*Chapter 13: Sustainable Communities Strategy.* Includes a description of the public outreach component and the required SCS chapter, including the investment analysis, plan adjustment, and off-model reduction calculations and other required modeling information.

Of these thirteen chapters of the 2022 RTP/SCS, the Planning Process, Investment Plan, and Transportation Performance Policies (included in Chapters 3, 11, and 13) are the three elements

that include provisions with the potential to create physical changes to the environment and will be the primary focus for analysis in this EIR.

## **POLICY ELEMENT**

The Policy Element of the 2022 RTP/SCS has been broadened to include both a regional policy section and a local policy section. The regional policy section includes specific policies for various topical issues and transportation modes (highways and roadways, bicycle, transit, etc.).

## **INVESTMENT PLAN**

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

## **PERFORMANCE MEASURES/SCENARIO DEVELOPMENT**

The Performance Measures portion of the 2022 RTP/SCS delineates the current program of highway, streets and roadways, bicycle and pedestrian, transit, intelligent transportation systems, transportation demand management, railroad, and aviation projects. Many of the programmed and planned transportation improvement projects carry over from the 2018 RTP/SCS; however, the 2022 RTP/SCS also includes a number of new projects. All projects listed in the 2022 RTP/SCS are defined as Tier I improvements. The Tier I list contains short- and long-range projects that are fully fundable from anticipated revenue sources and would likely be programmed during the life of the RTP (by 2046).

The recommended Tier I improvements for each transportation mode type, including roadways, transit, bicycle and pedestrian and aviation, are intended to implement a balanced multimodal circulation system, improve air quality by reducing vehicle miles traveled (VMT) and greenhouse gas (GHG) emissions while accommodating anticipated travel demand. In addition to the typical transportation system improvements such as widening roadways and adding traffic signals to improve congestion and mobility, KCAG is committed to analyzing alternative strategies such as Transportation Systems Management (TSM), Transportation Demand Management (TDM), and Intelligent Transportation Systems (ITS) to increase system efficiencies. The alternative strategies will provide increased opportunities for non-auto travel; thus, reducing VMT and improving overall air quality. The locations of new programmed or planned transportation improvements are shown in Figure 2-2 through Figure 2-7. In addition, Table 2-1 at the end of this chapter lists the KCAG RTP Tier 1 projects by jurisdiction. The projects included in the table comprises of the complete program of improvements evaluated within this EIR.

## **Transportation Projects**

### *Roadway Improvements*

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

The proposed roadway projects include road widenings and extensions, various improvements to interchanges/intersections, and bridge replacements. Road widening, auxiliary lane construction, roadway rehabilitation, railroad crossing improvements and various other improvements including signal installation are programmed or planned along highways and along local arterials in Hanford, Lemoore, Corcoran, Avenal, and throughout Kings County.

Transportation system management (TSM) and intelligent transportation system (ITS) projects involve the use of methods to reduce demands on the roadway system and technologies that allow more efficient use of the existing road network. Proposed ITS projects are emphasized and include the installation of fiber optic and signal interconnect cables, associated conduit, and closed-circuit television cameras. The attainment of TSM objectives can be documented by periodic studies of the effectiveness of TSM measures in future RTPs

### *Transit Improvements*

Proposed new transit improvements for the various transit agencies are listed in Table 2-1. Transit improvements include: installing bus shelters, beginning the implementation of Zero Emission fleet including purchasing zero-emission vehicles and buses, and implement zero-emission fueling stations.

### *Bicycle and Pedestrian Improvements*

Bicycle and pedestrian improvements are listed in Table 2-1. Improvements consist of various signage, striping, and signal modifications to facilitate multiple use of existing roadway corridors throughout the county; specifically, continuous bike lanes (Class II), new bike routes (Class III), separated bikeways (Class IV), expansion of the Hanford Pedestrian Project to more streets, bike station installations, improved sidewalks and restriped crosswalks along major roads and the surrounding areas, pedestrian crossings across railroads, footpaths, and multi-use paths in new developments.

### *Airport Improvements*

Newly proposed aviation projects in the 2022 RTP/SCS are listed in Table 2-1. The 2022 RTP/SCS includes a number of new projects at Hanford Municipal Airport. These include the following:

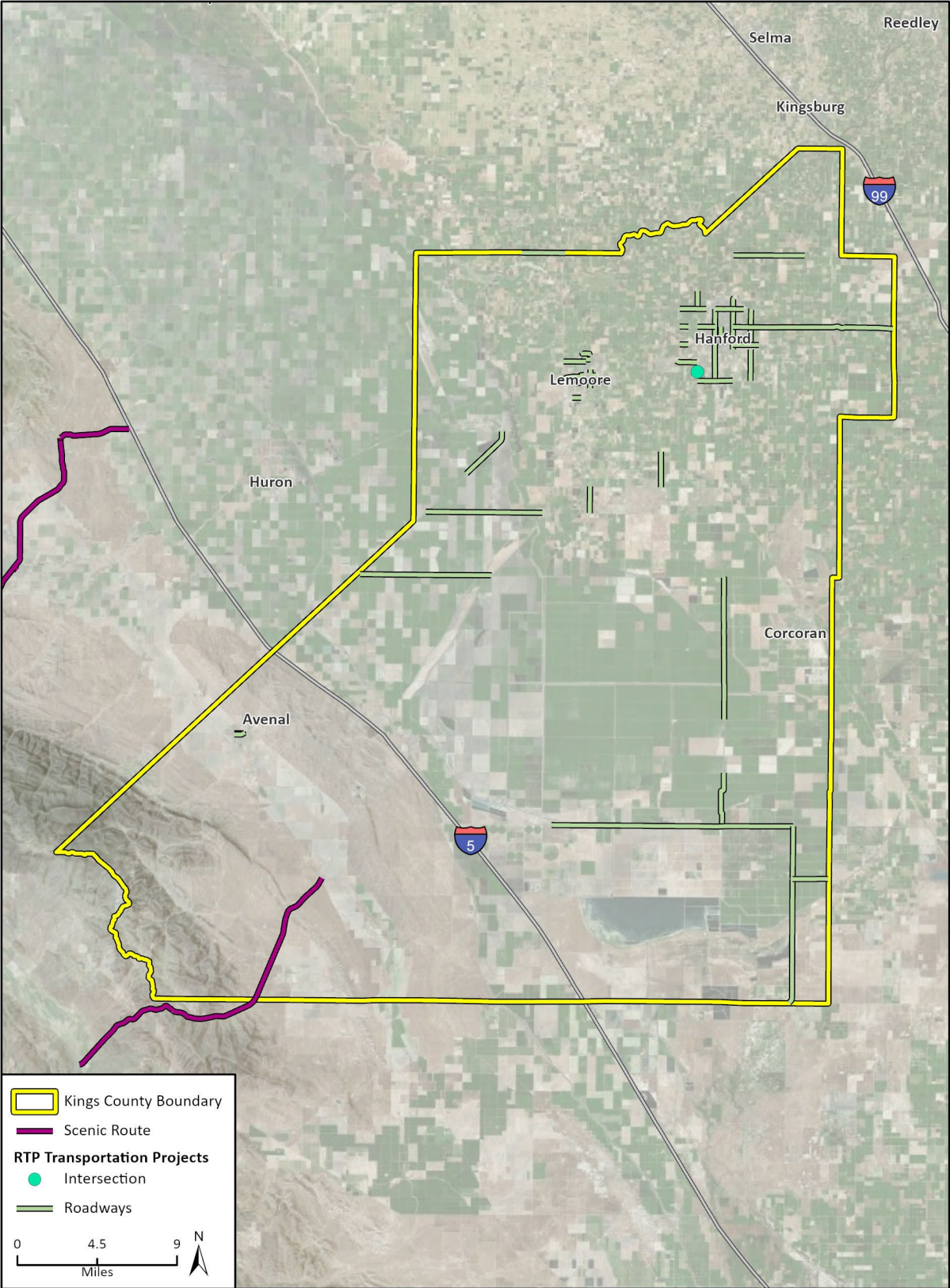
- Rehabilitate South Transient Runway Apron- Design Only
- Rehabilitate South Transient Runway Apron – Construction Phase I
- Rehabilitate South Transient Runway Apron – construction Phase II
- Rehabilitate Taxiway A, Connector Taxiways & Large Aircraft Apron – design only

### *Operations and Maintenance*

Operations and Maintenance projects in the 2022 RTP/SCS are listed in Table 2-1. These projects are throughout the County. The types of improvements include: upgrading curb ramps, sidewalk and crosswalks, the installation of new centerlines or edge lines and shoulder rumble strips, upgrading water and wastewater systems, implementing/upgrading transportation infrastructure for zero-emission vehicle charging, construction of new auxiliary lane and arterial roadway, addressing and maintaining areas roadsides and drainages, re/paving multi-use paths, implementing a Pavement Maintenance Program, and installing traffic signals and pedestrian facilities.



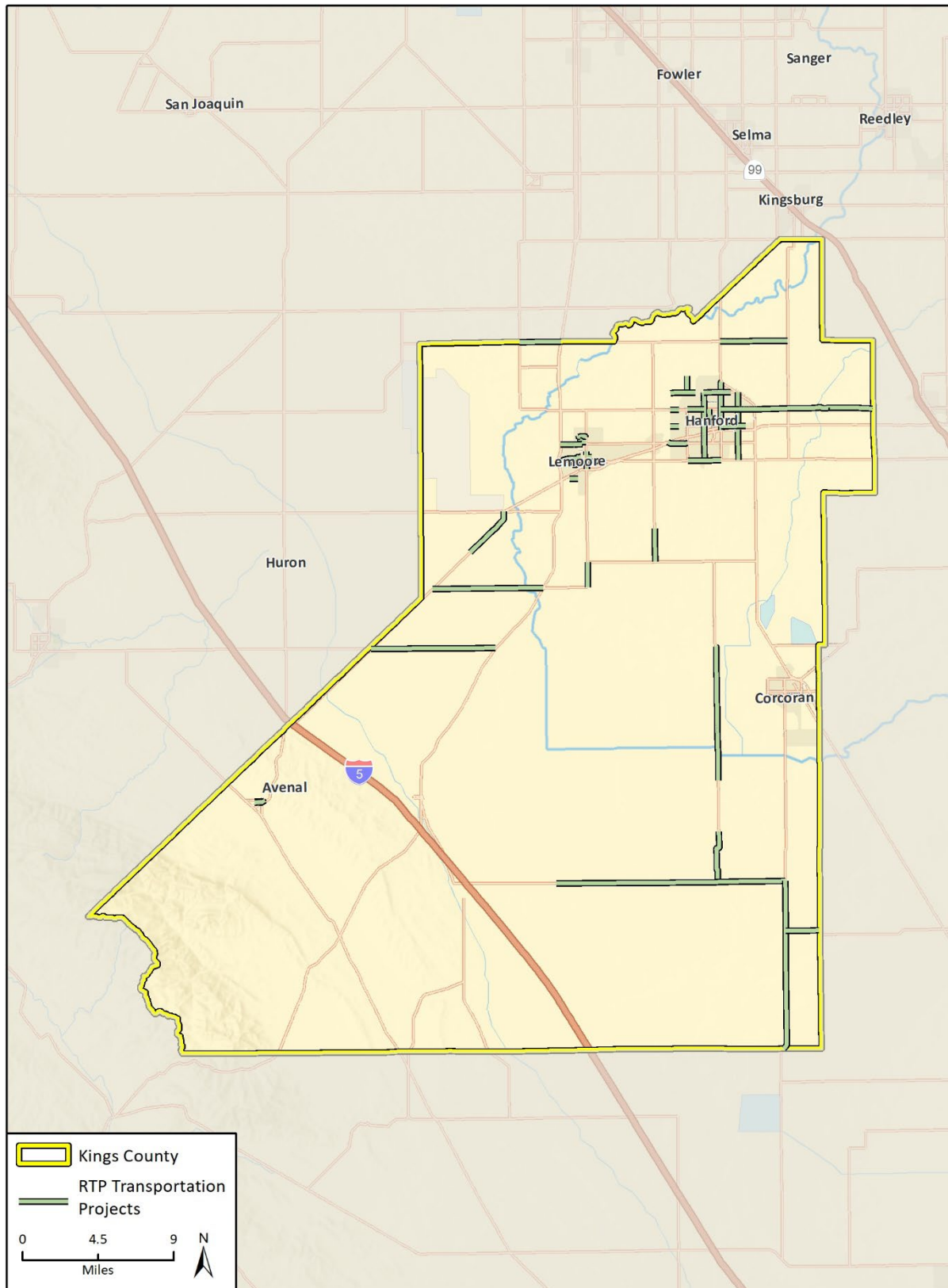
Figure 2-2 2022 RTP/SCS Transportation Improvement Projects – Countywide



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Additional data provided by Caltrans, 2018.

KCAG EIR  
Fig 4.1-1 RTP/SCS Projects and KCAG Region Scenic Highway Routes

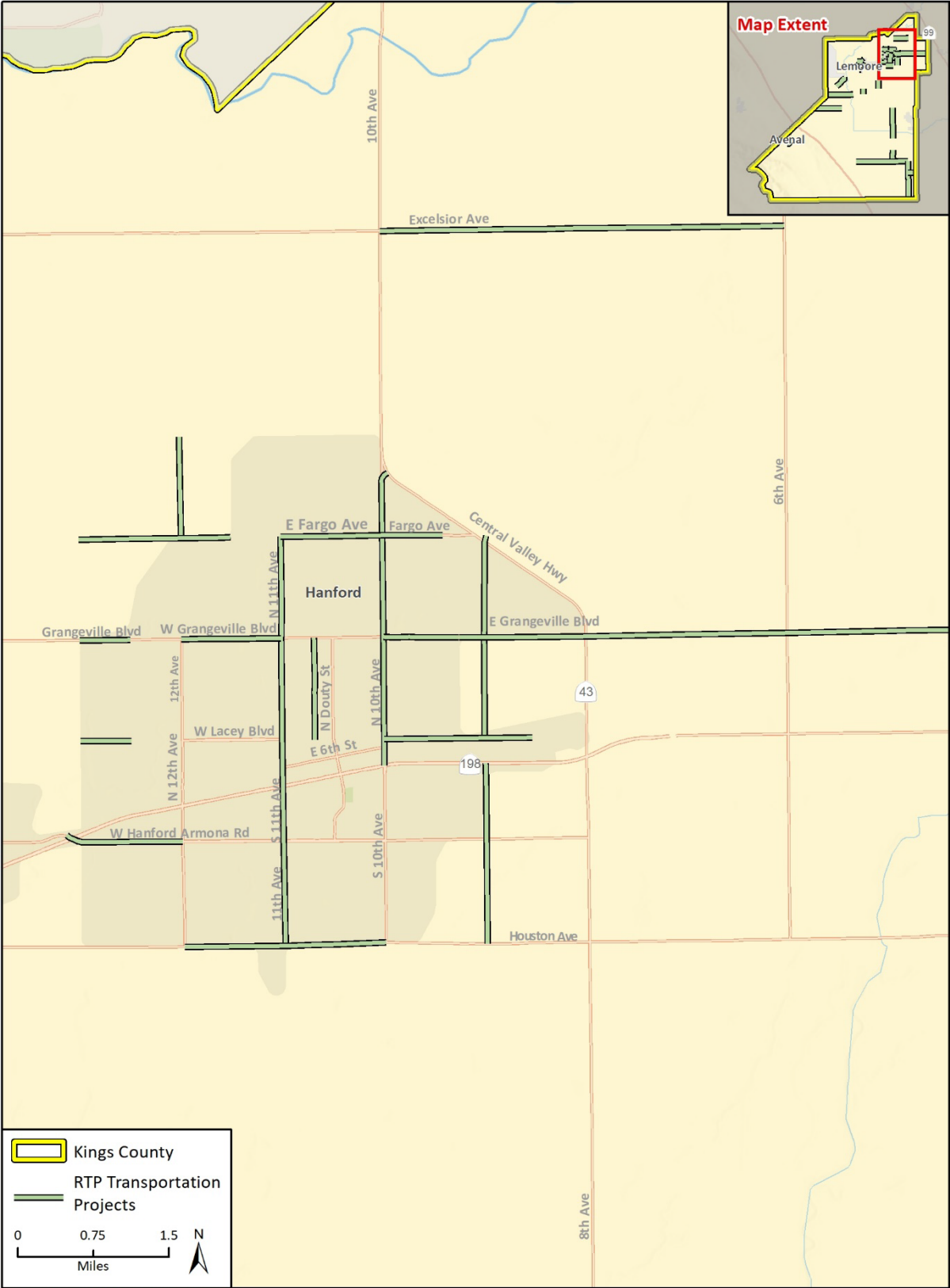
**Figure 2-3 2022 RTP/SCS Transportation Improvement Projects – Hanford**



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Additional data provided by Stanislaus County, 2018.

Fig X City Improvement Projects

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

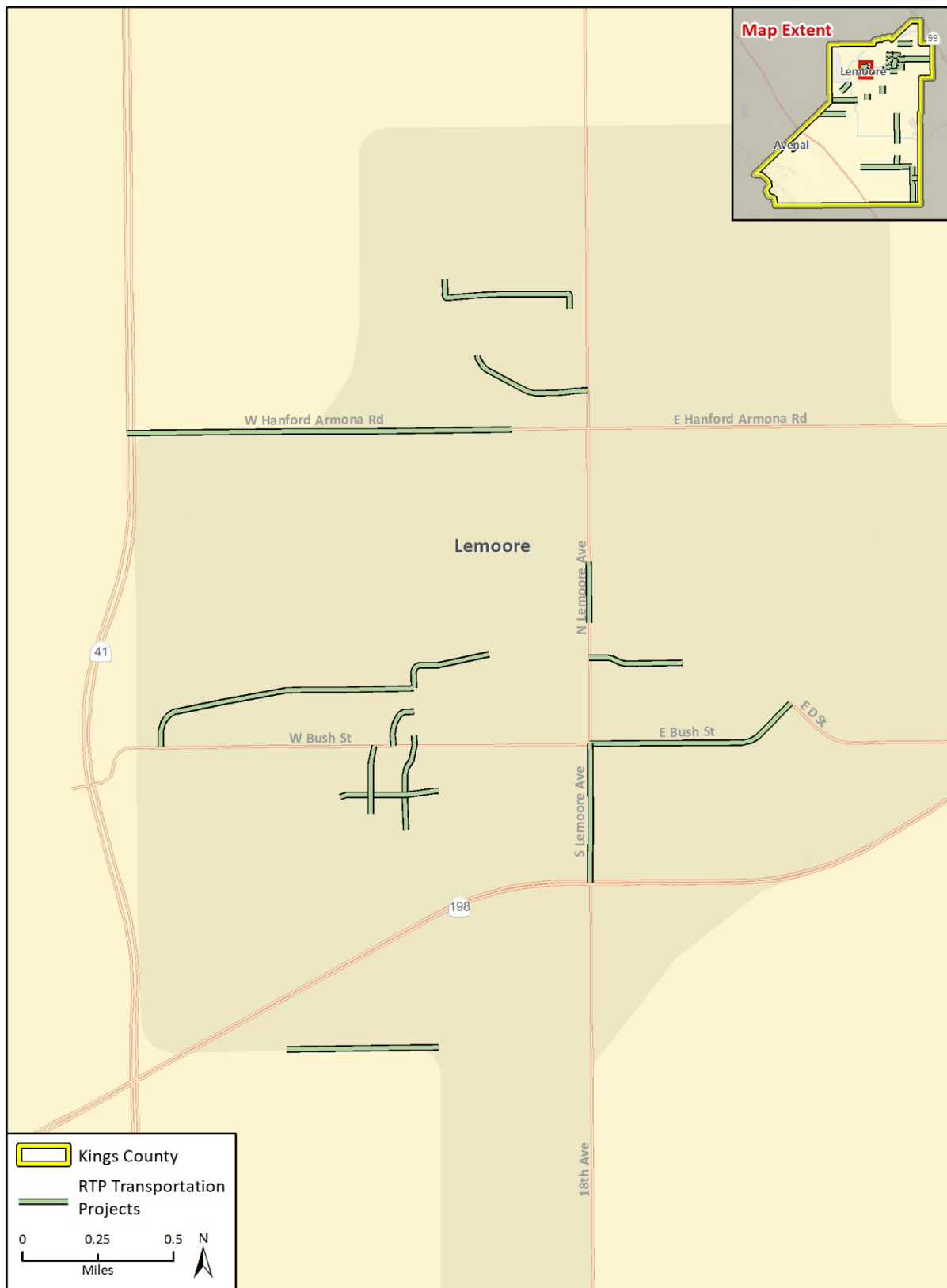


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Additional data provided by Stanislaus County, 2018.

Fig X City Improvement Projects



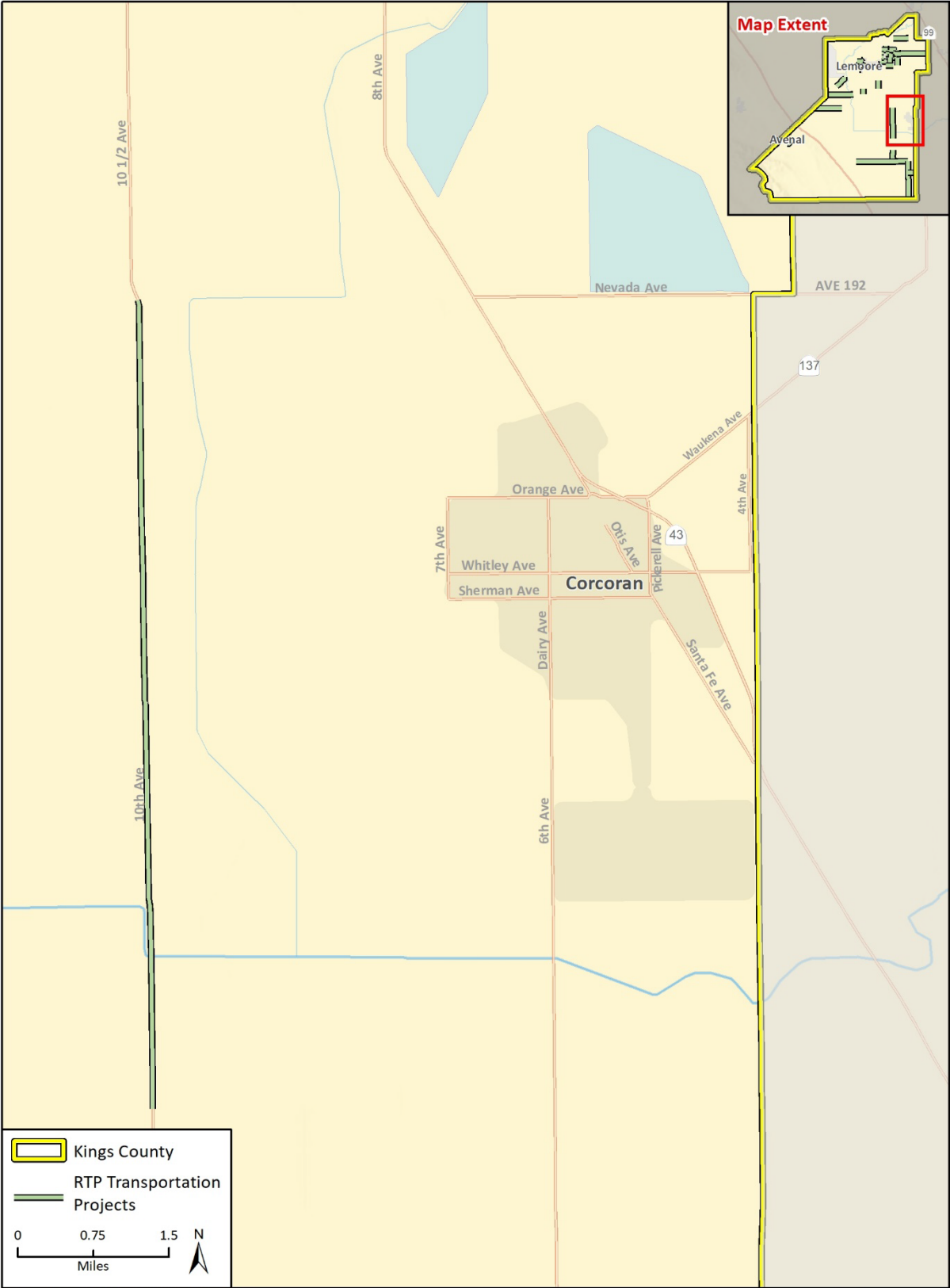
**Figure 2-5 2022 RTP/SCS Transportation Improvement Projects – Corcoran**



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Additional data provided by Stanislaus County, 2018.

Fig X City Improvement Projects

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



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Additional data provided by Stanislaus County, 2018.

Fig X City Improvement Projects

**Figure 2-7 2022 RTP SCS Transportation Improvement Projects - Avenal**



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Additional data provided by Stanislaus County, 2018.

Fig X City Improvement Projects

## 2.7 Intended Use of the EIR

### 2.7.1 Agencies Expected to Use EIR in Decision-making

The *CEQA Guidelines* (Section 15124(d)) require EIRs to identify the agencies that are expected to use the EIR in their decision-making, and the approvals for which the EIR will be used. KCAG will use this Program EIR as part of its review and approval of the 2022 RTP/SCS. The sponsor agencies for projects analyzed in this program EIR may use it as the basis for cumulative analysis of specific project impacts, together with the projected growth in the region. Cities and counties may use information in this EIR in their future housing elements. In addition, for projects that may be eligible for CEQA Streamlining, applicable mitigation measures from this EIR shall be incorporated into those projects as appropriate. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions. It is the intent of KCAG that member agencies and others use the information contained within the Program EIR in order to “tier” subsequent environmental documentation of projects in the region. Information from this document may also be incorporated in future County Congestion Management Programs and associated environmental documents, as applicable.

The 2022 RTP/SCS is intended to meet the changing socioeconomic, transportation infrastructure, financial, technological, and environmental conditions of the region. Individual projects are preliminarily identified in the 2022 RTP/SCS; however, this Program EIR is programmatic in nature and does not specifically analyze these projects. Project-level analysis will be prepared by implementing agencies on a project-by-project basis. Project-specific planning and implementation undertaken by each implementing agency will depend on a number of issues, including: policies, programs and projects adopted at the local level; restrictions on federal, state and local transportation funds; the results of feasibility studies for particular corridors; and further environmental review of proposed projects.

This EIR is also intended to help activate the CEQA streamlining benefits of SB 375 for local jurisdictions and private development, described in Section 1.3.1, *CEQA Streamlining*.

### 2.7.2 Project Permits and Approvals

To complete the 2022 RTP/SCS process, KCAG will first adopt the 2022 RTP/SCS and certify the EIR, and adopt any specific findings and Statements of Overriding Considerations to complete the CEQA review process. Additional environmental review will be conducted by project sponsors, as the lead agency for the individual projects contained within the 2022 RTP/SCS, prior to project implementation.

The approval of the 2022 RTP/SCS is at the discretion of the KCAG Board. Depending on the location of the project, future approvals for individual transportation projects identified in the 2022 RTP/SCS would have to be completed by one or more of the following agencies:

- Kings County Association of Governments
- California Department of Transportation (Caltrans) – Roadway and Aviation
- California Public Utilities Commission’s Rail Crossings Engineering Section (RCES)
- Cities of Hanford, Lemoore, Corcoran, and Avenal
- County of Kings
- Kings Area Regional Transit (KART)

- Corcoran Area Transit (CAT)
- Hanford Municipal Airport

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

## 2.8 Relationship with Other Plans and Programs

The RTP/SCS provides a sound basis for the allocation of state and federal transportation funds for transportation projects within the KCAG region over the subsequent 25-years. The plan follows guidelines established by the State of California Transportation Commission to:

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

The 2022 RTP/SCS Program EIR builds on the analysis and mitigation contained in the 2018 RTP/SCS Program EIR. The 2022 RTP/SCS project list is similar to the project list for the 2018 RTP/SCS, although some of the transportation projects from the 2018 RTP/SCS are now under construction. The 2022 RTP/SCS evaluates the most recent projects, policies and the most recently selected preferred land use scenario in the SCS and provides more direct comparisons between current conditions and expected future Plan conditions. In addition, the RTP/SCS has been evaluated for consistency with the goals, policies and objectives currently being implemented by municipal and county planning agencies within the county as well as the Local Agency Formation Commission (LAFCO) for Kings County.

**Table 2-1 KCAG RTP – Tier 1 Projects**

Location/Type	Project	Description
<b>Avenal</b>		
	7th Ave	Reconstruct and improve curb/ramps
	Central Ave	Reconstruct and improve curb/ramps
	Stanislaus St	Reconstruct and improve curb/ramps
	Merced St	Reconstruct and improve curb/ramps
<b>Avenal Active Transportation</b>		
	First Avenue	Continuous bike lanes (Class II)
	Seventh Avenue	Continuous bike lanes (Class II)
	Hanford Avenue	New bike route (Class III)
	Monterey Street	New bike route (Class III)
	Big Tar Canyon Road	Paved multi-use path

Kings County Association of Governments  
**2022 Regional Transportation Plan/Sustainable Communities Strategy**

Location/Type	Project	Description
	San Joaquin Street	Separated bikeway (Class IV)
	Hydril Road	Paved multi-use path
<b>Corcoran</b>		
	Various Locations	Pavement Maintenance Program
	Various Locations	Pavement Maintenance Program
	Various Locations	Pavement Maintenance Program
	Various Locations	Pavement Maintenance Program
	Various Locations	Pavement Maintenance Program
	Various Locations	Pavement Maintenance Program
	Various Locations	Pavement Maintenance Program
	Various Locations	Pavement Maintenance Program
<b>Corcoran ATP</b>		
	Orange Avenue	Bike lanes (Class II) or bike route (Class III)
	North Avenue	Bike lanes (Class II) or bike route (Class III)
	Patterson Avenue	Bike lanes (Class II) or bike route (Class III)
	Whitley Avenue	Bike lanes (Class II) or bike route (Class III)
	Sherman Avenue	Bike lanes (Class II) or bike route (Class III)
	Oregon Avenue	Bike lanes (Class II) or bike route (Class III)
	Hydril Road	Paved multi-use path
	6 1/2 Avenue	Bike lanes (Class II) or bike route (Class III)
	Dairy Avenue	Bike lanes (Class II) or bike route (Class III)
	Letts Avenue	Bike lanes (Class II) or bike route (Class III)
	Otis Avenue	Bike lanes (Class II) or bike route (Class III)
	Chittenden Avenue	Bike lanes (Class II) or bike route (Class III)
	Flory Avenue	Bike lanes (Class II) or bike route (Class III)
	King Avenue	Bike lanes (Class II) or bike route (Class III)
	Dairy Avenue	Multiple gaps, mostly north of Whitley and south of Bainum
	Josephine Avenue	Multiple gaps, mostly south of Patterson
	Letts Avenue	Multiple gaps, on both sides
	Otis Avenue	Gap on the west side
	Orange Avenue	Gap on the south side
	North Avenue	Multiple gaps, on both sides
	Patterson Avenue	Multiple gaps, on both sides
	Whitley Avenue	Two gaps
	Sherman Avenue	Multiple gaps, on both sides
	Bainum Avenue	Multiple gaps, mostly on the north side
	Oregon Avenue	Multiple gaps, mostly on the south side

Location/Type	Project	Description
<b>Corcoran: Corcoran Area Transit (CAT)</b>		
		Install bus shelters with advertising
		Purchase and install new electronic fare boxes
		Beginning stages of Implementation of Zero Emission fleet
		Beginning stages of Implementation of cashless fare box
<b>Hanford</b>		
	10th Ave	Rehabilitate/Overlay
	10th Ave	Rehabilitate/Overlay
	11th Ave	Rehabilitate/Overlay
	11th Ave	Rehabilitate/Overlay
	11th Ave	Rehabilitate/Overlay
	11th Ave	Rehabilitate/Overlay
	11th Ave	Rehabilitate/Overlay
	11th Ave	Rehabilitate/Overlay
	12th Ave	Widen from 2 to 4 lanes w/ median
	12th Ave	Install traffic signals and pedestrian facilities
	12th Ave	Signal
	9th Ave	New arterial roadway – 4 lanes w/ median
	9th Ave	Install traffic signals and pedestrian facilities
	9th Ave	New arterial roadway – 4 lanes w/ median
	9th Ave	Install traffic signals and pedestrian facilities
	E Lacey Blvd	Widen from 2 to 4 lanes w/ left turn pockets
	E Lacey Blvd	Widen from 2 to 4 lanes w/ left turn pockets
	Fargo Ave	Widen from 2 to 4 lanes w/ left turn pockets
	Fargo Ave	Widen from 2 to 4 lanes w/ left turn pockets
	Fargo Ave	Install traffic signals and pedestrian facilities
	Fargo Ave	Rehabilitate/Overlay
	Grangeville Blvd	Rehabilitate/Overlay
	Grangeville Blvd	Widen from 2 to 4 lanes w/ left turn pockets
	Grangeville Blvd	Rehabilitate/Overlay
	Grangeville Blvd	Rehabilitate/Overlay
	Grangeville Blvd	Widen from 2 to 4 lanes w/ median
	Grangeville Blvd	Install traffic signals and pedestrian facilities
	Hanford Armona Rd	Widen from 2 to 4 lanes w/ left turn pockets
	Houston Ave	Widen from 2 to 4 lanes w/ median
	Houston Ave	Install traffic signals and pedestrian facilities
	Houston Ave	Widen from 2 to 4 lanes w/ median
	Houston Ave	Install traffic signals and pedestrian facilities
	Redington St	Rehabilitate/Overlay
	W Lacey Blvd	Widen from 2 to 4 lanes w/ median

Kings County Association of Governments  
**2022 Regional Transportation Plan/Sustainable Communities Strategy**

Location/Type	Project	Description
<b>Hanford Bicycle Project</b>		
	13th Avenue	Bike route (Class III)
	Centennial Drive	Bike lanes (Class II) or bike route (Class III)
	12th Avenue	Bike lanes (Class II)
	12th Avenue	Bike route (Class III)
	Fitzgerald Lane	Bike route (Class III)
	Kings County Drive / Mall Drive	Bike route (Class III)
	University Avenue	Bike route (Class III)
	Campus Drive	Bike route (Class III)
	11 1/2 Avenue / Echo Lane	Bike route (Class III)
	Glacier Way	Bike route (Class III)
	11th Avenue	Bike lanes (Class II) or bike route (Class III)
	11th Avenue	Bike route (Class III)
	Williams Street / Jones Street	Bike route (Class III)
	Redington Street	Bike lanes (Class II)
	10 1/2 Avenue	Bike route (Class III)
	Mission Drive	Bike route (Class III)
	10th Avenue	Bike route (Class III)
	Neill Way	Bike route (Class III)
	9 1/4 Avenue	Bike route (Class III)
	9th Avenue	Bike route (Class III)
	Flint Avenue	Bike route (Class III)
	Pepper Drive / Encore Drive	Bike route (Class III)
	Fargo Avenue	Bike route (Class III)
	Cortner Street	Bike route (Class III)
	Leland Way	Bike route (Class III)
	Mustang Drive / Berkshire Lane	Bike route (Class III)
	Grangeville Boulevard	Bike route (Class III)
	Grangeville Boulevard	Bike route (Class III)
	Liberty Street	Bike route (Class III)
	Ivy Street	Bike route (Class III)
	Lacey Boulevard	Bike route (Class III)
	Lacey Boulevard	Bike route (Class III)
	7th Street	Bike lanes (Class II)
	6th Street	Bike lanes (Class II)
	3rd Street	Bike route (Class III)
	Glendale Avenue	Bike lanes (Class II)
	Davis Street	Bike route (Class III)
	Hanford-Armona Road	Bike route (Class III)
	Hume Avenue	Bike route (Class III)



Location/Type	Project	Description
	Houston Avenue	Bike route (Class III)
	Iona Avenue	Bike route (Class III)
	Idaho Avenue	Bike route (Class III)
	Jackson Avenue.	Bike route (Class III)
<b>Hanford Pedestrian Project</b>		
	Centennial Drive	Hanford Pedestrian Project to Centennial Drive
	12th Avenue	Hanford Pedestrian Project to 12th Avenue
	Phillips Street	Hanford Pedestrian Project to Phillips Street
	Irwin Street	Hanford Pedestrian Project to Irwin Street
	Douty Street	Hanford Pedestrian Project to Douty Street
	10th Avenue	Hanford Pedestrian Project to 10th Avenue
	9 ¼ Avenue	Hanford Pedestrian Project to 9 ¼ Avenue
	Fargo Avenue	Hanford Pedestrian Project to Fargo Avenue
	Leland Way	Hanford Pedestrian Project to Leland Way
	Grangeville Boulevard	Hanford Pedestrian Project to Grangeville Boulevard
	Greenfield Avenue	Hanford Pedestrian Project to Greenfield Avenue
	Elm Street	Hanford Pedestrian Project to Elm Street
	West Lacey Boulevard	Hanford Pedestrian Project to West Lacey Boulevard
	East Lacey Boulevard	Hanford Pedestrian Project to East Lacey Boulevard
	Second Street	Hanford Pedestrian Project to Second Street
	Hanford–Armona Road	Hanford Pedestrian Project to Hanford–Armona Road
<b>Hanford Aviation Projects</b>		
	Hanford Municipal Airport	Rehabilitate South Transient Runway Apron – Design Only
	Hanford Municipal Airport	Rehabilitate South Transient Runway Apron – construction Phase I
	Hanford Municipal Airport	Rehabilitate South Transient Runway Apron – construction Phase II
	Hanford Municipal Airport	Rehabilitate Taxiway A, Connector Taxiways & Large Aircraft Apron –design only
<b>Lemoore</b>		
	Olive Ave	Overlay
	Oakdale Ln	Overlay
	E St	Overlay
	W Deodar Ln	Overlay
	S Byron Ave	Overlay
	Cambridge Dr	Overlay
	E D St	Overlay
	W Burlwood Ln	Overlay
	Bush St	Overlay
	W D St	Overlay

Kings County Association of Governments  
**2022 Regional Transportation Plan/Sustainable Communities Strategy**

Location/Type	Project	Description
	Hanford Armona Rd	Overlay
	Hanford Armona Rd	Overlay
	Hanford Armona Rd	Overlay
	Iona Ave	Overlay
	Lemoore Ave	Overlay
	Lemoore Ave	Overlay
<b>Lemoore Bicycle List</b>		
	19th Avenue	Preliminary Planning
	Hill Street (east side)	Preliminary Planning
	Follett Street	Preliminary Planning
	Cinnamon Dr. (south side)	Preliminary Planning
	Bush Street (south side)	Preliminary Planning
	Bush Street	Preliminary Planning
	Bush Street (east side)	Preliminary Planning
	Cedar Lane (north side)	Preliminary Planning
	Silverado Drive (south side)	Preliminary Planning
<b>Lemoore Pedestrian Projects</b>		
	19th Avenue	Preliminary Planning
	Liberty Drive	Preliminary Planning
	Vine Street	Preliminary Planning
	Fox Street	Preliminary Planning
	Eton Avenue / Follett Street	Preliminary Planning
	Lemoore Avenue	Preliminary Planning
	Daphne Lane (incl. extension)	Preliminary Planning
	Hanford-Armona Road	Preliminary Planning
	Cinnamon Drive	Preliminary Planning
	D Street	Preliminary Planning
	Bush Street (incl. extension)	Preliminary Planning
	Cedar Lane (incl. extensions)	Preliminary Planning
	Silverado Avenue	Preliminary Planning
<b>Kings County (Including Armona, Home Garden, Stratford, and Kettleman City)</b>		
	Grangeville Blvd	Reconstruct
	Grangeville Blvd	Overlay
	Grangeville Blvd	Overlay
	Grangeville Blvd	Reconstruct
	Grangeville Blvd	Overlay
	18th Ave	Overlay
	10th Ave	Overlay
	10th Ave	Overlay
	10th Ave	Overlay

Location/Type	Project	Description
	10th Ave	Seal Coat
	14th Ave	Overlay
	Excelsior Ave	Overlay
	Excelsior Ave	Reconstruct 1 mile
	Laurel Ave	Overlay
	Nevada Ave	Overlay
	Avenal Cutoff Rd	Overlay
	9th Ave	Overlay
	Utica Ave	Overlay
	6th Ave	Overlay
	6th Ave	Overlay
	6th Ave	Overlay
	Virginia Ave	Overlay
	Utica Ave	Overlay
	Utica Ave	Overlay
	6th Avenue	Class III with stripe
	10th Avenue	Class III with stripe
	10th Avenue	Class III with stripe
	10 1/2 Avenue	Class III with stripe
	12 3/4 Avenue	Class III with stripe
	18th Avenue	Class II
	Fargo Avenue	Class III with stripe
	Flint Avenue	Class III with stripe
	Jackson Avenue	Class III with stripe
	Nevada Avenue	Class III with stripe
	Whitley Avenue	Class III with stripe
	14th Avenue to Front Street	Preliminary Concept Planning
	14th Avenue to North of Hwy 198	Preliminary Concept Planning
	Ambrose/C Streets or at Railroad Avenue/D Street	Preliminary Concept Planning
	East of 14th Avenue to North of Front Street	Preliminary Concept Planning
	Armona North to Front Street	Preliminary Concept Planning
	Front St. to W. Hanford	Preliminary Concept Planning
	Home Garden	Preliminary Concept Planning
	Home Garden	Preliminary Concept Planning
	10 <sup>th</sup> /Home Avenues	Preliminary Concept Planning
	Kettleman City	Preliminary Concept Planning
	Ninth Street	Preliminary Concept Planning
	Stratford	Sidewalks along the major roads
	Stratford	Multi-use path along 20 ½ Ave. south of 6 <sup>th</sup> St.

Kings County Association of Governments  
**2022 Regional Transportation Plan/Sustainable Communities Strategy**

Location/Type	Project	Description
<b>Kings County Area Public Transit Agency (KCAPTA) Capital Projects</b>		
	New KART Intermodal Station	Construction Regional Multimodal Transit Center
	New KART Intermodal Station	Construction Park N Ride Lot
	New KART Intermodal Station	Install Electric Vehicle Chargers (12 EV chargers)
	New KART Intermodal Station	Install Bike Station
	New KART Intermodal Station	Installation of renewable energy (Solar)
	KART Fleet	Purchase Mobility Management Platform
	KART Fleet	Replace CAD/AVL System on Fixed Route Buses
	KART Fleet	Purchase Zero-Emission Vehicles (10)
	KART Fleet	Purchase Zero-Emission Buses (15)
	KART Fleet	Bus Replacement (CNG) (5)
	KART Fleet	Bus Expansion Zero-Emission (4)
	New KART Intermodal Station	Construct Zero-Emission Bus Fueling Station
	New KART Intermodal Station	Purchase Zero-Emission Vehicle for Carshare
	New KART Intermodal Station	Purchase Equipment needed for Maintenance of Transit Center
	KART Fleet	New Pressure Washer
	KART Fleet	Replace Forklift
	KART Fleet	Replace Bus Washer
	KART Fleet	Replace Hydraulic Lifts (2 Sets)
	KART Fleet	Replace Scrubber
	KART Fleet	Replace A/C Recovery Machine
	KART Fleet	Replace Tire Changer with Lift

## 3 Environmental Setting

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This section provides a general overview of the environmental setting for the proposed 2022 RTP/SCS. More detailed descriptions of the environmental setting for each environmental issue area can be found in Section 4.0, *Environmental Impact Analysis*.

### 3.1 Regional Setting

Kings County is located in the southwestern portion of the San Joaquin Valley of California. It is bounded by Fresno County to the north, Tulare County to the east, Kern County and San Luis Obispo County to the south, and Monterey County to the west. The geographic center of the county is approximately 45 miles south of the city of Fresno and 70 miles northwest of the city of Bakersfield.

The majority of Kings County is located on the San Joaquin Valley floor and has an elevation of approximately 200 feet above mean sea level. The foothills of the Coast Ranges occur west of Interstate 5, where elevations increase to 800 feet above sea level and higher.

Kings County is primarily a rural and agricultural area and contains four cities. The two most populous cities; Hanford and Lemoore, are surrounded by several unincorporated communities and are located along the State Route 198 corridor, which runs roughly east-west in the northern portion of the county. These cities together have a population of 83,357 people, approximately 55 percent of the county's total population of 152,023. The city of Corcoran, located on the western edge of the county boundary, has a population of 22,047. The city of Avenal, located southwest of Interstate 5, has a population of 13,186. 78 percent of the population in Kings County resides in one of these four incorporated cities (California Department of Finance [DOF] 2022).

### 3.2 Regional Transportation System

The County's regional transportation system consists of state highways and all levels of roadways, bikeways, several rail lines, and one municipal airport. Regional transportation within the San Joaquin Valley depends heavily on Interstate 5 (I-5). I-5 is a four-lane freeway which runs northwest to southeast in the southern portion of the county, adjacent to the Coast Ranges. I-5 runs through the northernmost portion of the city of Avenal and unincorporated areas of the county, with interchanges providing access to Avenal as well as the unincorporated community of Kettleman City. Other important roadways in Kings County include State Route 41 (SR 41), SR 198, and SR 43. SR 41 is a two- to four-lane freeway which runs southwest to northeast in the county and serves as the main connector between I-5, Lemoore, and Hanford. SR 41 is also the primary north-south route that connects other metropolitan areas in the San Joaquin Valley, including the city of Fresno. SR 198 is a two- to four-lane freeway that runs roughly east-west through the northern portion of the county and bisects the cities of Lemoore and Hanford. SR 198 connects Lemoore, Hanford, and adjacent unincorporated communities to the city of Visalia to the east in Tulare County. State Route 43 is a two- to four-lane highway that runs north-south in the northeastern portion of the county and is the primary connector between the cities of Hanford and Corcoran.

A number of arterial and major roadways in Kings County are vital for regional travel and provide connectivity between incorporated cities and unincorporated communities within the county. These roadways include Kansas Avenue, which runs east-west to connect SR 41 and SR 43 near the

communities of Stratford and Guernsey; West Hanford Armona Road, which runs east-west across between Lemoore and Hanford and through the community of Armona; Avenal Cutoff Road, which runs northeast-southwest along the county's western border and connects SR 198 directly to the city of Avenal; and several other arterial and collector roads.

Due to its rural and agricultural nature, Kings County offers limited alternative modes of transportation. Kings Area Regional Transit (KART) provides the city of Hanford with regular service within the city and daily service to most communities in the county, daily weekday service to Visalia, and service to Fresno three days per week. In 2020, Kings County Area Rural Public Transit Agency (KCAPTA) began operating a new vanpool program. The day-to-day management and actual operations of the system is carried out under contract with a private firm, Enterprise. Currently there are 33 vehicles in maximum service, and this service continues to grow. This service operates 7 days a week.

The City of Corcoran operates a dial-a-ride service through Corcoran Area Transit (CAT), which provides on-demand service for residents of Corcoran and the surrounding area. This ride started off as Kings Area Regional Transit (KART) in 2001 and has since transformed into California Vanpool Authority (CalVans) with hundreds of volunteer-driven vanpools. The program is approved by the Department of Labor and is a continuation of the pilot project, the Agricultural Industries Transportation Services (AITS), for areas where there is high demand for farm labor transportation (CalVans 2018). Each 15-passenger van is operated by a licensed volunteer farm worker and is used to drive themselves and others to work. In more urban areas, CalVans provides eight to 15 passenger vans for groups that wish to carpool to and from work. CalVans also provides services for employees of correctional facilities like the Corcoran State Prison.

Amtrak provides intercity passenger rail service connecting Kings County to major metropolitan areas in California. Amtrak California's San Joaquin Route travels through Kings County along the Burlington Northern/Santa Fe Railroad with stations in Hanford and Corcoran. The San Joaquin Route provides scheduled daily service from Kings County to Sacramento, the San Francisco Bay Area, and Bakersfield. An opportunity also exists to provide coordinated feeder bus service by the KART and Corcoran Dial-a-Ride systems.

Other modes of motorized transit within Kings County include the Hanford Municipal Airport and railroad freight operators. Hanford Municipal Airport is a general aviation facility serving Kings County and the surrounding communities of Hanford, Lemoore, and Armona. The airport serves private aircraft and does not offer commercial flights. Two rail lines operate within Kings County. The Burlington Northern & Santa Fe (BN&SF) Railway travels north-south in the county and runs between Bakersfield in Kern County and Roseville in Placer County. BN&SF connects freight rail with major markets in California including Oakland, San Francisco, San Jose, Sacramento, and Los Angeles. The BN&SF Railway runs through the cities of Hanford and Corcoran in Kings County. The San Joaquin Valley Railroad (SJVRR) runs east-west and travels from Visalia in Tulare County to Huron in Fresno County. SJVRR runs through the cities of Lemoore and Hanford and the unincorporated community of Armona and serves as the freight rail service for the Leprino Foods processing plants in Kings County. The SJVRR has been identified as a strategic transportation corridor that could be used for possible future passenger rail (Cross Valley Rail Study).

Non-motorized active transportation includes transportation by walking, biking, or rolling, which refers to wheelchair or push scooter transportation (KCAAG 2019). In 2019, KCAAG adopted the Kings County Regional Active Transportation Plan, developed to provide a regional bike and pedestrian plan which ensures that facilities planned in different local jurisdictions are integrated and compatible. This Plan contains goals and policies that guide the development of a connected

bikeway system between Hanford, Lemoore, Corcoran, Avenal, and the other areas in the County. Relatively few marked bicycle facilities have been constructed in the County. In agricultural areas, the County provides adequate striping and paving in accordance with Caltrans and American Association of State Highway and Transportation Officials (AASHTO) standards to safely accommodate bicycle travel whenever a roadway is widened and where adequate right-of-way exists (KCAG 2019). There are numerous places in the County where sidewalks do not exist or end abruptly. Most sidewalks are in the developed areas of the County where pedestrian activity is higher. Most rural roads do not have sidewalks, although some have paved shoulders that can be used for walking. Development standards for jurisdictions within Kings County typically require proposed residential and commercial developments located in the urban areas to construct curb, gutter, and sidewalk improvements along the development's frontage on a public street.

### 3.3 EIR Baseline and Approach for Impact Analysis

#### 3.3.1 Mitigation Approach

This EIR includes proposed mitigation measures to reduce impacts and identifies agencies for implementation of those mitigation measures. KCAG as the lead agency has authority to enforce mitigation measures for projects for which they have discretionary authority. However, KCAG does not have authority to require recommended mitigation measures be implemented by other implementing agencies (e.g., Caltrans, counties, cities, transit agencies, etc.) that are responsible agencies for this 2022 RTP/SCS and EIR, but that will be the lead agency for future transportation and land use development projects. It is the responsibility of the lead agency implementing specific 2022 RTP/SCS projects to conduct project-level environmental review consistent with CEQA and where applicable, incorporate mitigation measures provided herein and developed specifically for the project to reduce impacts. Project-specific environmental documents may adjust the mitigation measures identified in this EIR as necessary to respond to site-specific conditions.

#### 3.3.2 EIR Baseline

Section 15125 of the *CEQA Guidelines* states that an EIR “must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation (NOP) is published.” Section 15125 states that this approach “normally constitute[s] the baseline physical conditions by which a lead agency determines whether an impact is significant.” In certain instances, the lead agency has the discretion to use a baseline other than existing conditions at the time of the release of the NOP based on the information available at the time the analysis is being performed.

This EIR evaluates potential impacts against existing conditions at the time of the release of the NOP (October 2021), where information is available, for issue areas that would not be substantially influenced by future regional growth that would occur with or without implementation of the RTP/SCS. It was determined that for these issues a comparison to current, existing baseline conditions would provide the most relevant information for the public, responsible agencies, and KCAG decision-makers. These issue areas include:

- Aesthetics
- Air Quality
- Agricultural and Forestry Resources
- Greenhouse Gas Emissions and Climate Change
- Hydrology and Hazards
- Land Use

- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Noise
- Transportation
- Tribal Cultural Resources
- Wildfire

For air quality, greenhouse gas, noise, and traffic environmental impacts resulting from the 2022 RTP/SCS, this EIR evaluates potential impacts against both (1) a forecast future baseline condition and (2) current, existing baseline conditions, controlling for impacts caused by population growth and other factors that would occur whether or not the RTP/SCS is adopted. The RTP/SCS is a long-term, approximately 25-year plan that organizes transportation projects and land use patterns to the year 2046. It is important to emphasize that population growth, urbanization, and volume of average daily traffic generated in the Kings County will increase by 2046, with or without implementation of the RTP/SCS, as a result of a range of demographic and economic factors independent of policy and land use decisions by KCAG and its member agencies. Therefore, this Program EIR evaluates potential impacts against both a future baseline and a current baseline standard.

An analysis that attributed physical environmental impacts solely to the 2022 RTP/SCS that are in fact the result of future regional growth that would occur in the absence of the 2022 RTP/SCS would overstate the impacts caused by the 2022 RTP/SCS. For this reason, certain environmental issues analyzed in the EIR compare future conditions including the 2022 RTP/SCS with the expected future conditions without the 2022 RTP/SCS (the “future baseline”) as well as to the current baseline, controlling for future regional growth that would occur independently of the 2022 RTP/SCS. These comparisons isolate environmental effects potentially resulting from the 2022 RTP/SCS from those caused by future growth that would occur regardless of the 2022 RTP/SCS, as compared to existing baseline conditions in October 2021.

Thus, the identification of potential impacts and mitigation measures for these environmental issue areas are based on the increment of physical change resulting from the RTP/SCS, rather than the future regional growth that would occur regardless of whether the plan is adopted and implemented. The environmental issue areas for which this approach is used include the following:

The year 2046 is considered to be the horizon year of the proposed 2022 RTP/SCS. While the plan will be implemented gradually over the planning period, this EIR does not analyze interim time frames because the four-year update cycle of the RTP/SCS already requires short-term adjustments to the plan. The one exception to this approach is in Section 4.8, *Greenhouse Gas Emissions/Climate Change*, which examines impacts for the year 2035 in comparison to a baseline of 2005 to satisfy statutory requirements and state goals related to GHG emissions (Health & Safety Code, § 38551(b)).

### 3.3.3 Approach for Cumulative Analysis

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



future projects” (*CEQA Guidelines*, Section 15355). A cumulative impact of concern under CEQA occurs when the net result of combined individual impacts compounds or increases other overall environmental impacts (*CEQA Guidelines*, Section 15355). In other words, cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. CEQA does not require an analysis of incremental effects that are not cumulatively considerable nor is there a requirement to discuss impacts which do not result in part from the project evaluated in the EIR.

### 3.3.3.1 *Cumulative Impact Methodology*

The 2022 RTP/SCS addresses cumulative conditions by design. The 2022 RTP/SCS covers the entire area of Kings County, four cities, and unincorporated areas within the County. It integrates transportation investments with land use strategies for the County. However, KCAG and neighboring agencies Fresno Council of Governments (Fresno COG) and Tulare County Association of Governments (TCAG) share, or are connected by, common economic, social, and environmental characteristics. As such, the environmental analysis of the 2022 RTP/SCS presented throughout this Draft EIR is a cumulative analysis consistent with CEQA policies. Furthermore, this Draft EIR contains detailed analysis of regional (cumulative) impacts, which are differentiated from localized impacts that may occur at the county level.

The following discussion examines impacts associated with implementation of the 2022 RTP/SCS, plus implementation of projected development for jurisdictions adjoining the KCAG region, to develop an approach to address cumulative impacts from growth extending beyond the region’s boundaries.

When evaluating cumulative impacts, CEQA allows the use of either a list of past, present, and probable future projects, including projects outside the control of the lead agency, or a summary of projections in an adopted planning document, or a combination of the two approaches. The cumulative analysis presented below uses a projections-based approach (See CEQA Guidelines Section 15130(B)(1). Land use and growth projections for the region, which are the subject of analysis throughout this EIR, are combined with the growth projections for the adjoining counties. Adjoining counties are listed as follows:

- **Fresno County.** Fresno County is located north and northwest of Kings County in the San Joaquin Valley. The County spans from Coastal Ranges to the foothills of the Sierra Nevada and includes 15 incorporated cities, including the metropolitan area of Fresno (County of Fresno 2000).
- **Tulare County.** Tulare County is located east of Kings County in the southern portion of the San Joaquin Valley and western Sierra Nevadas. Tulare County contains eight incorporated cities, including the county seat of Visalia located 3.5 miles east of Kings County (County of Tulare 2012).
- **Kern County.** Kern County is located south of Kings County and encompasses the southern end of California’s Central Valley. Kern County spans from the southern slopes of the Coast Ranges, east beyond the Sierra Nevadas, and to the Mojave Desert. The County contains 11 incorporated cities including Bakersfield, the county seat (County of Kern 2009).
- **San Luis Obispo County.** The northeast corner of San Luis Obispo borders the southwestern corner of Kings County. San Luis Obispo County encompasses a portion of California’s Central Coast and much of the Coastal Ranges. San Luis Obispo County contains seven incorporated cities, six of which are situated near the coast (County of San Luis Obispo 1998).

- **Monterey County.** Monterey County is located west of the southern portion of Kings County. Monterey County extends from Monterey Bay and includes much of the Big Sur coastline, as well as areas within the Coastal Ranges. There are 12 incorporated cities in Monterey County, most of which are situated near the coast (County of Monterey 2010).

The area that includes Kings County and the above-referenced adjoining counties is referred to in this analysis as the “cumulative impact analysis area.” The population for the cumulative impact analysis area is projected to grow from approximately 3.3 million people to 3.9 million by 2046 (DOF 2021b). Analysis of the cumulative effects of the 2022 RTP/SCS for each environmental issue area is presented at the ends of Sections 4.1 through 4.15.

## 4 Environmental Impact Analysis

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This section discusses the possible environmental effects of the KCAG 2022 RTP/SCS for the specific issue areas that were identified through the scoping process as having the potential to experience significant effects. A “significant effect” as defined by the *CEQA Guidelines* §15382:

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.

The assessment of each issue area begins with a discussion of the environmental setting related to the issue, which is followed by the impact analysis. In the impact analysis, the first subsection identifies the methodologies used and the “significance thresholds,” which are those criteria adopted by KCAG and other agencies, universally recognized, or developed specifically for this analysis to determine whether potential effects are significant. The next subsection describes each impact of the proposed project, mitigation measures for significant impacts, and the level of significance after mitigation. Each effect under consideration for an issue area is separately listed in bold text with the discussion of the effect and its significance. Each bolded impact statement also contains a statement of the significance determination for the environmental impact as follows:

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

Following each environmental impact discussion is a list of mitigation measures (if required) and the residual effects or level of significance remaining after implementation of the measure(s). In cases where the mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed and evaluated as a secondary impact. The impact analysis concludes with a discussion of cumulative effects, which evaluates the impacts associated with the proposed project in conjunction with other planned and pending developments in the area listed in Section 3.0, *Environmental Setting*.

The Executive Summary of this EIR summarizes all impacts and mitigation measures that apply to the proposed project.

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## 4.1 Aesthetics

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This section evaluates potential impacts to visual resources from development facilitated by the proposed 2022 RTP/SCS.

### 4.1.1 Setting

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

#### **Visual Character of the Region**

The KCAG region is within the greater San Joaquin Valley, and is predominantly rural, with urban development focused near the northern half the County, and more rural areas located in between the major cities and in the southern half of the County. The KCAG region continues to be characterized by a mix of rural and built environments. The rural environment predominantly consists of natural or agricultural countryside. The built environment is focused on the communities of Armona, Home Garden, Kettleman City, and Stratford, as well as the incorporated cities of Avenal, Corcoran, Hanford, and Lemoore, which have been shaped by the settlement patterns of residents, businesses, and institutions. Specific attributes of the rural and built environments are discussed in greater detail below.

#### *Rural Environment*

The KCAG region is located in the south-central portion of the San Joaquin Valley. Typical views throughout the valley consist of long-range vistas of the surrounding mountains and foothills, open grazing lands, orchards, vineyards, and agricultural fields. The visual character of the region is rural in nature, characterized by such uses as grazing, open space, and cultivated agriculture, which is the dominant land use due to the valley's fertile alluvial soils and compatible climate. Interspersed among the agricultural fields are natural features such as rivers, hills, and other open spaces, as well as manmade features including urban and rural communities and parks. Kings County's most prominent natural feature is the Kings River, which forms part of the County's northern border. Other local scenic resources include the Coast Ranges, with the unique formations of the Chalk Buttes-Reef Ridge portion of the Kreyenhagen Hills; the Pyramid Hills; Cottonwood Pass; Sunflower Valley; and Cross Creek. The foothill and mountain terrain of the County's southwest edges also provide a distinctive visual backdrop of higher elevations. With the vast majority of the county existing along the San Joaquin Valley floor, the Kettleman Hills are the first elevated foothills that greet travelers along the western edge of the County.

The County's Open Space Element identifies rural buffers between urban areas as "essential to maintaining a community sense of identity and sense of place among residents and visitors." Communities along the State Route 198 corridor are the most likely to grow closer together since other cities and communities have much greater separation between one another. The City of Hanford's westerly growth to 13th Avenue and the community of Armona's growth east to 13th

Avenue have already linked these two areas along 13th Road north of State Route 198. The separation between Armona and the City of Lemoore still encompasses a couple of miles of agricultural land.

### *Built Environment*

Urban development within the County consists of unincorporated urban growth focused in four communities, which include Armona, Home Garden, Kettleman City, and Stratford, while incorporated city growth is within the four cities of Avenal, Corcoran, Hanford, and Lemoore. The unincorporated communities maintain small rural town atmospheres. Armona, Home Garden, and Stratford serve as bedroom communities to the nearby cities of Hanford and Lemoore. The urban character within these communities continues to be defined by residential uses, developed and undeveloped parkland, school and government facilities, various commercial services, and industrial uses. While residential uses range from very low (one unit per acre) to very high density (24+ units per acre), the majority of housing development falls within low to medium densities. Parkland primarily consists of small, developed parks with such amenities as benches, playgrounds, and turfed areas. Public designated land typically accommodates school facilities or government buildings for civic uses. Commercial uses include neighborhood commercial, rural commercial, service commercial, and transportation commercial, which provide the opportunity for various types of retail stores, offices, service establishments, and wholesale businesses to concentrate for the convenience of the public. Examples of such uses include restaurants, retail shops, markets, and convenience stores, which are typically located and grouped on sites, so they are in logical proximity to the respective geographical areas and respective categories of patrons that they serve. Industrial uses include both light industrial and heavy industrial, which accommodate assembly and manufacturing operations of all kinds, including small items, food products, and agricultural related products.

### *Primary Viewing Corridors*

Principal travel corridors are important to an analysis of aesthetic features because they define the vantage point for the largest number of viewers. As of 2018, the California Department of Transportation (Caltrans) has not officially designated any routes within the KCAG region as scenic highways. However, the Caltrans Scenic Highways Map shows a portion of State Route 41, from State Route 33 to the Kern County line, as eligible for designation as a scenic highway (Caltrans, 2018). The 2035 Kings County General Plan designates this roadway as a scenic corridor within the County and plans to coordinate with KCAG to secure its designation as an official State Scenic Highway through the Caltrans Transportation Enhancement program (Kings County, 2010). Scenic resources, as designated by the County, primarily include the Coast Ranges to the southwest, with formations of the Chalk Buttes-Reef Ridge portion of the Kreyenhagen Hills, 4.1-2 the Pyramid Hills, Cottonwood Pass, and Sunflower Valley. Other scenic resources include the various ridgelines located west of the KCAG region in adjacent Fresno County, which are visible along State Route 41 from the northern county line to Kettleman City. Refer to Figure 4.1-1 for a map of scenic lands and highways as designated by the County. The County's Open Space Element also considers oak trees as valued visual resources. Valley oak trees exist in small clusters or intermittently near the Kings River channel. These naturally occurring oaks add to the visual character and distinction of the river corridor along the northern edges of the County. These oak trees primarily exist on private land that is predominantly used for agricultural production.

## **Scenic Views/Resources**

Scenic resources in the KCAG region are primarily comprised of open space areas and agricultural land, as well as rivers and sloughs.

As mentioned above, the landform of the KCAG region and surrounding areas is generally characterized by long-range vistas of surrounding mountains and foothills, open grazing lands, orchards, vineyards, and agricultural fields. Agricultural land in the region is planted predominantly with orchard and row crops. These fields offer expansive views that extend over the valley floor to the Coast Range mountains to the southwest and surrounding foothills. These landscape views are strongly characteristic of the Central Valley and contribute to the regional identity.

State, regional, and some local parks are scenic resources that provide views of natural vegetation, wildlife and wildlife habitat, or open space areas otherwise less disturbed by anthropologic activities, such as farming. Some parks in the region include Burris Park, Hickey Park, Laton-Kingston Park, and Corcoran Community Park.

The Kings River which makes up the northern border of the County, is an integral part of the region's visual character. Connected to the Kings River are many other waterways that strongly influence local land use patterns. Many of these water ways are scenic resources in the KCAG region, including the South Fork Kings River and North Fork Kings River, as well as smaller irrigation ditches and sloughs.

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

### *Light and Glare*

There are two primary sources of light intrusion: 1) light emanating from structural interiors and passing through windows; and 2) light from exterior sources, such as street lighting, building illumination, security lighting, traffic headlights, slope grooming, and landscape lighting. Uses such as residences, hospitals, and hotels are considered light sensitive since they are typically occupied by persons who have expectations for privacy during evening hours and who are subject to disturbance by bright light sources. Glare results mainly from sunlight reflection off building or vehicle surfaces with glass and reflective metal surfaces typically contributing to the highest degree of reflectivity.

At night, light pollution is present in and around the KCAG region; however, light pollution is confined primarily to urban community plan areas, as over 90 percent of the KCAG region is designated for agricultural, natural resource conservation, and open space uses. Specific sources of nighttime illumination include streetlights and vehicular lights associated with roadways, State Routes and Interstate travel, as well as commercial and housing developments. Urban lighting associated with the incorporated cities in Kings County also affects the nearby unincorporated community plan areas. In addition, the prison facilities located in Corcoran and Avenal are the biggest light sources in the KCAG region. Glare within the area is created by exterior building materials, surface paving materials, and vehicles traveling or parked on roads and driveways. Any highly reflective façade materials are of particular concern, increasing a building's reflection of sunlight.

### *Scenic Highways and Roadways*

The State has no designated scenic highways in KCAG region (California Department of Transportation [Caltrans] 2018).

The Caltrans Scenic Highways Map shows a portion of State Route 41, from State Route 33 to the Kern County line, as eligible for designation as a scenic highway (Caltrans 2018). The aforementioned scenic highways and roadways are shown in Figure 4.1-1, along with the location of the transportation projects included in the 2022 RTP/SCS.

### *Wild and Scenic Rivers*

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

## 4.1.2 Regulatory Setting

### **Federal Laws, Regulations, and Policies**

#### *National Scenic Byway Program*

The National Scenic Byway Program was established to preserve and protect the nation’s scenic and less-traveled roads in an effort to promote tourism. For designation as a National Scenic Byway a road must have one of the following six intrinsic qualities: scenic, natural, historic, cultural, archeological, or recreational. Within California, there are eight federally designated byways (FHWA 2021).

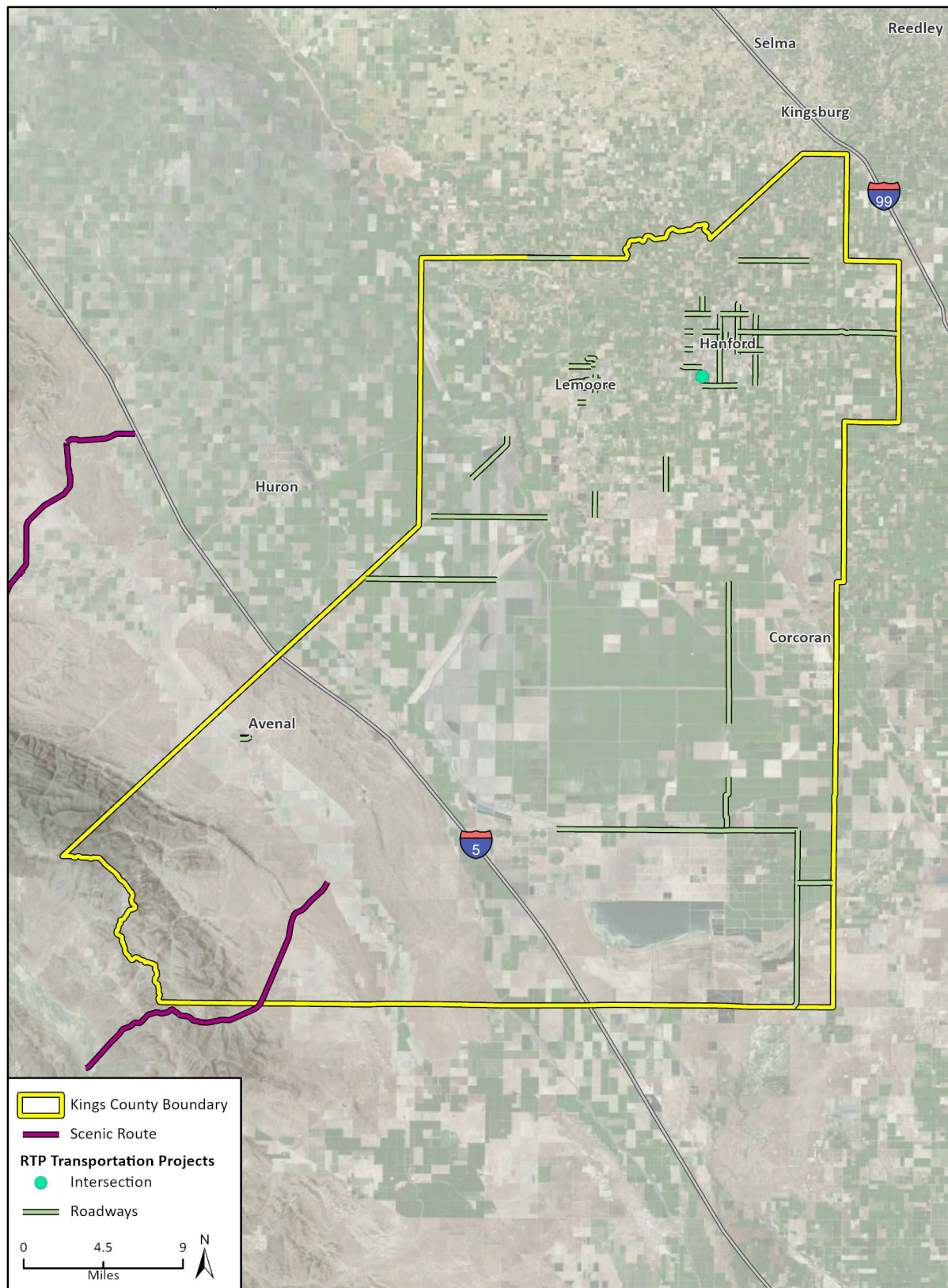
#### *U.S. Department of Transportation Act, Section 4(f)*

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 (FHWA), Federal Transit Administration (FTA) and Federal Aviation Administration (FAA) that involve the use, or interference with use. 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 a minimal impact if consultation with the State Historic Preservation Officer (SHPO) results in a determination that a transportation project will have no adverse effect on the historic site or that there will be no historic properties affected by the proposed action. In this instance, analysis of avoidance alternatives is not required, and the Section 4(f) evaluation process is complete.



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



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 Additional data provided by Caltrans, 2018.

KCAG EIR  
 Fig 4.1-1 RTP/SCS Projects and KCAG Region Scenic Highway Routes

## **State Laws, Regulations, and Policies**

### *California Scenic Highway Program*

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

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

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

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

### *Caltrans Corridor Highway Program*

Caltrans offers cities and counties a nomination process for eligible scenic highways to become officially designated. The jurisdiction must identify and define the scenic corridor of the highway. Scenic corridors are defined as corridors that possesses highly scenic and natural features, as viewed from the highway. Topography, vegetation, viewing distance, and/or jurisdictional lines determine the corridor boundaries. The CPP summarizes the city or county ordinances, zoning and/or planning policies (collectively called “visual quality protection measures”) that preserve the scenic quality of the corridor. The visual quality protection measures and the CPP should be written in sufficient detail as to avoid broad discretionary interpretation; and need to demonstrate a concise strategy to

effectively maintain the scenic character of the corridor. If the visual quality protection measures do not already exist at that local level, additional protection measures would need to be adopted by the local government(s) in order to fulfill the five elements required by legislation defined in the Streets and Highways Code.

The five elements include five legislatively required areas:

1. Regulation of land use and density of development;
2. Detailed land and site planning;
3. Control of outdoor advertising;
4. Careful attention to and control of earthmoving and landscaping; and
5. The design and appearance of structures and equipment.

#### *California Building Energy Efficiency Standards*

California Code of Regulations Title 24, Part 6 contains California's Energy Efficiency Standards for Residential and Non-residential Buildings. California Building Energy Efficiency Standards were established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. The 2019 Energy Code contains standards to reduce energy consumption for outdoor lighting application in residential and non-residential developments. Mandatory measures for outdoor lighting and glare are specified in §110.9, §130.0, and §130.2 of the 2019 Energy Code.

#### *Caltrans Adopt-a-Highway Program*

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

### **Local Laws, Regulations, and Policies**

#### *Kings County 2035 General Plan*

The Kings County 2035 General Plan, as adopted in January 2010, provides the main regulatory framework for addressing aesthetic issues in the County. The Open Space Element includes policy statements to protect and enhance visual resources, including open space, agriculture, natural resources, and scenic vistas. Policies contained in the Open Space Element emphasize the aesthetic value of cultivated land, pasture and grazing land, and vineyards surrounding the urban communities. Policies are also intended to preserve the Kings River and Cross Creek to the north, the Coast Ranges to the southwest, and the Kreyenhagen Hills, the Pyramid Hills, Cottonwood Pass, and Sunflower Valley. State Route 41, south of State Route 33, is also viewed as a scenic highway by the County.

The following goals, objectives, and policies from the Open Space Element pertain to aesthetics impacts from the 2022 RTP/SCS:

**OS Goal B1:** Maintain and protect the scenic beauty of Kings County.

**OS Objective B1.1:** Protect and enhance views from roadways which cross scenic areas or serve as scenic entranceways to cities and communities.

**OS Policy B1.1.1:** Coordinate with the Kings County Association of Governments to explore designation of State Route 41, between State Route 33 and the Kern County line, as an Official State Scenic Highway through the Caltrans Transportation Enhancement program.

**OS Objective B1.2:** Preserve roadside landscapes which have high visual quality and contribute to the local environment.

**OS Policy B1.2.1:** Review new development and utility projects for compatibility and potential for impacting scenic view sheds along highly traveled scenic routes.

**OS Objective B1.3:** Protect the scenic qualities of human-made and natural landscapes and prominent view sheds.

**OS Policy B1.3.1:** Require new development to be designed so that it does not significantly impact or block views of Kings County's natural landscape or other important scenic features. Discretionary permit applications will be evaluated against this requirement as part of the development review process. New developments may be required, as appropriate to:

- Minimize obstruction of views from public lands and rights-of-way.
- Reduce visual prominence by keeping development and structures below ridgelines.
- Limit the impact of new roadways and grading on natural settings. Such limits shall be within design safety guidelines.

**OS Goal C1:** Preserve the visual identities of Community Districts by maintaining open space separations between urban areas.

**OS Objective C1.1:** Preserve open space, maintain rural character, and limit development in community separator areas.

**OS Policy C1.1.1:** Preserve the agricultural open space buffer between the Community of Armona and City of Hanford to maintain community separation between Lacey Boulevard and Front Street along the west side of 13th Avenue.

**OS Policy C1.1.2:** Preserve the Open Space land use buffer around the Armona Community Services District wastewater treatment facility to include territory between 13th and 14th Avenues, and north of Houston Avenue.

**OS Policy C1.1.3:** Preserve the agricultural open space buffer between the Community of Armona and City of Lemoore to maintain community separation between State Route 198 and Hanford Armona Road along the east side of 15th Avenue.

### *Kings County Zoning Ordinance*

The Kings County Zoning Ordinance implements the General Plan by establishing setback, parking and sign standards, building height limits, and building densities. Article 21 of the Zoning Ordinance includes the guidelines for site plan review, which allows the zoning administrator to make a finding that a proposed development is in conformity with the intent and provisions of the ordinance and as a guide for the issuance of building permits. Plan review is also intended to protect the public welfare by ensuring that there will be no adverse effects of a project on surrounding property. It

applies to any use listed within a particular zoning district as a permitted use subject to site plan review. It includes considerations relative to neighborhood compatibility, setbacks, building height, location of service, landscaping, fences and walls, views and obstructions, signs, and lighting. Specifically, plan review ensures that proposed lighting is so arranged as to reflect the light away from adjoining properties. Development review is also a part of the conditional use permit and planned unit development process.

#### *City of Avenal General Plan*

The Avenal 2035 General Plan contains several policies in the Conservation, Natural Resources, and Recreation Element that pertain to the preservation and protection of scenic resources (City of Avenal 2018). For example, Policy NR-4.1 seeks to Minimize visual impacts on Avenal's scenic resources, including views of the surrounding hillsides from public rights-of-way. Policy NR-4.2 seeks to minimize obtrusive light by limiting outdoor lighting that is misdirected, excessive, or unnecessary. In the Land Use Element, Action LUI-1.2B requires that the City maintain scenic entryways (gateways) and roadway corridors into the city through special setback and landscape standards, entry signage, open space and park development, and/or land use designations. These scenic entryways are located at State Route 269/Hydril Road, State Route 269 and Avenal Cutoff Road, State Route 33/W. San Joaquin Street, and State Route 33/South 7th Avenue. In addition, the property located east and northeast of the Avenal Regional Landfill is zoned as a nature preserve and a scenic corridor. This property is visible from California State Route 269 (CA 269).

#### *City of Corcoran General Plan*

The City of Corcoran 2035 General Plan contains policies in the Land Use & Community Design Element that pertain to scenic entryways and roadways corridors in the City (City of Corcoran 2007). For example, Policy 14 seeks to further develop existing gateways and at some future time develop scenic entryways (gateways) and roadway corridors into the City. Existing scenic gateways include State Route (SR) 43/ Santa Fe, SR 43/ Whitley and future gateways include SR 43/ Nevada Avenue, SR 137/ SR 43/ SR 43/ Plymouth, and Whitley Avenue/ 7th Avenue.

#### *City of Hanford General Plan*

The Hanford 2035 General Plan does not contain policies that pertain to the preservation of scenic resources (City of Hanford 2017). There are no roadways or land uses outlined in the General Plan that are categorized as scenic resources. In the Land Use & Community Design Element, there are policies that pertain to the design of roadways in the City of Hanford. Policy L.57 requires that new development projects and major site reconfigurations in the Highway Commercial land use designation provide site layouts, landscaping, and screening so that the site appears aesthetically pleasing from the public street.

#### *City of Lemoore General Plan*

The City of Lemoore 2035 General Plan's Conservation and Open Space Element intends to establish policies and programs for the conservation, development, and use of open space and natural resources in Lemoore (City of Lemoore 2008). The City classifies areas that serve as links between major recreation and open space reservation, including scenic highway corridors, as open space for outdoor recreation. COS-G-1 establishes that the City will acquire, preserve, and maintain open space and natural resources for future generations.

### 4.1.3 Impact Analysis

#### **a. Methodology and Significance Thresholds**

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

It is important to distinguish between public and private views. Private views are those views seen from privately-owned land, including views from private residences and are typically enjoyed by individuals. Public views are experienced by the collective public. These include views of significant landscape features such as the Sierra Nevada Mountain range, as seen from public viewing space, not privately-owned properties. California Environmental Quality Act (CEQA) (PRC §21000 et seq.) case law has established that only public views, not private views, need be analyzed under CEQA. See *Association for Protection etc. Values v. City of Ukiah* (1991) 2 Cal. App. 4th 720 and *Topanga Beach Renters Assn. v. Department of General Services* (1976) 58 Cal. App. 3d 188. Therefore, for this analysis, only public views will be considered when analyzing the visual impacts of implementing the proposed 2022 RTP/SCS.

Appendix G of the State CEQA Guidelines identifies the following criteria for determining whether a project's impacts would have a significant impact related to visual resources:

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

#### **b. Project Impacts and Mitigation Measures**

The following section discusses potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2022 RTP/SCS. Section 4.1.3.c summarizes the impacts associated with capital improvement projects in the proposed 2022 RTP/SCS. Due to the programmatic nature of the proposed 2022 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement projects and future projects under the land use scenario envisioned by the proposed 2022 RTP/SCS could result in the impacts as described in the following section.

**Threshold 1:** Have a substantial adverse effect on a scenic vista

**Threshold 2:** Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway

**IMPACT AES-1 THE PROPOSED TRANSPORTATION PROJECTS AND LAND USE PROJECTS ENVISIONED UNDER THE PROPOSED 2022 RTP/SCS WOULD HAVE A SUBSTANTIAL ADVERSE EFFECT ON SCENIC VISTAS AND SUBSTANTIALLY DAMAGE SCENIC RESOURCES WITHIN HIGHWAYS IDENTIFIED TO HAVE HIGH SCENIC QUALITIES OR DESIGNATED BY THE STATE AS ELIGIBLE SCENIC HIGHWAYS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

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Neither construction nor operation of the new transportation improvements proposed in the 2022 RTP/SCS would affect eligible or designated scenic corridors, or other roadways with scenic qualities. There are no officially designated scenic highways in the region. As discussed in Section 4.1.1, Setting, the segment of Highway 41 from State Route 33 to the Kern County line is the only roadway recognized for its scenic character in the KCAG region, and no transportation improvements with potential to affect public views are 2022 RTP/SCS SEIR proposed for this. Therefore, the proposed 2022 RTP/SCS would have a less than significant impact on scenic corridors.

In the long-term, implementation of the 2022 RTP/SCS would generally result in modification of existing transportation facilities within existing highway, roadway, or railroad rights-of-way. Many of the proposed projects are at-grade with the surrounding environment. As such, most of the road and highway improvements are not likely to result in massive obstructions or blockages of surrounding views nor modify or substantially alter existing scenic resources viewed from a scenic vista or identified scenic highway.

The future land use scenario envisioned by the 2022 RTP/SCS is intended to encourage transit-oriented and infill development. This type of development would help to avoid the loss of scenic resources along Highway 41 and locally designated scenic routes by concentrating development within existing urbanized areas when compared to a future scenario without the 2022 RTP/SCS. When compared to existing conditions, this land use scenario would intensify the built environment within existing urban areas through planned infill development. In addition, this land use scenario would concentrate development near transportation corridors, which would further increase the visibility of future infill and transit-oriented development and potentially impact views of background scenic resources.

Changes to both land use patterns, and transportation improvements have the potential to change the view of the middle ground or background elements of broad viewsheds through the conversion of open space uses to transportation use and/or urban use, or through the removal of visually important resources (such as trees, rocks, or historic buildings). The 2022 RTP/SCS transportation projects could include features, such as sound walls, substantial grading, or structures (for example bridges, elevated passenger/commercial rail tracks) that could disrupt views.

Changes in land use patterns would introduce a variety of urban uses to existing open space land and increase density in existing urban areas. The Kings County General Plan aims to protect and enhance visual resources, including open space, agriculture, natural resources, and scenic vistas with particular emphasis on the aesthetic value of cultivated land, pasture and grazing land, and vineyards surrounding the urban communities. Changes in land use patterns and individual 2022 RTP/SCS transportation projects could cause intermittent interruption in views to users of the highways, roadways, and rail system. Such changes to views would result in significant impacts. In some cases, impacts to visual resources can be reduced to less than significant levels by avoiding



certain high-profile improvements and/or by minimizing alterations, and/or designing new structures so that they do not impede the scenic landscape and/or view.

Not all projects and development included in 2022 RTP/SCS would be infill projects in urbanized areas, and some projects would inevitably be located in rural and other areas in the KCAG region. Therefore, the 2022 RTP/SCS could result in a substantial adverse effect on a scenic vista or substantially damage scenic resources within an eligible scenic highway or a locally identified scenic highway in rural areas of the KCAG region. Impacts would be significant.

#### *Mitigation Measures*

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures. These mitigation measures have been developed for the 2022 RTP/SCS program where applicable for transportation projects that would potentially degrade views from scenic corridors and/or within an eligible state scenic highway. Kings County and cities in the KCAG region can and should implement these measures, where relevant to land use projects when implementing the 2022 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

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

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

##### *AES-1(b) Tree Protection and Replacement*

The implementing agency for new roadways, extensions, and widenings of existing roadways, trails and facility improvements shall, or can and should, avoid the removal of existing mature trees to the extent possible consistent with adopted local City and County policies as applicable. The implementing agency of a particular 2022 RTP/SCS project shall replace any trees lost at a minimum 2:1 basis and incorporate them into the landscaping design for the roadway when feasible. The implementing agency also shall ensure the continued vitality of replaced trees through periodic maintenance.

#### **IMPLEMENTATION AGENCIES AND TIMING**

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



## Significance After Mitigation

Although identified mitigation would help reduce impacts related to eligible state scenic highway corridors and scenic resources, individual transportation infrastructure projects as well as land use development included in 2022 RTP/SCS could still result in obstructions to scenic vistas as seen from public viewing areas. As this EIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable, and these mitigation measures may not be feasible or effective for some projects. Therefore, given the extent of planned land use development and the potential for site-specific visual obstructions from future land use and transportation projects, impacts related to the obstruction of scenic vistas from public viewing areas and impacts to state-designated scenic highway corridors and scenic resources would be significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.

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

**IMPACT AES-2      THE PROPOSED TRANSPORTATION PROJECTS AND LAND USE PATTERNS ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD IN NON-URBANIZED AREAS, SUBSTANTIALLY DEGRADE THE EXISTING VISUAL CHARACTER OR QUALITY OF PUBLIC VIEWS OF THE SITE OR ITS SURROUNDINGS, AND IN AN URBANIZED AREA, WOULD CONFLICT WITH APPLICABLE ZONING AND OTHER REGULATIONS GOVERNING SCENIC QUALITY. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

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### *Non-Urbanized Areas*

Some of the proposed transportation improvements in the 2022 RTP/SCS would introduce visual features that would alter the existing rural or semi-rural character of the area in which they are proposed. New roadways at the outskirts of urbanized areas in the KCAG region, or traversing unincorporated areas to connect cities, would intrude into agricultural lands.

The 2022 RTP/SCS would include new road and highway facilities such as expanded roadways and intersections, and road extensions. Most road and highway projects would occur in areas where transportation infrastructure is already a dominant feature of the landscape. Such transportation projects would not likely degrade the existing visual character of the region because transportation infrastructure is already a dominant feature of the landscape in those areas. In less developed areas of the region, adding new transportation infrastructure would add an element of urban character to previously undeveloped lands. New and extended roadways, such as the widening and new road projects in and near Hanford, would alter the character of agricultural areas. This change in character is primarily due to conversion of farmland and introducing paved surfaces. Ancillary features constructed along new or existing roads (such as lighting, bus shelters, and signs) would further contribute to the trend toward a more urban or suburban visual character. Depending on the design and siting of transportation projects, this could be considered a substantial degradation of the visual character or quality of an area. A complete listing of transportation projects with potential to alter the rural character of the KCAG region is included in Table 4.1-1.

### *Urbanized Areas*

The 2022 RTP/SCS envisions infill development and development near existing transportation corridors, which are generally located in urbanized areas of cities and unincorporated communities. Infill development can be favorable in terms of visual character, as it occurs in areas already

designated for and receiving growth and precludes growth in undeveloped and/or agricultural and rural areas. Infill development, in general, does not significantly change the existing visual character or quality at the regional level, but rather adds to it while preserving the undeveloped character and quality in the agricultural and rural areas.

However, when compared to existing conditions, the 2022 RTP/SCS land use scenario would intensify the built environment within existing urban areas through the implementation of infill and mixed-use development projects, thereby resulting in an overall change in the character of existing urbanized areas to a denser development pattern. In addition, land use projects that do occur in rural or agricultural areas would introduce urban development to areas that were previously undeveloped. Depending on the design and siting of these projects, the resulting change would degrade the visual character or quality of their surroundings. However, new development facilitated under the 2022 RTP/SCS would be required to comply with applicable zoning standards or acquire an approved zoning amendment.

Projects implemented under the 2022 RTP/SCS would be subject to existing regulations that would help to minimize impacts to visual character. For example, in visually sensitive areas, local land use agencies would apply development standards and guidelines to maintain compatibility with surrounding natural areas, including site coverage, building height and massing, building materials and color, landscaping, and site grading. Nevertheless, even with compliance with these standards, the overall visual effect of planned roadway projects and envisioned land use patterns would contribute to an incremental, and over time, substantial transformation in visual character from rural or semi-rural to more urban or suburban throughout the KCAG region. Impacts would be significant. The following mitigation measures would reduce this impact.

## **Mitigation Measures**

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures, along with Mitigation Measures AES-1(a) and AES-1(b), discussed above for Impact AES-1. These mitigation measures have been developed for the 2022 RTP/SCS program where applicable for transportation projects that would potentially degrade views from scenic corridors. Kings County and cities in the KCAG region can and should implement these measures, where relevant to land use projects when implementing the 2022 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

### *AES-2(a) Recontouring for Adjacent Landforms*

Where a particular 2022 RTP/SCS project affects adjacent landforms, the local jurisdiction in which the project is located should ensure that recontouring provides a smooth and gradual transition between modified landforms and existing grade. This requirement can be accomplished through the placement of conditions on the project by the implementing agency during the project specific environmental review.

### *AES-2(b) Landscaping for Landform Variation*

The local jurisdiction in which a particular project is located should ensure that associated landscape materials and design enhance landform variation, provide erosion control and blend with the natural setting. This requirement can be accomplished through the placement of conditions on the project by the local jurisdiction during individual environmental review. To ensure compliance with

approved landscape plans, the implementing agency should provide a performance security equal to the value of the landscaping/irrigation installation.

#### *AES-2(c) Design Measures for Visual Compatibility*

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

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

#### **IMPLEMENTATION AGENCIES AND TIMING**

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

#### **Significance After Mitigation**

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

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

**IMPACT AES-3 DEVELOPMENT OF PROPOSED TRANSPORTATION PROJECTS AND LAND USE PATTERNS ENVISIONED UNDER THE PROPOSED 2022 RTP/SCS WOULD CREATE A NEW SOURCE OF SUBSTANTIAL LIGHT OR GLARE THAT WOULD ADVERSELY AFFECT DAYTIME OR NIGHTTIME VIEWS IN THE AREA. IMPACTS ARE SIGNIFICANT AND UNAVOIDABLE.**

New or intensified lighting from land use development envisioned in the 2022 RTP/SCS would be concentrated in areas with existing sources of light and glare. In these infill areas, such increases may not adversely affect nighttime views because existing sources of light, glare, and shadow are already a dominant feature of the urban landscape. However, the intensity of light and glare in these urban areas could increase as a result of infill and mixed-use projects under the 2022 RTP/SCS, depending on site-specific conditions and lighting design associated with new structures/roadways. Additionally, road projects in rural areas could increase lighting in areas that are characterized by dark night skies. Exterior lighting in some areas would be limited by compliance with existing lighting regulations, as discussed in Section 4.1.2, *Regulatory Setting*. Because of the potential for increased lighting affecting nighttime views, impacts from land use development would be potentially significant.

Improvements to existing roadways and highways would not significantly increase the amount of light and glare in an area, as these improvements would take place on existing facilities that have existing sources of light and glare. Increases in light and glare from new reflective signage, streetlights, intersection control devices and other improvements would be relatively minor compared to existing conditions. However, the expansion and widening of existing roadways or construction of new roadways would allow a greater volume of vehicles to travel through a given segment of roadway or highway throughout the day, or introduce vehicles into a new area, which would have the potential to introduce new or additional vehicle headlights as new light sources. In addition, some of the new transportation facilities included in the 2022 RTP/SCS would directly introduce light, including: installation of traffic signals and pedestrian signals in the KCAG region. The introduction of light and glare could adversely affect day or nighttime views.

Overall, light and glare impacts from transportation improvements and projects envisioned under the 2022 RTP/SCS would be significant because there would be new sources of substantial light or glare.

### **Mitigation Measures**

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures for transportation projects that would result in light and glare impacts. Kings County and cities in the KCAG region can and should implement these measures, where relevant to land use projects implementing the 2022 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

#### *AES-3(a) Roadway and Project Lighting*

The implementing shall, or can and should, minimize roadway lighting to the extent possible, consistent with safety and security objectives, and shall not exceed the minimum height requirements of the local jurisdiction in which the project is proposed. This may be accomplished

through the use of back shields, hoods, low intensity lighting, and using as few lights as necessary to achieve the goals of the project.

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

- Lighting shall consist of cutoff-type fixtures that cast low-angle illumination to minimize incidental spillover of light into adjacent properties and undeveloped open space. Fixtures that project light upward or horizontally shall not be used.
- Lighting shall be directed away from habitat and open space areas adjacent to the project site.
- Light mountings shall be downcast, and the height of the poles minimized to reduce potential for backscatter into the nighttime sky and incidental spillover of light onto adjacent private properties and undeveloped open space. Light poles will be 20 feet high or shorter. Luminary mountings shall have non-glare finishes.
- Exterior lighting features shall be directed downward and shielded in order to confine light to the boundaries of the subject project. Where more intense lighting is necessary for safety purposes, the design shall include landscaping to block light from sensitive land uses, such as residences.

#### *AES-3(b) Glare Reduction Measures.*

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

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

#### **IMPLEMENTATION AGENCIES AND TIMING**

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

## Significance After Mitigation

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

## c. Specific Projects That May Result in Impacts

Table 4.1-1 identifies examples of transportation projects with the potential to cause or contribute to direct or indirect impacts to aesthetics and visual resources such as those discussed above. These projects are representative and were selected based on their potential scope and likelihood to result in the impacts identified above. Additional specific analysis would be required as individual projects are implemented to determine the project specific magnitude of impact. Mitigation discussed above would apply to these specific projects.

**Table 4.1-1 2022 RTP/SCS Projects That May Result in Impacts to Scenic Routes**

Jurisdiction	Location	Project Limits	Project Description	Potential Impact
Avenal	7th Ave	San Joaquin St to SR 269	Reconstruct and improve curb/ramps	AES-1a, AES-1b, AES-2
Avenal	Central Ave	San Joaquin St to SR 269	Reconstruct and improve curb/ramps	AES-1a, AES-1b, AES-2
Avenal	Stanislaus St	San Joaquin St to 2nd Ave	Reconstruct and improve curb/ramps	AES-1a, AES-1b, AES-2
Avenal	Merced St	San Joaquin St to 2nd Ave	Reconstruct and improve curb/ramps	AES-1a, AES-1b, AES-2
Hanford	10th Ave	Sr 198 to Grangeville Blvd	Rehabilitate/Overlay	AES-1a, AES-1b, AES-2
Hanford	10th Ave	Grangeville Blvd to SR 43	Rehabilitate/Overlay	AES-1a, AES-1b, AES-2
Hanford	11 <sup>th</sup> Ave	Ivy St to Grangeville Blvd	Rehabilitate/Overlay	AES-1a, AES-1b, AES-2
Hanford	11 <sup>th</sup> Ave	Grangeville Blvd to Fargo Blvd	Rehabilitate/Overlay	AES-1a, AES-1b, AES-2
Hanford	11 <sup>th</sup> Ave	Lacey Blvd to Fargo Ave	Rehabilitate/Overlay	AES-1a, AES-1b, AES-2
Hanford	11 <sup>th</sup> Ave	Hanford Armona Rd to Lacey Blvd	Rehabilitate/Overlay	AES-1a, AES-1b, AES-2
Hanford	11 <sup>th</sup> Ave	Hanford Armona Rd to Houston Ave	Rehabilitate/Overlay	AES-1a, AES-1b, AES-2
Hanford	12th Ave	Fargo Ave to Flint Ave	Widen from 2 to 4 lanes w/ left turn pockets	AES-1a, AES-1b, AES-2
Hanford	12th Ave	Fargo Ave to Flint Ave	Install traffic signals and pedestrian facilities	AES-1a, AES-1b, AES-2, AES-3
Hanford	9 <sup>th</sup> Ave	Lacey Blvd to Grangeville Blvd	New arterial roadway – 4 lanes w/ median	AES-1a, AES-1b, AES-2
Hanford	9 <sup>th</sup> Ave	Lacey Blvd to Grangeville Blvd	Install traffic signals and pedestrian facilities	AES-1a, AES-1b, AES-2, AES-3

<b>Jurisdiction</b>	<b>Location</b>	<b>Project Limits</b>	<b>Project Description</b>	<b>Potential Impact</b>
Hanford	9 <sup>th</sup> Ave	Grangeville Blvd to Fargo Ave	New arterial roadway – 4 lanes w/ median	AES-1a, AES-1b, AES-2
Hanford	9 <sup>th</sup> Ave	Grangeville Blvd to Fargo Ave	Install traffic signals and pedestrian facilities	AES-1a, AES-1b, AES-2, AES-3
Hanford	E Lacey Blvd	10th Ave to 9th Ave	Widen from 2 to 4 lanes w/ left turn pockets	AES-1a, AES-1b, AES-2
Hanford	E Lacey Blvd	9th Ave to Sierra Dr	Widen from 2 to 4 lanes w/ left turn pockets	AES-1a, AES-1b, AES-2
Hanford	Fargo Ave	12th Ave to 13th Ave	Widen from 2 to 4 lanes w/ left turn pockets	AES-1a, AES-1b, AES-2
Hanford	Fargo Ave	BN&SF to 12th Ave	Widen from 2 to 4 lanes w/ left turn pockets	AES-1a, AES-1b, AES-2
Hanford	Fargo Ave	12th Ave to 13th Ave	Install traffic signals and pedestrian facilities	AES-1a, AES-1b, AES-2, AES-3
Hanford	Fargo Ave	11th Ave to Meadow View Ln	Rehabilitate/Overlay	AES-1a, AES-1b, AES-2
Hanford	Grangeville Blvd	Centennial Dr to 13th Ave	Widen from 2 to 4 lanes w/ left turn pockets	AES-1a, AES-1b, AES-2
Hanford	Grangeville Blvd	11th Ave to 12th Ave	Rehabilitate/Overlay	AES-1a, AES-1b, AES-2
Hanford	Grangeville Blvd	10th Ave to 9 1/4 Ave	Rehabilitate/Overlay	AES-1a, AES-1b, AES-2
Hanford	Grangeville Blvd	9 1/4 Ave to SR 43	Widen from 2 to 4 lanes w/ median	AES-1a, AES-1b, AES-2
Hanford	Grangeville Blvd	9 1/4 Ave to SR 43	Install traffic signals and pedestrian facilities	AES-1a, AES-1b, AES-2, AES-3
Hanford	Hanford Armona Rd	12th Ave to 13th Ave	Widen from 2 to 4 lanes w/ left turn pockets	AES-1a, AES-1b, AES-2
Hanford	Houston Ave	10th Ave to 11th Ave	Widen from 2 to 4 lanes w/ median	AES-1a, AES-1b, AES-2
Hanford	Houston Ave	10th Ave to 11th Ave	Install traffic signals and pedestrian facilities	AES-1a, AES-1b, AES-2, AES-3
Hanford	Houston Ave	11th Ave to 12th Ave	Widen from 2 to 4 lanes w/ median	AES-1a, AES-1b, AES-2
Hanford	Houston Ave	11th Ave to 12th Ave	Install traffic signals and pedestrian facilities	AES-1a, AES-1b, AES-2, AES-3
Hanford	Redington St	Lacey Blvd to Grangeville Blvd	Rehabilitate/Overlay	AES-1a, AES-1b, AES-2
Hanford	W Lacey Blvd	12 1/2 Ave to 13th Ave	Widen from 2 to 4 lanes w/ median	AES-1a, AES-1b, AES-2

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Jurisdiction	Location	Project Limits	Project Description	Potential Impact
Hanford	11th Ave	Houston Ave to Idaho Ave	Install traffic signals and pedestrian facilities	AES-3
Hanford	11th Ave	Houston Ave to Idaho Ave	Install traffic signals and pedestrian facilities	AES-3
Lemoore	Olive Ave	B St to Redwood Ln	Overlay	AES-1a, AES-1b, AES-2
Lemoore	Oakdale Ln	Vine St to Lum Ave	Overlay	AES-1a, AES-1b, AES-2
Lemoore	E St	Fox St to D St	Overlay	AES-1a, AES-1b, AES-2
Lemoore	W Deodar Ln	Spruce Ave to Glendale Ave	Overlay	AES-1a, AES-1b, AES-2
Lemoore	S Byron Ave	Bush St to South End	Overlay	AES-1a, AES-1b, AES-2
Lemoore	Cambridge Dr	Bush St to Olive St	Overlay	AES-1a, AES-1b, AES-2
Lemoore	E D St	Lemoore Ave to Smith St	Overlay	AES-1a, AES-1b, AES-2
Lemoore	W Burlwood Ln	Lemoore Ave to Juniper Ln	Overlay	AES-1a, AES-1b, AES-2
Lemoore	Bush St	Lemoore Ave to D St	Overlay	AES-1a, AES-1b, AES-2
Lemoore	W D St	Bush St to Olive St	Overlay	AES-1a, AES-1b, AES-2
Lemoore	Hanford Armona Rd	Lemoore Ave to Liberty Dr	Overlay	AES-1a, AES-1b, AES-2
Lemoore	Hanford Armona Rd	Liberty Dr to 19th Ave	Overlay	AES-1a, AES-1b, AES-2
Lemoore	Hanford Armona Rd	19th Ave to SR 41	Overlay	AES-1a, AES-1b, AES-2
Lemoore	Iona Ave	Vine St to 19th Ave	Overlay	AES-1a, AES-1b, AES-2
Lemoore	Lemoore Ave	SR 198 to Bush St	Overlay	AES-1a, AES-1b, AES-2
Lemoore	Lemoore Ave	UPRR to Cinnamon Dr	Overlay	AES-1a, AES-1b, AES-2
County	Grangeville Blvd	SR 43 to 6th Ave	Reconstruct	AES-1a, AES-1b, AES-2
County	Grangeville Blvd	5th Ave to 6th Ave	Overlay	AES-1a, AES-1b, AES-2
County	Grangeville Blvd	1st Ave to 2 1/2 Ave	Overlay	AES-1a, AES-1b, AES-2
County	Grangeville Blvd	2 1/2 Ave to Highline Canal	Reconstruct	AES-1a, AES-1b, AES-2
County	Grangeville Blvd	Highline Canal to 5th Ave	Overlay	AES-1a, AES-1b, AES-2
County	18th Ave	Laurel Ave to Kansas Ave	Overlay	AES-1a, AES-1b, AES-2
County	10th Ave	Nevada Ave to Pueblo Ave	Overlay	AES-1a, AES-1b, AES-2
County	10th Ave	Pueblo Ave to Redding Ave	Overlay	AES-1a, AES-1b, AES-2
County	10th Ave	Seattle Ave to Utica Ave	Seal Coat	AES-1a, AES-1b, AES-2
County	14th Ave	Jersey Ave to Kansas Ave	Overlay	AES-1a, AES-1b, AES-2
County	Excelsior Ave	SR 41 to 22nd Ave	Overlay	AES-1a, AES-1b, AES-2
County	Excelsior Ave	SR 41 to 22nd Ave	Overlay	AES-1a, AES-1b, AES-2
County	Laurel Ave	Avenal Cutoff Rd to SR 41	Overlay	AES-1a, AES-1b, AES-2
County	Laurel Ave	Avenal Cutoff Rd to SR 41	Overlay	AES-1a, AES-1b, AES-2
County	Avenal Cutoff Rd	SR 198 to 25th Ave	Overlay	AES-1a, AES-1b, AES-2
County	9th Ave	Sr 198 to Houston Ave	Overlay	AES-1a, AES-1b, AES-2
County	Utica Ave	11th Ave to 16th Ave	Overlay	AES-1a, AES-1b, AES-2
County	Utica Ave	16th Ave to 20th Ave	Overlay	AES-1a, AES-1b, AES-2
County	Utica Ave	6th Ave to 11th Ave	Overlay	AES-1a, AES-1b, AES-2



Jurisdiction	Location	Project Limits	Project Description	Potential Impact
County	6th Ave	Utica Ave to Virginia Ave	Overlay	AES-1a, AES-1b, AES-2
County	6th Ave	Virginia Ave to Xavier Ave	Overlay	AES-1a, AES-1b, AES-2
County	6th Ave	Kern County Xavier Ave	Overlay	AES-1a, AES-1b, AES-2
County	Virginia Ave	4th Ave to 6th Ave	Overlay	AES-1a, AES-1b, AES-2

#### d. Cumulative Impacts

The cumulative impact analysis area for visual resources consists of the KCAG region and adjoining counties (including Fresno, Tulare, Kern, San Luis Obispo, and Monterey counties). Information regarding these adjoining counties can be found in Section 3.3.3.1, *Environmental Setting*. Future development in this region that could impact visual resources is considered in the analysis. This cumulative extent is used to evaluate potential direct and indirect, and permanent and temporary impacts to scenic vistas, scenic resources, and existing visual character within the context of regional diminishment of these resources.

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

There are two types of aesthetic impacts that may be additive in nature and thus cumulative: night sky lighting and overall changes in the visual environment as the result of increasing urbanization of large areas. As development in one geographic area, such as a relatively large city adjoining agricultural land like Hanford, increases and connects with development in an adjoining ex-urban area, the effect of night sky lighting experienced outside of the region may increase in the form of larger and/or more intense nighttime glow in the viewshed. Although growth envisioned in the 2022 RTP/SCS is primarily focused on infill areas, development outside of those areas with long-distance views may result in nighttime lighting becoming more visible, covering a larger area and/or appearing in new areas as a result of projected development under the 2022 RTP/SCS.

With regard to the visual environment experienced throughout the cumulative impact analysis area, as planned cumulative development occurs over time the overall visual environment will change. The combination of forecasted development in the KCAG region and planned development in neighboring counties would result in a different visual environment than currently exists. The cumulative impacts associated changes in the visual environment (including scenic vistas and scenic resources) and night sky lighting and are considered significant and the contribution of the proposed 2022 RTP/SCS to these impacts is cumulatively considerable. Mitigation measures described earlier in this section would reduce impacts to aesthetics; however, even with implementation of those mitigation measures, impacts of the proposed 2022 RTP/SCS would remain cumulatively considerable.

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## 4.2 Agriculture and Forestry

This section evaluates impacts on agriculture and forestry resources from implementation of the 2022 RTP/SCS, including direct impacts associated with the conversion of agricultural land to non-agricultural use, the conversion of forest land to non-forest use, and potential indirect impacts to adjacent agricultural operations.

### 4.2.1 Setting

#### a. Overview of Regional Agriculture and Forestry

##### Agricultural Lands

The KCAG region is located in California’s San Joaquin Valley, one of the richest agricultural areas in the world, and contains 961,838 acres of productive farmland. In 2020, the KCAG region’s agricultural crop had a gross value of \$2.18 billion (Kings County Department of Agriculture 2020); the agricultural industry is vitally important to both the County’s industry and the nation’s food supply.

The KCAG region is among California’s leaders in the production of cotton lint, cottonseed, tomatoes, nectarines, plums, milk, apricots, peaches, and wheat (Kings County Department of Agriculture 2020). In 1984, approximately 866,228 acres of land in the KCAG region were classified as “agricultural land”, according to the California Department of Conservation. Of this land, 149,508 acres were classified as “Prime Farmland”. In 2004, the KCAG region contained 860,654 acres of agricultural land and 140,582 acres of Prime Farmland. However, since 2004, the amount of Prime Farmland in the KCAG region has been declining due to conversion to other or nonagricultural uses and the loss of water throughout the region.

Since 2004, there has been a Countywide decline of agricultural lands. From 2004 to 2018 there was a loss of 32,669 acres of Prime Farmland, a loss of 77,012 acres of Farmland of statewide Importance, and a loss of 7,992 acres of Unique Farmland. During the same period, Urban and Built-Up Land had a net total increase of 8,661 acres, Farmland of Local Importance had a net total increase of 2,251 acres, and Grazing Land had a net total increase of 124,848 acres (DOC 2018).

The land use pattern throughout the KCAG region is characterized by relatively compact urban centers surrounded by agricultural lands that produce a wide range of commodities. Table 4.2-1 shows the 2019 and 2020 values of major crop groupings in the KCAG region. The largest decrease in crop values from 2019 to 2020 were in the field crops grouping.

**Table 4.2-1 Kings County Agriculture Report**

Crop Grouping	2019 Crop Value	2020 Crop Value
Field Crops	\$465,422,000	\$387,949,000
Fruit and Nut Crops	\$644,224,000	\$648,667,000
Seed Crops	\$13,637,000	\$11,016,000
Vegetable Crops	\$180,649,000	\$189,154,000
Apiary Products	\$13,912,000	\$16,361,000
<b>Total</b>	<b>\$1,317,844,000</b>	<b>\$1,253,147,000</b>

Source: Kings County Department of Agriculture 2020

## Important Farmlands

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

### *Prime Farmland*

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

### *Farmland of Statewide Importance*

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

### *Unique Farmland*

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

Figure 4.2-1 illustrates the location of Important Farmland and Proposed 2022 RTP/SCS Projects in the KCAG region. Table 4.2-2 illustrates the conversion of Important Farmland in the KCAG region from 2016 to 2018. As shown therein, the amount of Important Farmland within the KCAG region increased by approximately 0.9 percent (4,200 acres) between 2016 and 2018.

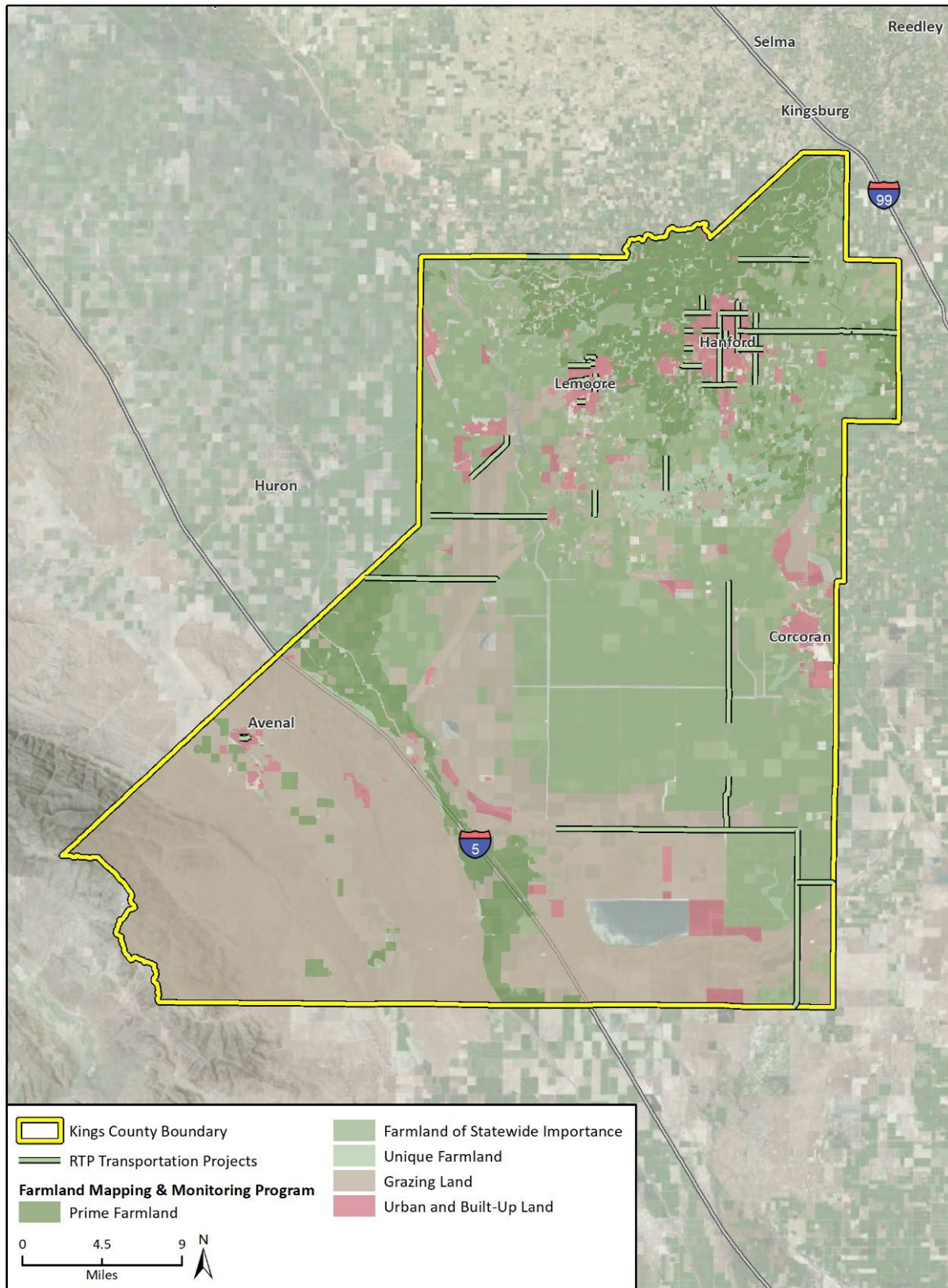
**Table 4.2-2 Important Farmland Conversion in Kings County**

Land Use Category	Total Acreage Inventoried		2016-2018 Acreage Changes			
	2016	2018	Acres Lost (-)	Acres Gained (+)	Total Acreage Changed	Net Acreage Changed
Important Farmland <sup>1</sup>	479,843	459,031	25,012	4,200	29,212	-20,812

<sup>1</sup>Within this table, Important Farmland includes Prime Farmland, Farmland of Statewide Importance, and Unique Farmland.

Source: DOC 2018

**Figure 4.2-1 Important Farmland in the KCAG Region**



Imagery provided by Microsoft Bing and its licensors © 2021.

Additional data provided by California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, 2018.

## **Williamson Act Lands**

The California Land Conservation Act of 1965, Sections 51200 et seq. of the California Government Code, commonly referred to as the “Williamson Act”, enables local governments to restrict the use of specific parcels of land to agricultural or related open space use. Kings County has the highest number of acres under the Williamson Act of all the counties in California. The total acreage under the Williamson Act in Kings County is approximately 677,178 acres (DOC 2015).

## **Forest and Timber Lands**

The Kings County General Plan and County Zoning Ordinance do not specify any land in the County as designated or zoned for forestland or timberland. Additionally, the California Timber Regulation and Forest Restoration (CalTREES) maintains a statewide database of Timber Harvesting Plans (THP), which does not display any THPs within Kings County (CALTrees 2022).

### **b. Agricultural/Urban Interface**

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

#### *Potential Concerns for Urban Neighbors*

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

#### *Potential Concerns for Agricultural Interests*

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

## 4.2.2 Regulatory Setting

### **Federal Laws, Regulations, and Policies**

#### *Federal Farmland Protection Act (FPPA)*

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

#### *Federal Farm and Ranchland Protection Program*

The Federal Farm and Ranchland Protection Program (FRPP) is a voluntary easement purchase program that helps farmers and ranchers keep their land in agriculture. Pursuant to sections 1539 to 1549 of the FPPA of 1981, the Secretary of Agriculture is directed to establish and carry out a program to “minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to 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. The FRPP was re-authorized in the Farm Security and Rural Investment Act of 2002 (Farm Bill). The NRCS manages the program, and the Technical Committee awards funds to qualified entities to conduct their farmland protection programs. Although a minimum of 30 years is required for conservation easements, priority is given to applications with perpetual easements.

#### *Federal Forest Legacy Program*

The Federal Forest Legacy Program was a part of the 1990 Farm Bill. Its purpose is to identify and protect environmentally important forestlands that are threatened by present or future conversion to non-forest uses. The program provides conservation easements and gives priority to lands that can be effectively protected and managed, as well as lands that have significant scenic, recreational, timber, riparian, fish, and wildlife, threatened and endangered species, and other cultural or environmental values. Properties that are “working forests,” whereby the forestland is managed for the production of forest products, are also eligible under this program. Involvement in this program by private landowners is voluntary.

#### *United States Forest Service (USFS)*

The United States Forest Service (USFS) is a Federal agency that manages public lands in national forests and grasslands. The Forest Service is also the largest forestry research organization in the world and provides technical and financial assistance to state and private forestry agencies. The purpose of USFS is to provide the greatest amount of good for the greatest amount of people in the long run (USFS n.d.).

## **State Laws, Regulations, and Policies**

### *Farmland Mapping and Monitoring Program*

The DOC, under the Division of Land Resource Protection, developed the FMMP to monitor the conversion of the state's farmland to and from agricultural use. Data is collected at the county level to produce a series of maps identifying eight land use classifications using a minimum mapping unit of 10 acres. The program also produces a biannual report on the amount of land converted from agricultural to non-agricultural use. The program maintains an inventory of state agricultural land and updates the "Important Farmland Series Maps" every two years (DOC 2019c).

### *Land Conservation Act/Williamson Act*

The California Land Conservation Act of 1965, Sections 51200 et seq. of the California Government Code, commonly referred to as the "Williamson Act", enables local governments to restrict the use of specific parcels of land to agricultural or related open space use. Landowners enter into contracts with participating cities and counties and agree to restrict their land to agriculture or open space use for a minimum of ten years. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market (speculative) value. Local governments receive an annual subvention of forgone property tax revenues from the state via the Open Space Subvention Act of 1971 (DOC 2019d).

### *The Right to Farm Act of 1981*

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

### *California Farmland Conservancy Program Act*

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

### *Timberland Production Zones*

The Z'berg-Warren-Keene-Collier Forest Taxation Reform Act of 1976 requires counties to enable zoning of land used for growing and harvesting timber as Timberland Preserve Zones (TPZ). A TPZ is a 10-year restriction on the use of timberland. Similar to the relationship between the Williamson Act and agricultural land, Timberland Preserve Zones are limited to growing and harvesting timber and other similar uses.

### *California Timberland Productivity Act of 1982*

The California Timberland Productivity Act (CTPA) of 1982 describes the powers and duties of local government in protecting timberlands. The law is designed to maintain an optimum amount of timberland, ensuring its current and continued availability by establishing TPZ on all qualifying timberland, which restrict land use to growing and harvesting timber and 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 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.

## **Regional and Local Laws, Regulations, and Policies**

### *Local Agency Formation Commission Policies and Procedures*

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

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

The Kings County LAFCO Policies and Procedures Manual (Manual) provides evaluation standards for review of proposals that could induce or lead to agricultural lands. The Manual requires proposed projects that involve the conversion of prime agricultural land shall be contiguous to existing city boundaries, designated for urbanization in the city and Kings County general plans and consistent with designated spheres of influence.

### *County of Kings General Plan*

The County of Kings General Plan contains several policies in the Land Use and Open Space Elements that pertain to the preservation and protection of agricultural land and the zoning of agricultural land. For example, Land Use Policy B2.2.2 states that the designation of new residential land use designations in Agriculture Open Space areas shall be restricted in order to preserve productive agricultural land and discourage premature conversion to non-agricultural related land uses. Open Space Policy A1.1.2 recognizes agricultural land as a valued open space feature within the County that promotes the economy, public welfare, and quality of life for Kings County residents. Open

Space Policy A1.1.1 preserves agricultural land in open and economically sustainable sized parcels for farming and establishment of agricultural processing facilities.

#### *City of Avenal General Plan*

The Avenal 2035 General Plan contains several policies in the Conservation, Natural Resources, and Recreation Element that pertain to the preservation and protection of agricultural land and minimize potential conflicts with farming in the City (City of Avenal 2018). For example, Policy NR-2.1 discourages land use activities that are not compatible with agriculture within the Agriculture/Open Space designation. Policy NR-2.2 prohibits the premature conversion of productive agricultural lands where agricultural preserves are present. Policy NR-2.3 requires new development to minimize potential conflicts with adjacent agricultural operations through the incorporation of adequate buffers, setbacks, and project design measures to protect surrounding agriculture and minimize conflicts.

#### *City of Corcoran General Plan*

The Corcoran 2035 General Plan contains several policies in the Conservation, Natural Resources, and Recreation Element that pertain to the preservation and protection of agricultural land (City of Corcoran 2007). Policy 5.10 states that the Land Use Element shall identify greenbelt areas on lands outside of the City in order to maximize farmland, open space, and wildlife habitat preservation. Property owners and Kings County will be encouraged to retain such land in agricultural and/or open space uses, with natural or manmade features to transition from urban to nonurban uses. The Land Use Element also contains policies that guide development adjacent to agricultural areas. For example, Policy 1.20 outlines where Very Low Density Residential development shall be directed to which includes development adjacent to long-term agricultural areas.

#### *City of Hanford General Plan*

The City of Hanford 2035 General Plan contains several policies in the Open Space, Conservation & Recreation Element that pertain to the preservation and protection of agricultural land (City of Hanford 2017). For example, under Section 5.2.1 Agricultural Land Protection, Policy 02, Agricultural Buffer, states that land use policies and designations will be coordinated with Kings County to provide for a buffer between the urban area of Hanford and the surrounding unincorporated communities. Policy 03, Kings County Preservation Efforts, supports the Kings County efforts to preserve and protect farmlands outside the Planned Area Boundary.

#### *City of Lemoore General Plan*

The City of Lemoore 2030 General Plan contains several policies in the Conservation and Open Space Element that pertain to the preservation and protection of agricultural land and minimize potential conflicts with farming in the City (City of Lemoore 2008). For example, Policy COS-I-1 of the Conservation and Open Space Element directs the City to protect lands designated for Agricultural/ Rural/ Conservation uses with appropriate zoning consistent with the General Plan. Policy COS-I-7 directs the City to work with Kings County to preserve State-designated Prime Farmland, retain agricultural use designations and encourage the continuation of farming activities outside the City.

### 4.2.3 Impact Analysis

#### **a. Methodology and Significance Thresholds**

Agricultural impacts were evaluated based upon review of DOC Important Farmland classifications, regulatory requirements that apply to the various agricultural lands within the county, and the potential of future development to create agricultural/urban interface. For analysis purposes, “Important Farmland” include the following DOC classifications: Prime Farmland, Farmland of Statewide Importance, and Unique Farmland.

Appendix G of the State *CEQA Guidelines* identifies the following criteria for determining whether development facilitated by the proposed 2022 RTP/SCS would have a significant impact on agriculture and forestry resources, namely an analysis of whether or not the 2022 RTP/SCS would:

1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to nonagricultural use?
2. Conflict with existing zoning for agricultural use, or a Williamson Act contract?
3. Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production?
4. Result in the loss of forest land or conversion of forest land to non-forest use?
5. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

#### **b. Project Impacts and Mitigation Measures**

The following section describes generalized agricultural resource impacts associated with the projects included in and the land use scenario envisioned by the 2022 RTP/SCS. Table 4.2-3 summarizes the specific 2022 RTP/SCS transportation projects that could result in the types of agricultural resource impacts discussed below. Due to the programmatic nature of the 2022 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2022 RTP/SCS could result in the impacts as described in the following section.

<b>Threshold 1:</b>	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 nonagricultural use
<b>Threshold 2:</b>	Conflict with existing zoning for agricultural use, or a Williamson Act contract
<b>Threshold 5:</b>	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use

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**Impact AG-1 THE PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE SCENARIO ENVISIONED BY THE 2022 RTP/SCS COULD RESULT IN THE CONVERSION OF IMPORTANT FARMLAND TO NON-AGRICULTURAL USES, OR CONFLICT WITH EXISTING ZONING FOR AGRICULTURE OR A WILLIAMSON ACT CONTRACT. THIS WOULD BE A SIGNIFICANT AND UNAVOIDABLE IMPACT.**

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The most recent FMMP data from the DOC has identified 459,031 acres of land as Important Farmland in the KCAG region (refer to Table 4.2-2). In addition, the KCAG region has agricultural lands under Williamson Act contract. Figure 4.2-1 illustrates the location of Important Farmland in relation to transportation projects included in the 2022 RTP/SCS.

The 2022 RTP/SCS emphasizes infill development and development near existing transportation corridors, which are generally located in urbanized areas of cities and unincorporated communities. Such land use development within urbanized areas would not be likely to result in agricultural resource impacts since they would be located within existing urban areas. Because the 2022 RTP/SCS land use pattern emphasizes infill development in conjunction with mixed use and transit-oriented development within existing urbanized areas along transportation corridors, the majority of this Important Farmland would remain available for agricultural use.

Transportation improvement projects under the 2022 RTP/SCS adjacent to agricultural areas, particularly those requiring new rights-of-way, could also convert Important Farmland to non-agricultural use, or conflict with agricultural zoning and/or Williamson Act contracts as described in Threshold 5 through the involvement of other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to a non-agricultural use. Although incorporated cities in the KCAG region are fairly urbanized, many cities border agriculture, including FMMP-designated Important Farmland. Transportation improvement projects that involve roadway widening have the potential to affect narrow segments of agricultural land located immediately along the existing right-of-way of proposed improvements. In addition, improving, expanding, and extending existing roadways, along with the installation of new roadways, could remove some barriers to development taking place on the urban edge as the region's connectivity and access improves from these projects. Additionally, construction of projects adjacent to agricultural fields could result in introduction of invasive species or weeds, which could out compete agricultural crops. It is important to note that for federally funded projects, implementing and local agencies are required to follow the rules and regulations of the Farmland Protection Policy Act (FPPA) including determining the impact by completing the Farmland Conversion Impact Rating form (AD-1006). The FPPA assures that to the extent possible, federal programs are administered to be compatible with state and local programs and policies to protect farmland.

The 2022 RTP/SCS would also relieve traffic congestion in urban areas and in the spheres of influence around cities in the KCAG region, which could potentially change which communities are located within a city's periphery. This could change which communities are closest to agricultural land, and some new residents may be sensitive to the noise, pesticide use, and dust generated by

farming practices, resulting in pressure to change zoning or other laws related to those farming activities. According to the County's Right-to-Farm Ordinance (Section 14-38 of the Kings County Code of Ordinances), agricultural operations are the principal and favored uses of land in the areas of Kings County designated "Agricultural" in the Kings County General Plan and included in the Agricultural zone districts of the Kings County Zoning Ordinance. Kings County shall include a condition that notice, and disclosure of this agricultural land use policy be given by the applicant, or the owner if different from the applicant to subsequent owners and occupants of the property (County of Kings 2021). Thus, residents moving into these areas in the vicinity of existing agricultural activities should be prepared to experience discomfort or inconveniences arising from typical agricultural operations, and that an established agricultural operation shall not be considered a nuisance due to changes in the surrounding area. The right-to-farm ordinance promotes understanding and cooperation between urban residents and agricultural operators.

A determination of the impacts to Important Farmland, agricultural zoning and conflicts with Williamson Act contracts would be made on a case-by-case basis as individual projects are implemented. Many individual projects would likely not create significant impacts, particularly those that involve only minor widening along existing rights-of-way or would be located in urbanized areas zoned for development. Nevertheless, because implementation of the 2022 RTP/SCS may directly result in conversion of Important Farmland and conflict with agricultural zoning and Williamson Act contracts, this is a significant impact.

## **Mitigation Measures**

For transportation projects under their jurisdiction, KCAG shall, and transportation project sponsor agencies can and should, implement the following mitigation measures developed for the 2022 RTP/SCS program, where applicable, for transportation projects that would result in impacts to Important Farmland. The County of Kings and cities in the KCAG region can and should implement these measures, where relevant to land use projects implementing the 2022 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

### *AG-1      Agricultural Land Impact Avoidance and Minimization*

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

- Require project relocation or corridor realignment, where feasible, to avoid Important Farmland, agriculturally zoned land and/or land under Williamson Act contract;
- Compensatory mitigation at a minimum 1:1 (impacted: replaced) acreage ratio with Important Farmland of equivalent or better quality;
- Require acquisition of conservation easements on land at least equal in quality and size as mitigation for the loss of Important Farmland through an appropriate land trust (e.g., Central Valley Farmland Trust); and/or
- Institute new protection of farmland in the project area or elsewhere through the use of long-term restrictions on use, such as 20-year Farmland Security Zone contracts (Government Code Section 51296 et seq.) or 10-year Williamson Act contracts (Government Code Section 51200 et seq.).

## IMPLEMENTING AGENCIES AND TIMING

Implementing agencies for transportation projects are KCAG and transportation project sponsor agencies. Implementing agencies for land use projects are Kings County and incorporated cities within the County. This mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during construction, as applicable.

## Significance After Mitigation

If the implementing agency adopts these mitigation measures, impacts from the 2022 RTP/SCS would be reduced, although not to a less than significant level. Because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, even with implementation of Mitigation Measure AG-1, impacts could remain significant and unavoidable. In addition, impacts remain significant and unavoidable due to the irreversible effects of land conversion. Further, as described in Section 3.3.1, *Mitigation Approach*, KCAG does not have the authority to require other implementing agencies (e.g., Caltrans, counties, cities, transit agencies, etc.) that are responsible agencies for this 2022 RTP/SCS and EIR, but that will be the lead agency for future transportation and land use development projects, to implement these mitigation measures. This impact remains significant and unavoidable.

<b>Threshold 3:</b> Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production
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<b>Threshold 4:</b> Result in the loss of forest land or conversion of forest land to non-forest use
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**IMPACT AG-2 THE PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2022 RTP/SCS WOULD NOT CONFLICT WITH EXISTING ZONING FOR FOREST LAND, TIMBERLAND, OR TIMBERLAND PRODUCTION, NOR CONVERT FOREST LAND TO NON-FOREST USES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

The Kings County General Plan and County Zoning Ordinance do not specify any land in the KCAG region as designated or zoned for forestland or timberland. There are no natural forests occurring in Kings County (County of Kings 2010). The 2022 RTP/SCS and County and city policies focus development in areas that do not include forest land or timberland, as defined by statutes. As such, the 2022 RTP/SCS would not conflict with existing zoning for forest land, timberland, or timber production, nor convert forest land to non-forest use.

Because land use strategies contained within the 2022 RTP/SCS would help to encourage growth in developed areas, and forest lands and timber areas are located outside the KCAG region, impacts on conversion of forest land or conflicts with land zoned for forest land, timberland, or timberland production would be less than significant.

## Mitigation Measures

No mitigation is required.

## c. Specific RTP/SCS Projects That May Result in Impacts

Table 4.2-3 identifies examples of transportation projects with the potential to cause or contribute to direct or indirect impacts to agricultural resources such as those discussed above. These projects are representative and were selected based on their potential scope and likelihood of disturbing

agricultural lands. Additional specific analysis would be required as individual projects are implemented to determine the project specific magnitude of impact. Mitigation discussed above would apply to these specific projects.

**Table 4.2-3 2022 RTP/SCS Projects that May Result in Agricultural Impacts**

Jurisdiction	Location	Project Limits	Project Description	Potential Impact
Avenal	7 <sup>th</sup> Ave	San Joaquin St to SR 269	Reconstruct and improve curb/ramps	AG-1
Avenal	Central Ave	San Joaquin St to SR 269	Reconstruct and improve curb/ramps	AG-1
Avenal	Stanislaus Ave	San Joaquin St to 2nd Ave	Reconstruct and improve curb/ramps	AG-1
Avenal	Merced St	San Joaquin St to 2nd Ave	Reconstruct and improve curb/ramps	AG-1
Hanford	10 <sup>th</sup> Ave	Sr 198 to Grangeville Blvd	Rehabilitate/Overlay	AG-1
Hanford	10 <sup>th</sup> Ave	Grangeville Blvd to SR 43	Rehabilitate/Overlay	AG-1
Hanford	11 <sup>th</sup> Ave	Ivy St to Grangeville Blvd	Rehabilitate/Overlay	AG-1
Hanford	11 <sup>th</sup> Ave	Grangeville Blvd to Fargo Blvd	Rehabilitate/Overlay	AG-1
Hanford	11 <sup>th</sup> Ave	Lacey Blvd to Fargo Ave	Rehabilitate/Overlay	AG-1
Hanford	11 <sup>th</sup> Ave	Hanford Armona Rd to Lacey Blvd	Rehabilitate/Overlay	AG-1
Hanford	11 <sup>th</sup> Ave	Hanford Armona Rd to Houston Ave	Rehabilitate/Overlay	AG-1
Hanford	12 <sup>th</sup> Ave	Fargo Ave to Flint Ave	Widen from 2 to 4 lanes w/ left turn pockets	AG-1
Hanford	12 <sup>th</sup> Ave	Fargo Ave to Flint Ave	Install traffic signals and pedestrian facilities	AG-1
Hanford	9 <sup>th</sup> Ave	Lacey Blvd to Grangeville Blvd	New arterial roadway – 4 lanes w/ median	AG-1
Hanford	9 <sup>th</sup> Ave	Lacey Blvd to Grangeville Blvd	Install traffic signals and pedestrian facilities	AG-1
Hanford	9 <sup>th</sup> Ave	Grangeville Blvd to Fargo Ave	New arterial roadway – 4 lanes w/ median	AG-1
Hanford	9 <sup>th</sup> Ave	Grangeville Blvd to Fargo Ave	Install traffic signals and pedestrian facilities	AG-1
Hanford	E Lacey Blvd	10th Ave to 9th Ave	Widen from 2 to 4 lanes w/ left turn pockets	AG-1
Hanford	E Lacey Blvd	9th Ave to Sierra Dr	Widen from 2 to 4 lanes w/ left turn pockets	AG-1
Hanford	Fargo Ave	12th Ave to 13th Ave	Widen from 2 to 4 lanes w/ left turn pockets	AG-1
Hanford	Fargo Ave	BN&SF to 12th Ave	Widen from 2 to 4 lanes w/ left turn pockets	AG-1
Hanford	Fargo Ave	12th Ave to 13th Ave	Install traffic signals and pedestrian facilities	AG-1
Hanford	Fargo Ave	11th Ave to Meadow View Ln	Rehabilitate/Overlay	AG-1
Hanford	Grangeville Blvd	Centennial Dr to 13th Ave	Widen from 2 to 4 lanes w/ left turn pockets	AG-1

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**2022 Regional Transportation Plan/Sustainable Communities Strategy**

Jurisdiction	Location	Project Limits	Project Description	Potential Impact
Hanford	Grangeville Blvd	11th Ave to 12th Ave	Rehabilitate/Overlay	AG-1
Hanford	Grangeville Blvd	10th Ave to 9 1/4 Ave	Rehabilitate/Overlay	AG-1
Hanford	Grangeville Blvd	9 1/4 Ave to SR 43	Widen from 2 to 4 lanes w/ median	AG-1
Hanford	Grangeville Blvd	9 1/4 Ave to SR 43	Install traffic signals and pedestrian facilities	AG-1
Hanford	Hanford Armona Rd	12th Ave to 13th Ave	Widen from 2 to 4 lanes w/ left turn pockets	AG-1
Hanford	Houston Ave	10th Ave to 11th Ave	Widen from 2 to 4 lanes w/ median	AG-1
Hanford	Houston Ave	10th Ave to 11th Ave	Install traffic signals and pedestrian facilities	AG-1
Hanford	Houston Ave	11th Ave to 12th Ave	Widen from 2 to 4 lanes w/ median	AG-1
Hanford	Houston Ave	11th Ave to 12th Ave	Install traffic signals and pedestrian facilities	AG-1
Hanford	Redington St	Lacey Blvd to Grangeville Blvd	Rehabilitate/Overlay	AG-1
Hanford	W Lacey Blvd	12 1/2 Ave to 13th Ave	Widen from 2 to 4 lanes w/ median	AG-1
Lemoore	Olive Ave	B St to Redwood Ln	Overlay	AG-1
Lemoore	Oakdale Ln	Vine St to Lum Ave	Overlay	AG-1
Lemoore	E St	Fox St to D St	Overlay	AG-1
Lemoore	W Deodar Ln	Spruce Ave to Glendale Ave	Overlay	AG-1
Lemoore	S Byron Ave	Bush St to South End	Overlay	AG-1
Lemoore	Cambridge Dr	Bush St to Olive St	Overlay	AG-1
Lemoore	E D St	Lemoore Ave to Smith St	Overlay	AG-1
Lemoore	W Burlwood Ln	Lemoore Ave to Juniper Ln	Overlay	AG-1
Lemoore	Bush St	Lemoore Ave to D St	Overlay	AG-1
Lemoore	W D St	Bush St to Olive St	Overlay	AG-1
Lemoore	Hanford Armona Rd	Lemoore Ave to Liberty Dr	Overlay	AG-1
Lemoore	Hanford Armona Rd	Liberty Dr to 19th Ave	Overlay	AG-1
Lemoore	Hanford Armona Rd	19th Ave to SR 41	Overlay	AG-1
Lemoore	Iona Ave	Vine St to 19th Ave	Overlay	AG-1
Lemoore	Lemoore Ave	SR 198 to Bush St	Overlay	AG-1
Lemoore	Lemoore Ave	UPRR to Cinnamon Dr	Overlay	AG-1
County	Grangeville Blvd	SR 43 to 6th Ave	Reconstruct	AG-1
County	Grangeville Blvd	5th Ave to 6th Ave	Overlay	AG-1
County	Grangeville Blvd	1st Ave to 2 1/2 Ave	Overlay	AG-1
County	Grangeville Blvd	2 1/2 Ave to Highline Canal	Reconstruct	AG-1
County	Grangeville Blvd	Highline Canal to 5th Ave	Overlay	AG-1
County	18 <sup>th</sup> Ave	Laurel Ave to Kansas Ave	Overlay	AG-1
County	10 <sup>th</sup> Ave	Nevada Ave to Pueblo Ave	Overlay	AG-1



Jurisdiction	Location	Project Limits	Project Description	Potential Impact
County	10 <sup>th</sup> Ave	Pueblo Ave to Redding Ave	Overlay	AG-1
County	10 <sup>th</sup> Ave	Seattle Ave to Utica Ave	Seal Coat	AG-1
County	14 <sup>th</sup> Ave	Jersey Ave to Kansas Ave	Overlay	AG-1
County	Excelsior Ave	SR 41 to 22nd Ave	Overlay	AG-1
County	Excelsior Ave	SR 41 to 22nd Ave	Overlay	AG-1
County	Laurel Ave	Avenal Cutoff Rd to SR 41	Overlay	AG-1
County	Nevada Ave	Avenal Cutoff Rd to SR 41	Overlay	AG-1
County	Avenal Cutoff Rd	SR 198 to 25th Ave	Overlay	AG-1
County	9 <sup>th</sup> Ave	Sr 198 to Houston Ave	Overlay	AG-1
County	Utica Ave	11th Ave to 16th Ave	Overlay	AG-1
County	Utica Ave	16th Ave to 20th Ave	Overlay	AG-1
County	Utica Ave	6th Ave to 11th Ave	Overlay	AG-1
County	6 <sup>th</sup> Ave	Utica Ave to Virginia Ave	Overlay	AG-1
County	6 <sup>th</sup> Ave	Virginia Ave to Xavier Ave	Overlay	AG-1
County	6 <sup>th</sup> Ave	Xavier Ave to County Line	Overlay	AG-1
County	Virginia Ave	4th Ave to 6th Ave	Overlay	AG-1

#### 4.2.4 Cumulative Impacts

The cumulative impact analysis area for agriculture and forestry resources consists of the KCAG region and adjoining counties. Information regarding these adjoining counties can be found in Section 3.3.3.1, *Environmental Setting, Cumulative Impact Methodology*. Future development in this region that could impact farmland or forestry and is considered in the analysis. This cumulative extent is used to evaluate potential loss/conversion of farmland and forest land within the context of regional diminishment of these resources.

Future development within the cumulative impact analysis area would convert agricultural land to non-agricultural uses and may result in conflicts with agricultural zoning and Williamson Act contracts. In addition, future development adjacent to agricultural land has the potential to result in a loss of farmland due to land use conflicts, which adds to the cumulative conversion of agricultural lands, including areas designated as Important Farmland by the FMMP. Cumulative impacts to agricultural resources would be significant.

Implementation of Mitigation Measure AG-1 would reduce the contribution of the proposed 2022 RTP/SCS to cumulative agricultural land impacts. However, the mitigation would not ensure that the future land use development pattern and transportation projects could feasibly relocate or realign to avoid impacts, and impacts would remain significant and unavoidable. The contribution of the proposed 2022 RTP/SCS to cumulative impacts to agricultural and Williamson Act lands would therefore remain cumulatively considerable post-mitigation.

In the cumulative impact analysis area, forestland and timber resources are primarily located in Fresno County and Tulare County. Specifically, the Sierra National Forest that contains large expanses of publicly managed forests. National forests are protected by Federal law and greatly restrict any type of urban development that can occur in these areas. Thus, future development within the cumulative impact analysis area would not convert forestland to non-forest uses and thus

would not result in conflicts with forest zoning. Cumulative impacts to forestland and timber resources would therefore be less than significant. The contribution of the proposed 2022 RTP/SCS to cumulative impacts to forestland and timber resources would not be cumulatively considerable.

## 4.3 Air Quality

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This section evaluates the air quality impacts resulting from implementation of the proposed 2022 RTP/SCS. Both temporary impacts relating to construction activities and long-term impacts associated with population and employment growth and associated growth in vehicle traffic and energy consumption are discussed. In addition, the potential health risks associated with the proposed 2022 RTP/SCS land use scenario are discussed. Greenhouse gas emissions are analyzed in Section 4.8, *Greenhouse Gas Emissions and Climate Change*.

### 4.3.1 Setting

#### **a. Climate and Meteorology**

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

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

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

Local climate conditions for the KCAG region are shown in Table 4.3-1. As summarized therein, the warmest month of the year is July, and the coldest month of the year is December. The annual average maximum temperature is 77 degrees Fahrenheit (°F), while the annual average minimum temperature is 48°F.

**Table 4.3-1 Kings County Climate Conditions**

Temperature Parameter or Metric	Condition
Average annual rainfall	8.38 inches
Average annual maximum temperature	77°F
Average annual minimum temperature	48°F
Warmest month	July
Coolest month	December
Average annual mean temperature	62°F
Average wind speed	4.8 miles per hour
Predominant wind direction	northwest

°F = degrees Fahrenheit

Note: Averages are based on the period of record from July 1899 to June 2016.

Source: Western Regional Climate Center 2016; Iowa Environmental Mesonet 2021.

## **b. Sources of Air Pollution**

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

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

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

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

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

## **c. Air Pollutants of Primary Concern**

The federal and State Clean Air Acts mandate the control and reduction of certain air pollutants. Under these laws, the U.S. Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) have established the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for “criteria pollutants” and other pollutants. Some pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere, including carbon monoxide, volatile organic compounds (VOC)/reactive organic gases (ROG),<sup>1</sup> nitrogen oxides (NO<sub>x</sub>), particulate matter with diameters of up

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

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

## **Ozone**

Ozone is produced by a photochemical reaction triggered by sunlight between  $NO_x$  and ROG. ROG are composed of non-methane hydrocarbons (with some specific exclusions), and  $NO_x$  is composed of different chemical combinations of nitrogen and oxygen, mainly nitric oxide and nitrogen dioxide.  $NO_x$  are formed during the combustion of fuels, while ROG are formed during combustion and evaporation of organic solvents. As a highly reactive molecule, ozone readily combines with many different components of the atmosphere. Consequently, high levels of ozone tend to exist only while high ROG and  $NO_x$  levels are present to sustain the ozone formation process. Once the precursors have been depleted, ozone levels rapidly decline. Because these reactions occur on a regional rather than local scale, ozone is considered a regional pollutant. In addition, because ozone requires sunlight to form, it mostly occurs in concentrations considered serious between the months of April and October. Ozone is a pungent, colorless, toxic gas with direct health effects on humans, including changes in breathing patterns, reduction of breathing capacity, increased susceptibility to infections, inflammation of lung tissue, and some immunological changes (U.S. EPA 2021a). Groups most sensitive to ozone include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors.

## **Carbon Monoxide**

Carbon monoxide is a localized pollutant that is found in high concentrations only near its source. The major source of carbon monoxide, a colorless, odorless, poisonous gas, is the incomplete combustion of petroleum fuels by automobile traffic. Therefore, elevated concentrations are usually only found near areas of high traffic volumes. Other sources of carbon monoxide include the incomplete combustion of petroleum fuels at power plants and fuel combustion from wood stoves and fireplaces during the winter. The health effects of carbon monoxide are related to its affinity for hemoglobin in the blood. Carbon monoxide causes a number of health problems, including aggravation of some heart diseases (e.g., angina), reduced tolerance for exercise, impaired mental function, and impaired fetal development. At high levels of exposure, carbon monoxide reduces the amount of oxygen in the blood, leading to mortality (U.S. EPA 2021a). Carbon monoxide tends to dissipate rapidly into the atmosphere; consequently, violations of the NAAQS and/or CAAQS for carbon monoxide are generally associated with localized carbon monoxide “hotspots” that can occur at major roadway intersections during heavy peak-hour traffic conditions.

## **Nitrogen Dioxide**

Nitrogen dioxide is a by-product of fuel combustion; the primary sources are motor vehicles and industrial boilers and furnaces. The principal form of  $NO_x$  produced by combustion is nitric oxide, but nitric oxide reacts rapidly to form nitrogen dioxide, creating the mixture of nitric oxide and nitrogen dioxide commonly called  $NO_x$ . Nitrogen dioxide is an acute irritant that can aggravate respiratory illnesses and symptoms, particularly in sensitive groups (U.S. EPA 2021a). A relationship

between nitrogen dioxide and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. Nitrogen dioxide absorbs blue light, gives a reddish-brown cast to the atmosphere, and reduces visibility (U.S. EPA 2021a). It can also contribute to the formation of PM<sub>10</sub> and acid rain.

## **Sulfur Dioxide**

Sulfur dioxide is included in a group of highly reactive gases known as “oxides of sulfur.” The largest sources of sulfur dioxide emissions are from fossil fuel combustion at power plants (73 percent) and other industrial facilities (20 percent). Smaller sources of sulfur dioxide emissions include industrial processes such as extracting metal from ore and the burning of fuels with a high sulfur content by locomotives, large ships, and off-road equipment. Sulfur dioxide is linked to a number of adverse effects on the respiratory system, including aggravation of respiratory diseases, such as asthma and emphysema, and reduced lung function (U.S. EPA 2021a).

## **Particulate Matter**

Suspended atmospheric PM<sub>10</sub> and PM<sub>2.5</sub> is comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. Both PM<sub>10</sub> and PM<sub>2.5</sub> are directly emitted into the atmosphere as by-products of fuel combustion and wind erosion of soil and unpaved roads. Particulate matter is also created in the atmosphere through chemical reactions. The characteristics, sources, and potential health effects associated with PM<sub>10</sub> and PM<sub>2.5</sub> can be very different. PM<sub>10</sub> is generally associated with dust mobilized by wind and vehicles while PM<sub>2.5</sub> is generally associated with combustion processes as well as formation in the atmosphere as a secondary pollutant through chemical reactions. PM<sub>2.5</sub> is more likely to penetrate deeply into the lungs and poses a health threat to all groups, but particularly to the elderly, children, and those with respiratory problems (CARB 2021a). More than half of PM<sub>2.5</sub> that is inhaled into the lungs remains there. These materials can damage health by interfering with the body’s mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance (South Coast Air Quality Management District 2005). Suspended particulates can also reduce lung function, aggravate respiratory and cardiovascular diseases, increase mortality rates, and reduce lung function growth in children (U.S. EPA 2021a).

## **Lead**

Lead is a metal found naturally in the environment, as well as in manufacturing products. The major sources of lead emissions historically have been mobile and industrial sources. However, because of the U.S. EPA’s regulatory efforts to remove lead from gasoline, atmospheric lead concentrations have declined substantially over the past several decades. The most dramatic reductions in lead emissions occurred prior to 1990 due to the removal of lead from gasoline sold for most highway vehicles. Lead emissions were further reduced substantially between 1990 and 2008, with reductions occurring in the metals industries at least in part as a result of national emissions standards for hazardous air pollutants. As a result of phasing out leaded gasoline, metal processing currently is the primary source of lead emissions. The highest level of lead in the air is generally found near lead smelters. Other stationary sources include waste incinerators, utilities, and lead-acid battery manufacturers. The health impacts of lead include behavioral and hearing disabilities in children and nervous system impairment (U.S. EPA 2021a).

## **Toxic Air Contaminants**

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or serious illness, or that may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. One of the main sources of TACs in California is diesel engine exhaust that contains solid material known as diesel particulate matter (DPM). More than 90 percent of DPM is less than one micron in diameter (about 1/70<sup>th</sup> the diameter of a human hair) and thus is a subset of PM<sub>2.5</sub>. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs (CARB 2021a).

TACs are different than criteria pollutants because ambient air quality standards have not been established for TACs. TACs occurring at extremely low levels may still cause health effects and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts are described by carcinogenic risk and by chronic (i.e., long duration) and acute (i.e., severe but of short duration) adverse effects on human health.

### **d. Current Air Quality**

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

Monitoring of ambient air pollutant concentrations in the KCAG region is conducted by SJVAPCD and Tribal Agencies. Some monitors are operated specifically for use in determining attainment status, while others are operated for other purposes, such as generating daily air quality forecasts. In total, SJVAPCD utilizes data from monitors operating at 29 sites in the SJVAB, three of which are in the KCAG region. Figure 4.3-1 shows the locations of all monitoring stations in the SJVAB, including those in Kings County that were in operation in 2021. The Kings County portion of the SJVAB is classified as a nonattainment area for the federal 8-hour ozone and PM<sub>2.5</sub> standards and State ozone, PM<sub>10</sub> and PM<sub>2.5</sub> standards. The SJVAB is classified as in attainment (or unclassifiable/attainment) for all other State and federal standards (SJVAPCD). Table 4.3-2 presents a ten-year summary of the days that the SJVAB exceeded NAAQS and CAAQS for ozone, PM<sub>2.5</sub>, and PM<sub>10</sub>. Table 4.3-3 presents the number of days Kings County exceeded NAAQS and CAAQS for ozone, NO<sub>2</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub>.

**Table 4.3-2 Ten-Year SJVAB Air Quality Summary (2011-2020) for Days Over the Ozone, PM<sub>2.5</sub>, and PM<sub>10</sub> NAAQS and CAAQS**

Year	Ozone 1-Hour CAAQS	Ozone 8-Hour NAAQS	Ozone 8-Hour CAAQS	PM <sub>2.5</sub> 24 Hour NAAQS	PM <sub>10</sub> 24 Hour NAAQS	PM <sub>10</sub> 24 Hour CAAQS
2011	70	130	131	65	0	116
2012	72	131	134	39	0	89
2013	41	111	112	69	4	122
2014	48	122	128	53	8	139
2015	47	97	99	53	0	121
2016	51	112	113	34	0	158
2017	48	122	126	47	8	146
2018	42	111	112	61	10	164
2019	24	96	100	28	16	130
2020	50	119	121	80	39	157

CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; PM<sub>10</sub> = particulate matter with a diameter of 10 microns or less; PM<sub>2.5</sub> = particulate matter with a diameter of 2.5 microns or less

Note: No aggregated summary data available for SJVAB through CARB Trends Summary tool post-2020

Source: CARB 2022

**Table 4.3-3 Ambient Air Quality in Kings County<sup>1</sup>**

Pollutant	2018	2019	2020
Ozone (ppm), Eight-Hour Average	0.082	0.076	0.088
Number of days of state exceedances (>0.070 ppm)	30	13	27
Number of days of federal exceedances (>0.070 ppm)	29	13	26
Ozone (ppm), Worst Hour	0.108	0.093	0.103
Number of days of state exceedances (>0.09 ppm)	1	0	6
Nitrogen Dioxide (ppm), Worst Hour	0.0563	0.0629	0.0519
Number of days of state exceedances (>0.18 ppm)	0	0	0
Particulate Matter <10 microns (µg/m <sup>3</sup> ), Worst 24 Hours <sup>1</sup>	174.2	211.7	180.4
Number of days of state exceedances (>50 µg/m <sup>3</sup> )	114	104	22
Number of days of federal exceedances (>150 µg/m <sup>3</sup> )	6	7	3
Particulate Matter <2.5 microns (µg/m <sup>3</sup> ), Worst 24 Hours	111.5	58.8	147.0
Number of days of federal exceedances (>35 µg/m <sup>3</sup> )	36	20	53

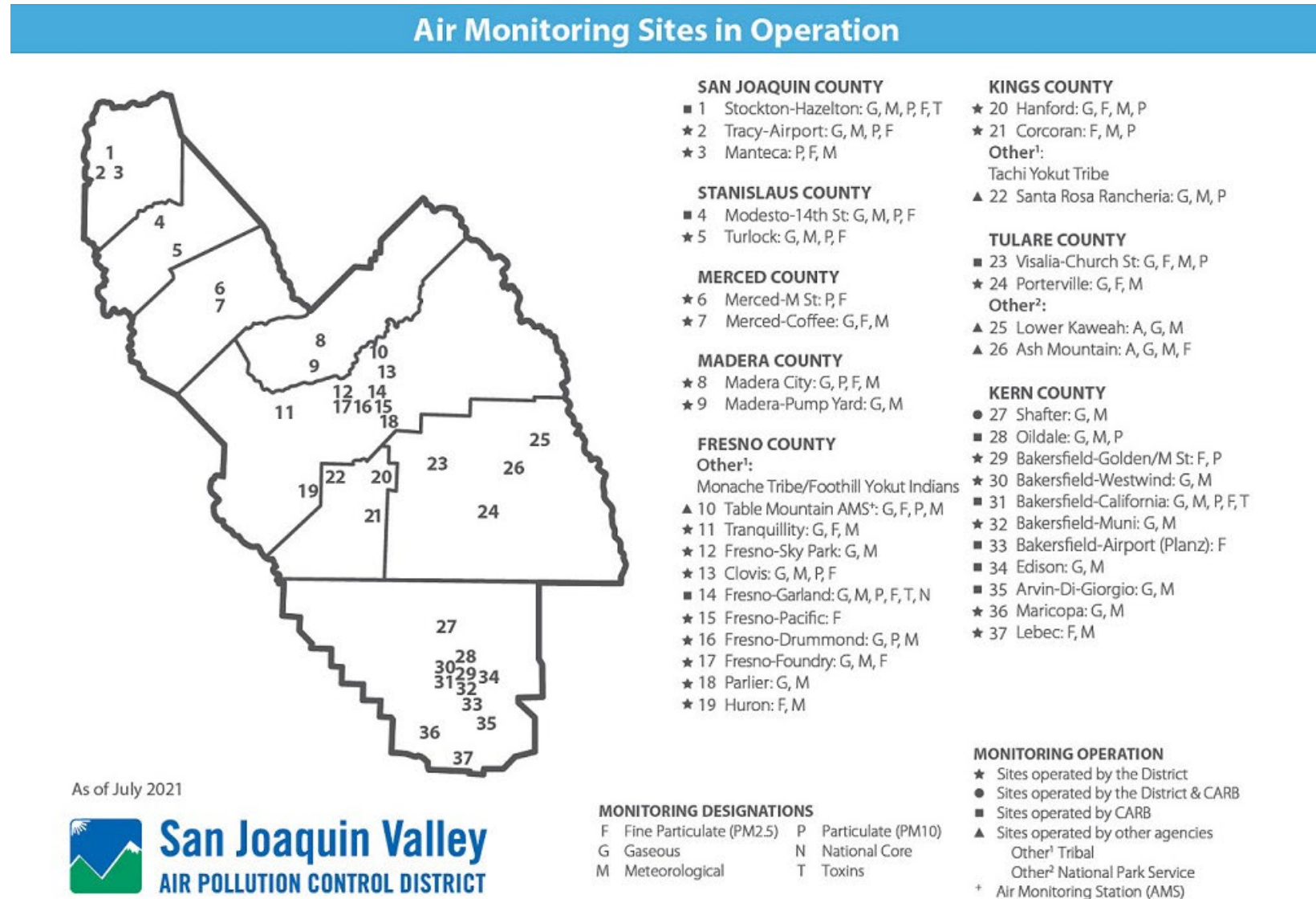
ppm = parts per million

<sup>1</sup> Countywide data not available for this pollutant. Data obtained from the Hanford – South Irwin Street Station.

Source: CARB 2022



Figure 4.3-1 SJVAB Air Quality Monitoring Stations (2021)



## 4.3.2 Regulatory Setting

### a. Federal Laws, Regulations, and Policies

#### Clean Air Act

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

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

Table 4.3-4 summarizes the NAAQS and California Ambient Air Quality Standards (CAAQS). The CAAQS are more restrictive than the NAAQS for several pollutants, including the one-hour standard for carbon monoxide, the 24-hour standard for sulfur dioxide, and the 24-hour standard for PM<sub>10</sub>.

**Table 4.3-4 Current Federal and State Ambient Air Quality Standards**

Pollutant	Averaging Time	Federal Primary Standards	California Standards
Ozone	1-Hour	–	0.09 ppm
	8-Hour	0.070 ppm	0.070 ppm
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide	Annual	0.053 ppm	0.030 ppm
	1-Hour	0.10 ppm	0.18 ppm
Sulfur Dioxide	Annual	–	–
	24-Hour	–	0.04 ppm
	1-Hour	0.075 ppm	0.25 ppm
PM <sub>10</sub>	Annual	–	20 µg/m <sup>3</sup>
	24-Hour	150 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>
PM <sub>2.5</sub>	Annual	12 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>
	24-Hour	35 µg/m <sup>3</sup>	–
Lead	30-Day Average	–	1.5 µg/m <sup>3</sup>
	3-Month Average	0.15 µg/m <sup>3</sup>	–

Pollutant	Averaging Time	Federal Primary Standards	California Standards
Visibility Reducing Particles	8-Hour	—	Extinction of 0.23 per kilometer*
Sulfates	24-Hour	—	25 µg/m <sup>3</sup>
Hydrogen Sulfide	1-Hour	—	0.03 ppm (42 µg/m <sup>3</sup> )
Vinyl Chloride	24-Hour	—	0.01 ppm 0.02 (26 µg/m <sup>3</sup> )

ppm = parts per million; µg/m<sup>3</sup> = micrograms per cubic meter

\* 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.

Source: CARB 2016

## 1990 Amendments to the Federal Clean Air Act

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

## Safer Affordable Fuel-Efficient Vehicles Rule

In August 2018, the U.S. EPA and NHTSA issued a proposed ruling to roll back some of the fuel economy and GHG standards for medium- and heavy-duty trucks. The new ruling proposed by the U.S. EPA and NHTSA, the Safer Affordable Fuel-Efficient (SAFE) Vehicle Rules, would replace the CAFE standards set for model year 2022-2025 passenger car and light trucks, while the 2021 model year vehicles will maintain the CAFE standards. The ruling is split into two parts.

Part One, “One National Program” (84 FR 51310), revokes a waiver granted by U.S. EPA to the State of California under Section 209 of the CAA to enforce more stringent emission standards for motor vehicles than those required by U.S. EPA for the explicit purpose of GHG reduction, and indirectly, criteria air pollutants and ozone precursor emission reduction. This revocation became effective on November 26, 2019, potentially restricting the ability of CARB to enforce more stringent GHG emission standards for new vehicles and set zero emission vehicle mandates in California.

Part Two addresses CAFE standards for passenger cars and light trucks for model years 2021 to 2026. This rulemaking proposes new CAFE standards for model years 2022 through 2026 and would amend existing CAFE standards for model year 2021. The proposal would retain the model year 2020 standards (specifically, the footprint target curves for passenger cars and light trucks) through model year 2026. The proposal addressing CAFE standards was jointly developed by NHTSA and U.S. EPA, with U.S. EPA simultaneously proposing tailpipe CO<sub>2</sub> standards for the same vehicles covered by the same model years.

In September 2019, U.S. EPA and the National Highway Traffic Safety Administration issued the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program, which revoked California’s authority to set its own GHG emissions standards and zero-emission vehicle mandates in

California (84 Federal Register 51310). In April 2020, the federal agencies issued the SAFE Vehicles Rule Part Two for Model Years 2021–2026 Passenger Cars and Light Trucks, which relaxed federal GHG emissions and fuel economy standards (85 Federal Register 24174). On February 8, 2021, the incoming federal administration issued a stay in regard to the legal challenges by California and other states to the revocation of California’s waiver (JDSupra 2021). On December 21, 2021, the National Highway Traffic Safety Administration (NHTSA) published its Corporate Average Fuel Economy (CAFE) Preemption rule, which finalizes its repeal of 2019’s SAFE Rule Part One. On March 31, 2022, the NHTSA finalized new CAFE Standards for model years 2024 through 2026 that would increase federal CAFE standards compared to the SAFE Rule Part Two (NHTSA 2022).

## **b. State Laws, Regulations, and Policies**

### **AB 32**

Assembly Bill (AB) 32, also known as the Global Warming Solutions Act of 2006 (Nunez), expanded CARB’s role to development and oversight of California’s main GHG reduction programs. These include cap and trade, the Low Carbon Fuel Standard, and the zero-emission vehicle programs. With the passage of additional laws (such as Senate Bill [SB] 32 in 2016 and AB 398 in 2017), CARB continues to map out how these programs and others can help California reach its next statutory target: reducing GHG emissions an additional 40 percent below 1990 levels by 2030. Reductions in GHG emissions are tied to improvements in air quality.

### **California Clean Air Act**

The California Clean Air Act (CCAA) was enacted in 1988 (California Health & Safety Code Section 39000 et seq.) and amended in 1992. The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles (see Table 4.3-4). Air basins or areas that exceed the CAAQS are designated non-attainment until compliance is disclosed in an attainment plan. In California, CARB is responsible for meeting the State requirements of the federal CAA, administering the California CAA, and establishing the California ambient air quality standards (CAAQS). The California CAA, as amended in 1992, requires all air districts in the State to endeavor to achieve and maintain the CAAQS. CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level.

### **Senate Bill 656 (Chapter 738, Statutes of 2003)**

In 2003, the California Legislature enacted Senate Bill (SB) 656 (Chapter 738, Statutes of 2003), codified as Health and Safety Code Section 39614, to reduce public exposure to PM<sub>10</sub> and PM<sub>2.5</sub>. SB 656 required that, by January 1, 2005, CARB, in consultation with local air pollution control and air quality management districts (air districts), must develop and adopt a list of the most readily available, feasible, and cost-effective control measures that could be employed by CARB and the air districts to reduce PM<sub>10</sub> and PM<sub>2.5</sub> (collectively referred to as PM). The legislation established a process for achieving near-term reductions in PM throughout California ahead of federally required deadlines for PM<sub>2.5</sub> and provided new direction on PM reductions in those areas not subject to federal requirements for PM. Measures adopted as part of SB 656 complement and support those required for federal PM<sub>2.5</sub> attainment plans, as well as for State ozone plans. This ensures continuing

focus on PM reduction and progress toward attaining California's more health protective standards. This list of air district control measures was adopted by CARB on November 18, 2004.

### **Toxic Air Contaminant Identification and Control Act of 1983**

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

### **Assembly Bill 2588: Air Toxics "Hot Spots" Information and Assessment Act of 1987**

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

### **Executive Order N-79-20**

In 2021, Governor Newsom signed Executive Order N-79-20 which calls for the elimination of new internal combustion passenger vehicles by 2035. The Executive Order establishes a target for the transportation sector that helps put the state on a path to carbon neutrality by 2045. Furthermore, the Executive Order provides momentum for providers of charging and refueling infrastructure, electric utilities, and others to plan for and support the increasing consumer demand for these vehicles (CARB 2021b).

### **CARB Air Quality and Land Use Handbook and 2017 Technical Advisory**

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

CARB's *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways* technical advisory (2017) identifies effective strategies that planners and other land use decision-makers can

implement locally and in the near-term to reduce exposure to near-roadway pollution from increased infill development while also protecting public health. These strategies complement the state's many efforts to reduce air pollution from all sources, including cars and trucks.

### **Diesel Risk Reduction Program**

In August 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as TACs, based on data linking diesel PM emissions to increased risks of lung cancer and respiratory disease. Following the identification process, CARB was required to determine if there was a need for further control, which led to creation of the Diesel Advisory Committee to assist in the development of a risk management guidance document and risk reduction plan. In September 2000, CARB adopted the Diesel Risk Reduction Plan, which recommends control measures to reduce the risks associated with diesel PM and achieve a goal of 75 percent diesel PM reduction by 2010 and 85 percent by 2020. Specific statewide regulations designed to further reduce diesel PM emissions from diesel-fueled engines and vehicles are continuing to be evaluated and developed. The goal of these regulations is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce diesel PM emissions.

### **Airborne Toxic Control Measures**

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

### **Drayage Truck Regulation**

CARB established the Drayage Truck Regulation as part of its ongoing efforts to reduce PM and NO<sub>x</sub> emissions from diesel-fueled engines and improve air quality associated with goods movement. The purpose of this regulation is to reduce emissions and public exposure to diesel PM, NO<sub>x</sub>, and other air contaminants by setting emission standards for in-use, heavy-duty diesel-fueled vehicles.

Starting January 1, 2023, drayage trucks will be subject to the provisions of 13 CCR Section 2025, the Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants from In-Use Heavy Duty Diesel-Fueled Vehicles, which requires that all not otherwise exempt in-use on-road diesel vehicles, including drayage trucks, have a 2010 model year emissions equivalent engine by January 1, 2023 (13 CCR Section 2027).

## Proposition 1B: Goods Movement Emission Reduction Program

The \$1 billion Proposition 1B Goods Movement Emission Reduction Program is a partnership between CARB and local agencies, air districts, and seaports to quickly reduce air pollution emissions and health risk from freight movement along California's trade corridors. Local agencies apply to CARB for funding. Then those agencies offer financial incentives to owners of equipment used in freight movement to upgrade to cleaner technologies. Projects funded under this program must achieve early or extra emission reductions not otherwise required by law or regulation.

### c. Regional Laws, Regulations, and Policies

#### San Joaquin Valley Air Pollution Control District

##### *Air Quality Management Plans*

The Federal Clean Air Act Amendments of 1990 set a schedule for the attainment of the NAAQS. States are required to prepare a State Implementation Plan (SIP) to develop strategies to bring about attainment of the standards. In addition, the California Clean Air Act of 1988 requires areas that exceed the California ambient air quality standards to plan for the eventual attainment of the CAAQS. SJVAPCD monitors and regulates local air quality in the SJVAB and implements Air Quality Management Plans (AQMPs). Since 1992, SJVAPCD has adopted numerous attainment plans to reduce ozone and particulate emissions.

The 2016 Ozone Plan is the most recent ozone attainment plan adopted by SJVAPCD. Implementation of each of the plans has contributed to the adoption of over 600 rules and amendments aimed at reducing air pollution concentrations. These measures have substantially reduced ozone precursor pollutants, which include NO<sub>x</sub> and ROG. SJVAPCD is mandated under federal Clean Air Act requirements to develop a new attainment plan for the revised ozone standard by 2022, which is currently in progress. Ozone precursor emissions in the SJVAB are at historically low levels, with an approximately 80 percent reduction in NO<sub>x</sub> stationary sources emissions since 1990 (SJVAPCD 2016).

The 2018 Plan for the 1997, 2006, and 2012 PM<sub>2.5</sub> Standards is the most recent attainment plan for particulate matter adopted by SJVAPCD (SJVAPCD 2018b). On August 19, 2021, the District's Governing Board approved the *Attainment Plan Revision for the 1997 Annual PM<sub>2.5</sub> Standard* to establish a new attainment target for the 1997 annual PM<sub>2.5</sub> standard. The Valley would have met this standard by the projected attainment target of 2020, but for the significant wildfire impacts and data collection issues at the air monitoring site in Bakersfield (operated by CARB). Based on implementation of the control strategy in the 2018 PM<sub>2.5</sub> Plan, it is estimated that the SJVAB will attain the 1997 annual PM<sub>2.5</sub> standard by 2023 (SJVAPCD 2021b).

##### *Rules and Regulations*

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

- **Rule 4102 Nuisance:** A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such person or the public or which cause or have a natural tendency to cause injury or damage to business or property.

- **Rule 8021 Earthmoving Activities:** Requires construction, demolition, excavation, extraction, and other earthmoving activities to include implementation of measures designed to limit fugitive dust emissions.
- **Rule 8041 Carryout and Trackout:** Requires owners and operators to sufficiently prevent or cleanup carryout and trackout as described in SJVAPCD Regulation VIII. The use of blower devices, or dry rotary brushes or brooms, for removal of carryout and trackout on public roads is expressly prohibited. The removal of carryout and trackout from paved public roads does not exempt an owner/operator from obtaining state or local agency permits which may be required for the cleanup of mud and dirt on paved public roads.
- **Rule 8061 Paved and Unpaved Roads:** Requires implementation of control measures and design criteria to limit fugitive dust emissions from any new or existing public or private paved or unpaved road, road construction project, or road modification project.
- **Rule 9510 Indirect Source Review (ISR):** Requires new developments expected to create a substantial amount of air pollution to incorporate on-site mitigation or emission reducing designs and practices into the project.

#### **d. Local Laws, Regulations, and Policies**

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

#### **Kings County**

The County of Kings has established a series of provisions in the Kings County 2035 General Plan (2010) that relate to the physical growth and development of the County. The General Plan document contains an Air Quality Element, which details goals, policies, and implementation strategies that would have a positive effect on air quality in the region. Applicable policies related to air quality are as follows:

- **AQ Policy A1.1.1:** Designate an Air Quality and Climate Change Coordinator to coordinate County efforts and work with neighboring jurisdictions and affected agencies to minimize cross-jurisdictional and regional transportation and air quality issues.
- **AQ Policy A1.1.2:** Consult with the SJVAPCD and KCAG during CEQA review of discretionary projects having the potential for causing adverse air quality, transportation, and climate change impacts. Participate in the SJVAPCD Climate Change Action Plan implementation.
- **AQ Policy A1.2.1:** Facilitate efforts that increase the public's understanding of the linkage between land use, transportation, water and energy use and air pollution. Efforts should include informing the public of measures that can be taken and resources that are available to improve air quality and reduce potential climate change impacts.
- **AQ Policy B1.1.1:** Minimize air quality and potential climate change impacts through project review, evaluation, and conditions of approval when planning the location and design of land uses and transportation systems needed to accommodate expected County population growth. Integrate decisions on land use and development locations with the SJV Blueprint.
- **AQ Policy B1.1.2:** Submit transportation improvement projects to be included in regional transportation plans (RTP, RTIP, CMP, etc.) that are found to be consistent with the air quality and climate change goals and policies of the General Plan.



- **AQ Policy B1.1.3:** Consult with KCAG and transit providers during the planning stages of land use and transportation projects to assess project impacts on long range transit plans and ensure that potential impacts are avoided.
- **AQ Policy B1.1.4:** During project review, approval, and implementation, work with Caltrans, ARB, SJVAPCD, and KCAG to minimize the air quality, mobility, and social impacts of large scale transportation projects on existing communities and planned sensitive land uses.
- **AQ Policy D2.1.1:** Request project sponsors to demonstrate that all feasible TCMs and other measures have been incorporated into project designs which increase the effective capacity of the existing road network prior to seeking approval to construct additional roadway capacity, such as additional lanes or new highways.
- **AQ Policy D2.1.2:** County staff shall proactively work with KCAG, employers and developers to provide appropriate land use designations in urban communities which will allow affordable transportation alternatives and neighborhood work centers for telecommuting to serve both new and existing land uses designated by the General Plan.
- **AQ Policy F1.1.1:** Locate residential development projects and projects categorized as sensitive receptors an adequate distance from existing and potential sources of hazardous emissions such as major transportation corridors, industrial sites, and hazardous material locations in accordance with the provisions of ARB's Air Quality and Land Use Handbook.
- **AQ Policy F2.1.3:** Develop a program to reduce PM10 emissions from County maintained roads to the maximum extent feasible.

## City of Hanford

The City of Hanford 2035 General Plan also contains an Air Quality Element (2010) that includes the following actions:

- **Policy AQ 1.1:** Coordinate City efforts and work with neighboring jurisdictions and affected agencies to minimize cross-jurisdictional and regional transportation and air quality issues.
- **Policy AQ 1.2:** Consult with the San Joaquin Valley Air Pollution Control Agency and Kings County Association of Governments during CEQA review of discretionary projects having the potential for causing adverse air quality, transportation, and climate change impacts.
- **Policy AQ 3.1:** Through project review, evaluation, and conditions of approval, minimize air quality and potential greenhouse gas impacts when planning the location and design of land uses and transportation systems needed to accommodate expected City population growth. Integrate decisions on land use and development locations with the San Joaquin Valley Blueprint.
- **Policy AQ 3.2:** A transportation improvement project to be included in a regional transportation plan or transportation improvement plan should be submitted only if it is found to be consistent with the air quality and climate change goals and policies of the General Plan.
- **Policy AQ 3.3:** Consult with Kings County Association of Governments and transit providers during the planning stages of land use and transportation projects to assess project impacts on long-range transit plans and ensure that potential impacts are avoided.
- **Policy AQ 3.5:** Minimize air quality and climate change impacts through project review, evaluation, and conditions of approval when planning the location and design of land use projects and transportation system projects needed to accommodate expected City population growth.

- **Policy AQ 4.7:** Work with the San Joaquin Valley Air Pollution Control District to ensure implementation of particulate emission controls required by Regulation VIII – Fugitive PM10 for construction and grading activities.

## **City of Lemoore**

The City of Lemoore includes policies relating to air quality in the 2030 Lemoore General Plan (2012). Some of the policies include:

- **Policy C-G-1:** Promote improved transit service and the development and use of park-and-ride facilities for commuters.
- **Policy C-G-4:** Promote bicycling and walking as alternatives to the automobile.
- **Policy C-G-7:** Make efficient use of all transportation facilities and, through coordinated land use planning, strive to improve accessibility to shops, schools, parks and employment centers and reduce the total vehicle miles traveled per household to minimize vehicle emissions and save energy.
- **Policy COS-G-12:** Make air quality a priority in land use planning by implementing emissions reduction efforts targeting mobile sources, stationary sources and construction related sources.
- **Policy COS-G-13:** Minimize exposure to toxic air pollutant emissions and noxious odors from industrial, manufacturing and processing facilities.
- **Policy COS-G-14:** Utilize diverse and creative mitigation approaches to manage remaining levels of air pollution that cannot be reduced or avoided.

Other cities within the KCAG region include Corcoran and Avenal. The General Plans of these cities include goals and policies pertaining to air quality that are similar to those outlined above.

### **4.3.3 Impact Analysis**

#### **a. Methodology and Significance Thresholds**

This analysis uses the guidance and methodologies recommended in the SJVAPCD's 2015 *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) (SJVAPCD 2015a) to determine whether the proposed 2022 RTP/SCS impacts exceed the thresholds identified in CEQA Guidelines Appendix G.

#### **Significance Thresholds**

Based on Appendix G of the CEQA Guidelines, the 2022 RTP/SCS would have a significant impact on air quality if it would:

1. Conflict with or obstruct the implementation of the applicable air quality plan
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard
3. Expose sensitive receptors to substantial pollutant concentrations
4. Result in other emissions (such as those leading to odors adversely affecting a substantial number of people)

The GAMAQI does not provide guidance applicable to a program of projects. However, the SJVAPCD's GAMAQI includes significance criteria for evaluating construction and operational emissions associated with individual projects. SJVAPCD recommends the use of quantitative

thresholds to determine if a project would significantly contribute to a nonattainment designation based on the emissions generated. These thresholds are shown in Table 4.3-5. SJVAPCD Rule 9510, Indirect Source Review, and Regulation VIII, Fugitive PM<sub>10</sub> Prohibitions, would apply to individual projects under the 2022 RTP/SCS as appropriate.

**Table 4.3-5 SJVAPCD Air Quality Significance Thresholds**

Pollutant	NO <sub>x</sub>	ROG	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>x</sub>	CO
Construction and Operation Thresholds (Tons Per Year)	10	10	15	15	27	100

NO<sub>x</sub> = nitrogen oxides; ROG = reactive organic gases; PM<sub>10</sub> = particulate matter with a diameter of 10 microns or less; PM<sub>2.5</sub> = particulate Matter with a diameter of 2.5 microns or less  
Source: SJVAPCD 2015a

In addition to the annual thresholds outlined above, SJVAPCD has published the *Ambient Air Quality Analysis Project Daily Emissions Assessment* guidance, which is summarized in Section 8.4.2, *Ambient Air Quality Screening Tools*, of the SJVAPCD's GAMAQI (2015). The *Ambient Air Quality Screening Tools* guidance provides a screening threshold of 100 pounds per day for NO<sub>x</sub>, ROG, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>x</sub>, and CO. SJVAPCD recommends that an ambient air quality analysis be performed for all criteria pollutants when emissions of any criteria pollutant resulting from project operational activities exceed the 100 pounds-per-day screening level, after compliance with Rule 9510 requirements and implementation of all enforceable mitigation measures.

### Short-Term Emissions Methodology

Emissions from construction activities represent temporary impacts that are typically short in duration, depending on the size, phasing, and type of project. Air quality impacts can nevertheless be acute during construction periods, resulting in significant localized impacts to air quality. Construction-related emissions are speculative at the RTP/SCS level because such emissions are dependent on the characteristics of individual development projects. However, because construction of projects under the proposed 2022 RTP/SCS would generate temporary criteria pollutant emissions, primarily due to the operation of construction equipment and truck trips, a qualitative analysis is provided.

### Long-Term Emissions Methodology

The methodology for determining the significance of air quality impacts compares baseline conditions in 2020 to future 2046 conditions, as required in CEQA Guidelines Section 15126.2(a). State and federal clean air laws require that emissions of pollutants for which NAAQS or CAAQS are violated be reduced from current levels. Therefore, the project's long-term mobile source impacts to air quality (Impact AQ-3) would be considered significant if the proposed 2022 RTP/SCS would result in mobile source emissions that exceed existing levels. In this case, the pollutants of concern are ozone precursors (NO<sub>x</sub> and ROG), PM<sub>10</sub>, and PM<sub>2.5</sub> because these are the primary pollutants associated with vehicle transportation.

Projected air emissions from mobile sources were calculated using the EMFAC2021 model with data for vehicle miles traveled (VMT) from the RTP/SCS transportation analysis completed by KCAG. Data from EMFAC outputs and KCAG's transportation analysis were used to calculate projected vehicle emissions. Projected vehicle emissions for the year 2046 under the proposed 2022 RTP/SCS were compared to baseline 2020 conditions.

## Health Impacts

Short-term and long-term exposure to criteria pollutants and TACs may result in adverse health effects, based on the information presented in Section 4.3.1(c), *Air Pollutants of Primary Concern*. As discussed in that section, these effects may include: aggravated asthma, increases in respiratory symptoms like coughing and difficult or painful breathing, chronic bronchitis, decreased lung function, increased cancer risk, heart attack, and premature death.

The NAAQS and CAAQS are health-based standards. Therefore, in this impact analysis, if the proposed 2022 RTP/SCS would result in cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard, it would also contribute to these adverse health effects.

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

### b. Project Impacts and Mitigation Measures

This section discusses impacts and mitigation measures associated with transportation projects and the land use scenario contained within the 2022 RTP/SCS. Specific projects may generate air quality impacts during construction and operation. Section 4.3.3(c) summarizes the impacts associated with transportation projects in the 2022 RTP/SCS. Due to the programmatic nature of the 2022 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement projects and future projects under the land use scenario envisioned by the 2022 RTP/SCS could result in the impacts as described in the following sections.

<b>Threshold 1:</b> Conflict with or obstruct implementation of the applicable air quality plan.
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#### **Impact AQ-1      THE PROPOSED 2022 RTP/SCS WOULD NOT CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE APPLICABLE AIR QUALITY PLAN. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

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To accommodate future growth in the region while reducing emissions, the strategy of the 2022 RTP/SCS is to develop an efficient circulation network with multi-modal transportation in addition to promoting congestion management; coordinating land use, housing, and transportation systems; and providing incentives that reduce vehicle miles traveled. Implementation of these strategies would result in incremental VMT reductions, but overall VMT would remain higher than baseline (2020) conditions. VMT reductions from RTP/SCS strategies would generally reduce regional criteria air pollutant emissions and TAC emissions from mobile sources; however, the extent to which emissions are reduced by such strategies cannot be feasibly quantified at this time.

As shown in Table 4.3-8 under Impact AQ-3, the policies and land use patterns facilitated by the 2022 RTP/SCS are projected to reduce emissions of ozone precursors below 2020 baseline levels; however, PM<sub>10</sub> emissions are projected to increase. Although VMT would increase under the 2022 RTP/SCS as compared to baseline levels, emissions of ozone precursor and PM<sub>2.5</sub> exhaust emissions would decrease due to increasingly fuel-efficient vehicles, improving emissions control technology, and an increased share of electric vehicle adoption. In addition, proposed transportation improvements and land use projects envisioned by the 2022 RTP/SCS, among other strategies,

would improve alternative transportation options and circulation. The reduction in ozone precursor and PM<sub>2.5</sub> emissions is consistent with the goals and policies of SJVAPCD's 2016 Ozone Plan and 2018 PM<sub>2.5</sub> Plan. The goals of the 2016 Ozone Plan and the 2018 PM<sub>2.5</sub> Plan are to reduce precursor pollutants, which include NO<sub>x</sub> and ROG, and particulate matter pollutants within the SJVAB. The above RTP/SCS strategies and other actions in the proposed 2022 RTP/SCS would align with the emissions reduction goals of both SJVAPCD attainment plans. Therefore, implementation of the proposed 2022 RTP/SCS would not conflict with or obstruct implementation of the applicable air quality plans, and this impact would be less than significant.

## Mitigation Measures

No mitigation measures are required.

**Threshold 2:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (construction)

**Impact AQ-2 CONSTRUCTION ACTIVITIES ASSOCIATED WITH TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE IN CRITERIA POLLUTANTS FOR WHICH THE PROJECT REGION IS NON-ATTAINMENT UNDER AN APPLICABLE FEDERAL OR STATE AMBIENT AIR QUALITY STANDARD. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

There are three primary sources of short-term emissions that would be generated by construction of future transportation projects under the proposed 2022 RTP/SCS. These sources include:

- Operation of construction vehicles (i.e., scrapers, loaders, dump trucks);
- The creation of fugitive dust during clearing and grading; and
- The use of asphalt or other oil-based substances during the final construction phases, which also generate nuisance odors.

The significance of daily emissions, particularly ROG and NO<sub>x</sub> emissions, generated by construction equipment utilized to build RTP/SCS transportation improvements would depend on the quantity of equipment used and the hours of operation. The significance of fugitive dust (PM<sub>2.5</sub> and PM<sub>10</sub>) emissions would depend upon the following factors:

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

Intersection improvements, such as signalization or signal coordination, are small-scale projects and are not expected to generate significant short-term emissions. However, other RTP/SCS projects as well as future development facilitated by the SCS land use scenario may involve grading and paving, or the construction of permanent facilities. For example, substantial grading and paving would be required for interchange modifications, roadway widening, and other large improvements on State Routes and regional roadways. The precise quantity of emissions would need to be determined at

the time of proposed construction of a given transportation improvement or development project. When project-specific CEQA documents are prepared, these emissions would be compared to SJVAPCD's construction thresholds, as listed in Section 4.3.3(a), *Methodology and Significance Thresholds* under Threshold 2(a). Although any individual transportation improvement or development project may not generate significant short-term emissions, it is probable that several projects would be under construction simultaneously, generating cumulative construction emissions that could impact air quality.

SJVAPCD construction emissions thresholds listed in Section 4.3.3(a), *Methodology and Significance Thresholds* under Threshold 2(a) would be used to determine whether construction impacts of individual projects are significant. In addition, construction equipment would be subject to the stringent rules and regulations adopted by the U.S. EPA and CARB to reduce criteria pollutant and hazardous emissions limits from on-road vehicles and off-road equipment. For example, CARB has the In-Use Off-Road Diesel-Fueled Fleets Regulation to reduce particulate matter and NO<sub>x</sub> from off-road heavy-duty diesel vehicles from various industries including air travel, manufacturing, and landscaping. In addition, the U.S. EPA and CARB both have ignition diesel engine standards for non-road portable equipment, such as diesel generators and air compressors, which require the non-road equipment engines to be rated a cleaner tier by specific years, which will result in reduced emissions (CARB 2021c, U.S. EPA 2016).

Even though these regulations exist, it cannot be assumed that projects under the proposed 2022 RTP/SCS would be constructed using the latest and lowest emitting construction equipment for a majority of their construction fleet. Therefore, short-term impacts would be significant because construction emissions could exceed SJVAPCD significance thresholds and result in cumulatively considerable net increases in PM<sub>2.5</sub> and PM<sub>10</sub> and/or ozone precursor emissions. Implementation of mitigation measures for individual projects would reduce PM and ozone precursor emissions. However, this impact would remain significant and unavoidable. The following mitigation measures would reduce this impact.

## **Mitigation Measures**

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the proposed 2022 RTP/SCS program where applicable for transportation projects that would result in fugitive dust and ozone precursor emissions. Cities and the County can and should implement these measures, where relevant to land use projects implementing the proposed 2022 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

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

For all projects, the implementing agency shall incorporate the most recent SJVAPCD feasible construction mitigation measures and/or technologies for reducing inhalable particles based on analysis of individual sites and project circumstances. Additional and/or modified measures may be adopted by SJVAPCD prior to implementation of individual projects under the proposed 2022 RTP/SCS; therefore, the most current list of feasible mitigation measures at the time of project implementation shall be used. The current SJVAPCD feasible mitigation measures include the following (SJVAPCD 2015b):

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

#### *AQ-2(b) Diesel Equipment Emissions Standards*

The implementing agency shall ensure, to the maximum extent feasible, that diesel construction equipment meeting CARB Tier 4 emission standards for off-road heavy-duty diesel engines is used. If use of Tier 4 equipment is not feasible, diesel construction equipment meeting Tier 3 (or if infeasible, Tier 2) emission standards shall be used. These measures shall be noted on all construction plans, and the implementing agency shall perform periodic site inspections.

#### *AQ-2(c) Electric Construction Equipment*

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

### **IMPLEMENTING AGENCIES AND TIMING**

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

### **Significance After Mitigation**

Implementation of Mitigation Measures AQ-2(a) through AQ-2(c) would reduce short-term construction emissions from individual projects and thus reduce the severity of impacts by requiring best practices for dust and exhaust emissions via readily available, lower-emitting diesel equipment, and/or equipment powered by alternative cleaner fuels (e.g., propane) or electricity, as well as on-road trucks using particulate exhaust filters. To the extent that an implementing agency requires an individual project to implement all feasible mitigation measures described above, individual project impacts may be reduced to a less than significant level. Implementation of Mitigation Measure GHG-1 would also reduce construction emissions from the proposed 2022 RTP/SCS. However, these mitigation measures may not be feasible or effective for all projects. Therefore, this impact would

remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible at the programmatic level.

**Threshold 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 (operation)

**Impact AQ-3 OPERATION OF THE PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF A CRITERIA POLLUTANT FOR WHICH THE PROJECT REGION IS NON-ATTAINMENT UNDER AN APPLICABLE FEDERAL OR STATE AMBIENT AIR QUALITY STANDARD. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

## Transportation Emissions

Projected on-road vehicle emissions on the KCAG transportation network for the year 2046 under proposed 2022 RTP/SCS conditions were compared to baseline (2020) conditions. Table 4.3-6 shows the results of the long-term emissions analysis based on Total Daily VMT for the KCAG region.

**Table 4.3-6 Regional Air Pollutant Emissions – KCAG Region**

Scenario	VMT	ROG (tons/day)	NO <sub>x</sub> (tons/day)	PM <sub>2.5</sub> (tons/day) <sup>1</sup>	PM <sub>10</sub> (tons/day) <sup>1</sup>
2020 Baseline	4,095,140	1.075	3.539	0.091	0.188
2046 with Proposed 2022 RTP/SCS	5,467,919	0.453	2.145	0.089	0.225
<b>Net Change from 2020 Baseline</b>	<b>1,372,779</b>	<b>(0.622)</b>	<b>(1.395)</b>	<b>(0.003)</b>	<b>0.037</b>

( ) denotes a negative number

<sup>1</sup>PM<sub>2.5</sub> and PM<sub>10</sub> includes tire wear and brake wear emissions

Notes: The on-road mobile source criteria pollutant emissions estimates for the proposed 2022 RTP/SCS were calculated using CARB's EMFAC2021 emission inventory model. VMT data was provided by KCAG. Emission totals may not add up due to rounding.

Source: See Appendix A for EMFAC2021 modeling results

As previously noted, Kings County is currently in nonattainment for federal and State PM<sub>2.5</sub> and ozone standards and State PM<sub>10</sub> standards. As shown in Table 4.3-6, emissions of ROG, NO<sub>x</sub>, and PM<sub>2.5</sub> under the 2022 RTP/SCS would decrease as compared to the 2020 baseline. However, total PM<sub>10</sub> emissions from on-road mobile sources would increase compared to the 2020 baseline.

The decrease in ROG, NO<sub>x</sub>, and PM<sub>2.5</sub> emissions is consistent with the statewide downward trend for these pollutants as a result of CARB rules designed to reduce emissions from cars and trucks. NO<sub>x</sub> emissions are primarily generated by trucks and are expected to decrease over time due in part to the impact of CARB rules designed to reduce NO<sub>x</sub> emissions from diesel trucks and buses. ROG emissions are primarily due to gasoline vehicles and are lower due to improvements in vehicle emission rates. Additionally, the transportation improvements and future land use scenario envisioned by the 2022 RTP/SCS, which encourages improved circulation and efficiency, are intended to increase residential and commercial land use capacity within existing transit corridors, shifting a greater share of future growth to these corridors and ultimately increasing density, improving circulation and multi-modal connections, and leading to lower per capita VMT, which would have a beneficial effect on air quality.



However, total PM<sub>10</sub> emissions from on-road mobile sources would increase by approximately 0.037 ton per day compared to the 2020 baseline. This represents an approximately 19.5 percent increase in PM<sub>10</sub> emissions (see Appendix A). The increase can be attributed to an increase in tire and brake wear emissions (i.e., fugitive emissions). There are no statewide regulations to reduce PM<sub>10</sub> and PM<sub>2.5</sub> emissions from tire and brake wear, but CARB is conducting research to better characterize and reduce these emissions (CARB 2021d). Given this increase in PM<sub>10</sub> emissions, long-term operational impacts would be significant because they would result in a cumulatively considerable net increase in a criteria pollutant for which the project region is non-attainment.

The proposed 2022 RTP/SCS includes several policies that would contribute to a reduction of air pollutants. Below is a summary of the proposed 2022 RTP/SCS policies and objectives that promote improvements to air quality:

- **Environmental Objective 1:** Using Transportation System Management (TSM) evaluations, consider those alternative solutions that lessen environmental problems, yet serve transportation needs.
- **Environmental Objective 4:** Coordinate transportation control measures with the San Joaquin Valley Air Pollution Control District and the latest air quality attainment plan for the San Joaquin Valley.
- **Regional Transit Objective 1:** Continue operating the Kings Area Regional Transit (KART) and Corcoran Area Transit (CAT) systems to provide dependable services for those living in Kings County's urbanized areas who have "unmet transit needs" which can be met at a cost KCAG determines to be reasonable.
- **Regional Transit Objective 6:** Encourage the practice of ridesharing/vanpooling as an alternative to single occupant vehicle commuting.
- **Regional Transit Objective 8:** Promote the coordination of transit with other transportation modes.
- **Regional Transit Objective 9:** Encourage and support the enhancement of transit services as a transportation control measure to improve air quality.
- **Active Transportation Objective 15:** Encourage the use of bicycle and pedestrian modes of transportation to enhance air quality and improve human health.
- **Environmental Improvement Objective 2:** Reduce air quality impacts caused by the existing system.

The air pollutant emissions shown in Table 4.3-6 are modeled emissions based on estimated VMT. The results account for some proposed VMT reduction strategies, such as a transportation demand management plan, telecommuting, and transit service enhancements. Regardless, mobile PM<sub>10</sub> emissions from the proposed 2022 RTP/SCS are conservatively assumed to increase. Implementation of Mitigation Measure T-2(a) would reduce particulate matter emissions to the extent feasible. However, long-term operational impacts would be significant and unavoidable.

## Other Land Use Emissions

In addition to the transportation-related air pollutant emissions shown in Table 4.3-6, land use projects envisioned by the land use scenario in the proposed 2022 RTP/SCS would also result in criteria air pollutant emissions due to sources such as architectural coatings, consumer products, fireplaces, landscaping equipment, and natural gas usage. Over the planning period, per capita emissions associated with consumer products, architectural coatings, fireplaces, landscaping

equipment, and natural gas consumption are anticipated to decline, primarily as a result of increasingly stringent CARB and SJVAPCD rules and regulations. In addition, the proposed 2022 RTP/SCS would reduce per capita transportation related air pollutant emissions associated with future land use development, which would contribute to an overall reduction in per capita air pollutant emissions associated with future (2046) land use development as compared to 2020 baseline conditions. Nevertheless, the proposed land use scenario would most likely increase countywide ROG, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions based on growth forecasts, which would increase the likelihood that Kings County will continue to exceed the federal and state PM<sub>2.5</sub> and ozone standards and state PM<sub>10</sub> standards for which Kings County is currently in non-attainment. Also, individual land use projects could exceed the SJVAPCD operational significance thresholds as listed in Section 4.3.3(a), *Methodology and Significance Thresholds* under Threshold 2(b). Therefore, because operational emissions generated by the proposed 2022 RTP/SCS land use scenario would contribute to existing non-attainment conditions in the SJVAB, impacts would be significant. The following mitigation measure would reduce this impact to the extent feasible.

### **Mitigation Measures**

For land use projects under their jurisdiction, cities and the County can and should implement the following mitigation measure, where relevant to land use projects implementing the proposed 2022 RTP/SCS. Project-specific environmental documents may adjust this mitigation measure as necessary to respond to site-specific conditions.

#### *AQ-3 Long-term Regional Operational Emissions*

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

- Require that all interior and exterior architectural coatings for all developments utilize coatings following SJVAPCD Rule 4601, *Architectural Coatings*.
- Increase building envelope energy efficiency standards in excess of applicable building standards and encourage new development to achieve zero net energy use.
- Install energy-efficient appliances, interior lighting, and building mechanical systems. Encourage installation of solar panels for new residential and commercial development.
- Locate sensitive receptors more than 500 feet of a freeway, 500 feet of urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
- Locate sensitive receptors more than 1,000 feet of a major diesel rail service or railyards. Where adequate buffer cannot be implemented, implement the following:
  - Install air filtration (as part of mechanical ventilation systems or stand-alone air cleaners) to indoor reduce pollution exposure for residents and other sensitive populations in buildings that are close to transportation network improvement projects.
  - Use air filtration devices rated MERV-13 or higher.
- Plant trees and/or vegetation suited to trapping roadway air pollution and/or sound walls between sensitive receptors and the pollution source. The vegetation buffer should be thick, with full coverage from the ground to the top of the canopy.
- Install higher efficacy public street and exterior lighting.
- Use daylight as an integral part of lighting systems in buildings.
- Use passive solar designs to take advantage of solar heating and natural cooling.

- Install light-colored “cool” roofs, cool pavements.
- Install solar and tankless hot water heaters.
- Exclude wood-burning fireplaces and stoves.
- Incorporate design measures and infrastructure that promotes safe and efficient use of alternative modes of transportation (e.g., neighborhood electric vehicles, bicycles) pedestrian access, and public transportation use. Such measures may include incorporation of electric vehicle charging stations, bicycle lanes, bicycle-friendly intersections, and bicycle parking and storage facilities.
- Incorporate design measures that promote ride sharing programs (e.g., by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading and waiting areas for ride sharing vehicles, and providing a web site or message board for coordinating rides).

### IMPLEMENTING AGENCIES AND TIMING

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

### Significance After Mitigation

If implementing agencies adopt and require the mitigation described above, emission impacts would be reduced because said measures encourage reduced vehicle trips. Implementation of Mitigation Measures T-2(a), GHG-2, and GHG-4 would also reduce operational emissions from the proposed 2022 RTP/SCS. However, since the implementation is not project- or site-specific, reductions cannot be estimated and cannot be guaranteed on a project-by-project basis. Therefore, this impact would remain significant and unavoidable. No additional feasible mitigation measures are available that would reduce daily emissions such that emissions would not contribute to existing nonattainment conditions in the SJVAB.

<b>Threshold 3:</b> Expose sensitive receptors to substantial pollutant concentrations
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### **Impact AQ-4 THE PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2022 RTP/SCS WOULD EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL PARTICULATE MATTER POLLUTANT CONCENTRATIONS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

Re-entrained dust refers to roadway dust that is “kicked up” by moving vehicles on paved and unpaved roadways. This type of dust would be generated by roadway activity under the proposed 2022 RTP/SCS. In addition, dust from construction activity would add to regional dust levels. The synergistic effects of road dust (typically measured as PM<sub>10</sub>) with ozone and the hazardous constituents of re-entrained road dust itself (carcinogens, irritants, pathogens) may affect human health by contributing to respiratory illnesses such as asthma and allergies. Although motor vehicle emission control advances have allowed vehicle tailpipe emissions of some pollutants to decrease over the last 20 years, the number of vehicles in use and the amount of vehicle activity has continued to increase. This would suggest that re-entrained road dust has increased as well, as the amount of re-entrained dust is related to the number of vehicles on a road.

Table 4.3-7 compares total particulate emissions for the baseline conditions in 2020 and 2046 with implementation of the proposed 2022 RTP/SCS.

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

Scenario	PM <sub>10</sub> Emissions (tons/day)	PM <sub>2.5</sub> Emissions (tons/day)
2020 Baseline	0.188	0.091
2046 with Proposed 2022 RTP/SCS	0.225	0.089
<b>Net Change from 2020 Baseline</b>	<b>0.037</b>	<b>(0.003)</b>
<b>Percent Change from 2020 Baseline</b>	<b>19.5%</b>	<b>(3.0%)</b>

( ) denotes a negative number.  
Source: Appendix A

As shown in Table 4.3-7, total PM<sub>10</sub> emissions would increase with implementation of the 2022 RTP/SCS as compared to existing conditions. Despite emission control advances, particulate matter emissions would be higher within the KCAG region due to the projected increase in VMT. Implementation of Mitigation Measure T-2(a) and (outlined in Section 4.13, *Transportation*) would reduce mobile source PM emissions by requiring implementation of VMT reducing initiatives. Such mitigation would reduce PM emissions from brake and tire wear because VMT would be reduced. However, it cannot be determined whether such measures would be sufficient to prevent exposure of sensitive receptors to substantial concentrations of PM<sub>10</sub>. Therefore, the 2022 RTP/SCS would expose sensitive receptors to substantial pollutant concentrations associated with re-entrained road dust, and impacts would be potentially significant.

### Mitigation Measures

Implementation of Mitigation Measures T-2(a) as described in Section 4.13, *Transportation*, would be required.

### Significance After Mitigation

As stated under Impact AQ-1, it is unlikely that implementation of the above mitigation measures would result in a decrease in daily PM<sub>10</sub> emissions to below baseline conditions by 2046. This is due to factors unrelated to discretionary approvals, such as population growth in the region. Therefore, this impact would remain significant and unavoidable. No additional feasible mitigation measures are available that would reduce daily emissions below the 2020 baseline.

<b>Threshold 3:</b> Expose sensitive receptors to substantial pollutant concentrations
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**Impact AQ-5 THE TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL TAC CONCENTRATIONS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

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

medical facilities, within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day (CARB 2005).

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

Several high traffic freeways and roads are located throughout the KCAG region, including Interstate 5 and State Routes 33, 41, 43, 198, and 269. Within the KCAG region, sensitive receptors residing close to freeways or busy roadways may experience adverse health effects beyond those typically found in urban areas. Because exposure of TACs is primarily based on local parameters (e.g., average daily traffic on local roadway segments and wind direction in relation to source and receptor), health risks adjacent to high volume roadways and transportation facilities would remain higher than regional averages.

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

To assess the impact of the proposed 2022 RTP/SCS on diesel emissions on regional roadways, an analysis of on-road mobile source diesel PM<sub>2.5</sub> and PM<sub>10</sub> emissions (primary particulate matter) and diesel NO<sub>x</sub>, (as a proxy for secondary PM<sub>10</sub>) is shown in Table 4.3-8. This table compares baseline (2020) conditions with 2046 conditions with implementation of the proposed 2022 RTP/SCS. Projected emissions for 2046 with implementation of the proposed 2022 RTP/SCS would result in reductions of diesel NO<sub>x</sub>, diesel PM<sub>2.5</sub>, and diesel PM<sub>10</sub> emissions. Because on-road diesel emissions with implementation of the 2022 RTP/SCS would decrease compared to baseline (2020) conditions, impacts related to diesel particulate matter exposure and associated health risks and nuisance odors at the regional level would be less than significant.

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

Scenario	Diesel PM <sub>2.5</sub> (tons/day)	Diesel PM <sub>10</sub> (tons/day)	Diesel NO <sub>x</sub> (tons/day)
2020 Baseline	0.04	0.04	2.80
2046 with Proposed 2022 RTP/SCS	0.03	0.03	1.94
<b>Net Change from 2020 Baseline</b>	<b>(0.01)</b>	<b>(0.01)</b>	<b>(0.86)</b>
<b>Percent Change from 2020 Baseline</b>	<b>(39%)</b>	<b>(39%)</b>	<b>(31%)</b>

Note: Totals may not add up due to rounding.  
Source: Appendix A

Diesel SO<sub>x</sub> and CO emissions would increase with implementation of the proposed RTP/SCS (see Appendix A). However, overall SO<sub>x</sub> and CO from all on-road mobile sources would decrease (see Appendix A). Because diesel emissions are a subset of overall emissions, and overall emissions of these pollutants would decrease, it can be determined that diesel SO<sub>x</sub> and CO would not contribute

to sensitive receptor exposure to substantial concentrations of pollutants. Therefore, impacts related to diesel SO<sub>x</sub> and CO are not of concern for this analysis.

Additionally, exposure to TACs is primarily based on local parameters such as average daily traffic (ADT) on local roadway segments, or wind direction in relation to source and receptor. As such, the health risks and nuisance odors adjacent to heavily trafficked roadways and transportation facilities (e.g., Interstate 5 and State Routes 33, 41, 43, 198, and 269) would remain higher than regional averages. See Section 4.13, *Transportation*, for a summary of ADT on heavily trafficked roadways in the KCAG region.

In the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005), CARB recommends avoiding siting new sensitive land uses, such as residences, schools, daycare centers, playgrounds, or medical facilities, within 500 feet of a freeway, urban roads with more than 100,000 vehicles per day, or rural roads with more than 50,000 vehicles per day. California freeway studies show about a 70 percent drop-off in particulate pollution levels at 500 feet (CARB 2005). As discussed above, proximity to freeways increases cancer risk and exposure to particulate matter. Similarly, proximity to heavily travelled transit corridors and intersections would expose residents to higher levels of diesel particulate matter and carbon monoxide.

As discussed in Chapter 2, *Project Description*, as a result of proposed 2022 RTP/SCS policies and the proposed land use scenario, the anticipated growth pattern would facilitate improved circulation and expanded roadway networks, which could result in more people being exposed to elevated health risks as compared to areas of the region more distant from such activities. The location and pattern of the proposed 2022 RTP/SCS growth would influence travel behavior. An efficient and well-maintained circulation network facilitates a reduction in individual vehicle trips and associated congestion (refer to Section 4.13, *Transportation*). Reduced congestion and vehicle trips are directly linked to reduced regional criteria air pollutant emissions and toxic air emissions from mobile sources.

It is important to note that a variety of other factors contribute to the decline in contaminant emissions compared to existing conditions, including vehicle technology, cleaner fuels, and fleet turnover. However, in order to achieve the greatest VMT reductions from an efficient circulation network, development also must necessarily be in relatively close proximity to public transit and major roadway corridors. Although the precise location and density of such development is not known at this time, the proposed 2022 RTP/SCS could result in new sensitive receptors sited close to existing and new TAC sources, potentially resulting in the exposure of sensitive receptors to substantial TAC concentrations and objectionable odors. Therefore, impacts related to TAC emissions would be potentially significant. The siting of new sensitive receptors would be subject to an individual jurisdiction's land use approval processes and would be analyzed on an individual project basis and subject to mitigation measures identified below. The below mitigation measure would reduce this impact to the extent feasible.

## **Mitigation Measures**

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measure developed for the proposed 2022 RTP/SCS program where applicable for transportation projects that would result in fugitive dust and ozone precursor emissions. Cities and the County can and should implement this measure, where relevant to land use projects implementing the proposed 2022 RTP/SCS. Project-specific environmental documents may adjust this mitigation measure as necessary to respond to site-specific conditions.

#### AQ-4 Health Risk Reduction Measures

Transportation project sponsor agencies shall implement the following measures for projects that could facilitate an increase in vehicle trips:

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

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

- Avoid siting new sensitive land uses within 500 feet of a freeway or railway.
- Require development projects for new sensitive land uses to be designed to minimize exposure to roadway-related pollutants to the maximum extent feasible through inclusion of design components including air filtration and physical barriers.
- Do not locate sensitive receptors near the entry and exit points of a distribution center.
- Locate structures and outdoor living areas for sensitive uses as far as possible from the source of emissions. As feasible, locate doors, outdoor living areas and air intake vents primarily on the side of the building away from nearby high-volume roadways or other pollution source. As feasible, incorporate dense, tiered vegetation that regains foliage year-round and has a long life span between the pollution source and the project.
- Maintain a 50-foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year).

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

#### **IMPLEMENTING AGENCIES AND TIMING**

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

#### **Significance After Mitigation**

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

**Threshold 4:** Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people

**Impact AQ-6 CONSTRUCTION OF THE TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD NOT RESULT IN OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS) ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

While offensive odors rarely cause physical harm, they can be unpleasant, leading to considerable distress among the public (SJVAPCD 2015a). The degree to which an odor is offensive is based on an individual's sensitivity and tolerance for said odor. Some people may find an odor acceptable (e.g., odors from a coffee roaster), while others may find it off-putting. Since odors are subjective, the



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

## **Construction**

Construction activities implementing the proposed 2022 RTP/SCS would generate oil and diesel fuel odors during construction from equipment use. The odors would be limited to the construction period and would be intermittent and temporary. Furthermore, these odors would dissipate rapidly with distance from in-use construction equipment. Accordingly, construction activities would not generate other emissions (such as those leading to odors) adversely affecting a substantial number of people. Impacts would be less than significant.

## **Operation**

Development associated with the proposed 2022 RTP/SCS is related to transportation improvements such as roadway widening, interchange improvements, and installation of bicycle lanes. These types of projects are not typical operational sources of odors. However, all proposed 2022 RTP/SCS projects would be subject to SJVAPCD Rule 4102, *Nuisance*, which prohibits the discharge of air contaminants or other material that would cause injury, detriment, nuisance, or annoyance to any considerable number of persons. Furthermore, the projects would be required to adhere to local policies, zoning designations, and municipal codes that would limit odors. As discussed in Section 4.3.2, *Regulatory Setting*, the County and cities within the KCAG region have air quality-related policies in their General Plans that promote multi-modal transportation, electric-vehicles, and transit-oriented development. These types of policies aim to reduce travel with fossil-fueled vehicles and indirectly reduce odors from vehicle exhaust. However, if offensive odors are present and become a nuisance, complaints can be filed by email or phone call with SJVAPCD, who will then investigate the source. Because odorous emissions associated with the operation of the projects under the proposed 2022 RTP/SCS would be regulated by local governing bodies (i.e., SJVAPCD, Kings County, and local cities), implementation of the proposed 2022 RTP/SCS would not result in other emissions (such as odors) adversely affecting a substantial number of people. Impacts would be less than significant.

## **Mitigation Measures**

No mitigation measures are required.

### **c. Specific RTP Projects That May Result in Impacts**

The RTP/SCS projects listed in Section 2, *Project Description*, would have the potential to result in air quality impacts. All projects that include a construction component could result in the impacts described under Impact AQ-2. Projects that include roadway, rail, and transit features and/or expansions could result in the impacts described under Impacts AQ-3 and AQ-5. Additional specific analysis outlined in the above mitigation measures would need to be conducted as individual projects are designed and implemented to determine the magnitude of impacts. Because any number of the proposed 2022 RTP/SCS projects that require construction equipment or include transportation improvement would presumably increase air pollutant emissions, no specific projects

are listed in this section related to the adverse impacts on air pollutant emissions in the KCAG region.

#### 4.3.4 Cumulative Impacts

For the purposes of evaluating cumulative impacts to air quality, the geographic scope of the cumulative impacts analysis is the SJVAB, which includes the KCAG planning region as well as Kern, Fresno, Madera, Merced, San Joaquin, Stanislaus, and Tulare counties. As detailed in Section 4.3.1(d), *Current Air Quality*, Kings County is in nonattainment for federal ozone and PM<sub>2.5</sub> standards and state ozone, PM<sub>10</sub>, and PM<sub>2.5</sub> standards. Because Kings County is in nonattainment for these air quality standards, a cumulative air quality impact currently exists. Any growth within Kings County would contribute to existing exceedances of ambient air quality standards. SJVAPCD has prepared air quality plans for both ozone and particulate matter to address this cumulative impact, improve conditions, and meet federal and state air quality standards. As stated in the SJVAPCD GAMAQI (2015), any proposed development project that would individually have a significant air quality impact related to criteria air pollutant emissions would also be considered have a cumulatively considerable contribution to existing significant cumulative impacts related to criteria air pollutant emissions. For TACs, the SJVAPCD GAMAQI (2015) states that because impacts from TACs are localized and the thresholds of significance for TACs have been established at such a conservative level, risks over the individual thresholds of significance are also considered cumulatively significant.

Construction activities associated with transportation projects under the proposed 2022 RTP/SCS, as well as the land use projects envisioned by the proposed 2022 RTP/SCS, would create fugitive dust and ozone precursor emissions and have the potential to result in temporary adverse impacts on air quality. As discussed under Impact AQ-2, although any individual improvement or development project may not generate significant short-term emissions, it is probable that several projects would be under construction simultaneously, generating cumulative construction emissions that could impact air quality. Short-term impacts would be significant because construction emissions could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment. Implementation of Mitigation Measures AQ-2(a) through AQ-2(c) for individual projects would reduce PM and ozone precursor emissions. However, the contribution of construction emissions facilitated by the proposed 2022 RTP/SCS to the existing significant cumulative impact would remain cumulatively considerable and unavoidable because it cannot be guaranteed that all future project-level impacts can be mitigated to a less-than-significant level.

As discussed under Impact AQ-3, regional ozone precursor and PM emissions from on-road mobile sources would decrease by 2046 with the proposed 2022 RTP/SCS compared to baseline 2020 conditions. As a result, the long-term operational mobile source emissions under the proposed 2022 RTP/SCS would not result in a cumulatively considerable contribution to existing significant cumulative air quality impacts. However, land use operational emissions would be cumulatively considerable before and after mitigation because land use projects under the proposed 2022 RTP/SCS may contribute to an increase in ozone precursor and PM emissions.

As discussed under Impact AQ-5, impacts from TAC emissions would be significant and unavoidable despite a decrease in TAC emissions from baseline 2020 conditions because the proposed 2022 RTP/SCS may result in the siting of sensitive receptors in close proximity to existing or new sources of TACs. Mitigation Measure AQ-4 would reduce impacts from TACs; however, it cannot be guaranteed that the 2022 RTP/SCS's contribution to cumulative TAC emissions impacts can be mitigated to a less-than-significant level. Therefore, the impact would remain cumulatively considerable.

## 4.4 Biological Resources

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This section describes the existing biological resources within the KCAG region and evaluates the significance of potential impacts to sensitive biological resources that would result from implementation of the proposed 2022 RTP/SCS, and feasible mitigation measures to reduce these potential impacts. Sources utilized in this discussion include data provided by the U.S. Fish and Wildlife Service (USFWS), the California Native Plant Society (CNPS), and the California Department of Fish and Wildlife (CDFW).

### 4.4.1 Setting

#### **a. Vegetation Communities and Land Cover Types**

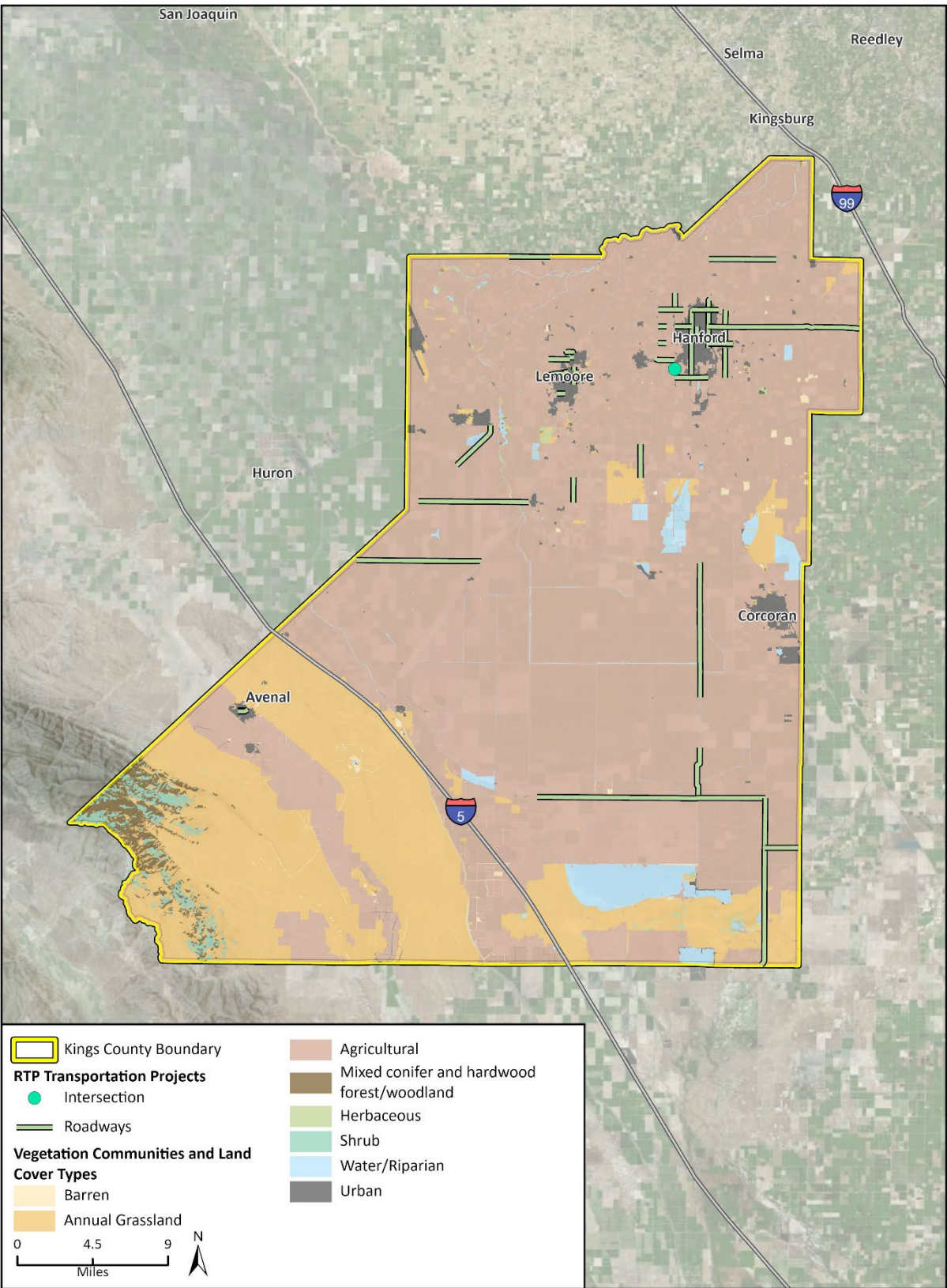
The KCAG region contains a wide diversity of tree (hardwood and coniferous forests, oak woodlands), shrub (chaparrals, coastal scrubs), and herbaceous (grasslands) vegetation communities and land cover types. Eighteen vegetation communities and land cover types are mapped by CDFW's California Wildlife Habitat Relationships (CWHR) classification system within the KCAG region (CDFW 2014). Of the 18 vegetation communities and land cover types, six are tree dominated, four are shrub dominated, three are herbaceous, and five are either developed, sparsely/non-vegetated or cropland (see Figure 4.4-1). Because of the scale of vegetation data at the County level, the vegetation communities and land covers presented in Figure 4.4-1 depict a broad illustration of the distribution of CWHR categories (i.e., tree, shrub, herbaceous, etc.) found within the KCAG Region. A description of each of the vegetation communities and land covers adapted from *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988) is presented below. The vegetation classifications from *A Manual of California Vegetation, Second Edition* (Sawyer et al. 2009) that most closely resemble those classified by the CWHR are also presented in each description where possible.

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

#### **Tree-Dominated Vegetation Communities**

The KCAG region is home to a variety of hardwood and mixed woodlands (Figure 4.4-1). These tree-dominated vegetation communities can support diverse wildlife populations. Riparian vegetation communities are generally the terrestrial areas adjacent to freshwater bodies forming a vegetated corridor from stream edge to floodplain edge. Riparian vegetation communities occur in and along the Kings River and its tributaries, as well as along the many creeks, streams, and ravines in the region. Riparian areas are rich in wildlife species, providing foraging, migration, roosting, and nesting/breeding habitat. The following are descriptions of types of tree-dominated vegetation communities that occur within three miles of transportation projects included in the 2022 RTP/SCS.

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



Imagery provided by Microsoft Bing and its licensors © 2022.  
Additional data provided by CalVeg classification by USDA Forest Service Region 5.

KCAG EIR  
Fig 4.4-1 Vegetation Communities and Land Cover Types

### *Blue Oak-Foothill Pine*

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

### *Blue Oak Woodland*

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

### *Juniper Woodland*

Juniper vegetation communities are characterized as woodlands of open to dense aggregations of junipers (*Juniperus* sp.) in the form of arborescent shrubs or small trees. Juniper woodlands generally occur at middle elevations forming a transition between habitats at higher elevations. Juniper woodlands occur on virtually all exposures and slopes but are common on level to gently rolling topography. Junipers may be found on soils ranging from rocky and well drained. Slope aspect has a strong influence on the elevational distribution of junipers. On north facing slopes, junipers range from 4,000 to 6,000 feet; whereas, on south facing slopes, junipers range from 6,000 to 8,000 feet. Juniper woodland communities in the Central Valley correspond to the various Woodland Alliances as described by Sawyer et al. (2009) including *Juniperus californica* Woodland Alliance, *Juniperus grandis* Woodland Alliance, and *Juniperus occidentalis* Woodland Alliance depending on the dominant species present.

### Valley Oak Woodland

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

### Valley-Foothill Riparian

This vegetation community is associated with drainages, particularly those with low velocity flows, flood plains, and gentle topography. Valley-foothill riparian is generally comprised of a canopy and sub-canopy tree layers dominated by valley oak, cottonwoods (*Populus* sp.), Oregon ash (*Fraxinus latifolia*), white alder (*Alnus rhombifolia*), and boxelder (*Acer negundo*). The understory shrub layer comprises species such as willows (*Salix* spp.) wild grape (*Vitus californica*), wild rose (*Rosa californica*), blackberry (*Rubus* spp.), blue elderberry (*Sambucus cerulean*) and poison-oak. In the KCAG region, valley-foothill riparian communities may occur anywhere rivers, streams, or other aquatic habitats are found. Valley-foothill riparian can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances may include, but are not limited to, *Platanus racemosa* Woodland Alliance, *Populus fremontii* Woodland Alliance, and various *Salix* alliances, depending upon dominant species present (Sawyer et al. 2009).

### Eucalyptus Forest

This vegetation community ranges from single-species thickets with little or no shrubby understory to scattered trees over a well-developed herbaceous and shrubby understory. In most cases, eucalyptus forms a dense stand with a closed canopy. Blue gum eucalyptus (*Eucalyptus globulus*) and red gum eucalyptus (*E. camaldulensis*) are the most common eucalyptus species found in these stands. The understory of these areas tends to have extensive patches of leaf litter but may include species such as poison oak. Trees in this vegetation community are typically planted in rows for use as a wind break.

## Shrub Dominated Vegetation Communities

Shrub-dominated vegetation communities, such as chaparral communities, are comprised primarily of woody, evergreen shrubs and occur primarily in the southern portion of the KCAG region. The following are descriptions of shrub-dominated vegetation communities that occur within three miles of construction projects outlined in the 2022 RTP/SCS.

### Alkali Desert Scrub

This vegetation community typically consists of open stands of very low to moderately high grayish, spinescent, leptophyllous to microphyllous subshrubs and shrubs, which are physiognomically uniform. Shrubs and subshrubs are widely spaced and occur in dry soils. Shrub composition in this

habitat type is typically dominated by Chenopods, most notably the saltbush species (*Atriplex* sp.), such as the four-winged saltbush (*Atriplex canescens*) and allscale (*Atriplex polycarpa*). Alkali desert scrub typically corresponds to either the *Atriplex canescens* Shrubland Alliance or the *Atriplex polycarpa* Shrubland Alliance as described by Sawyer et al. (2009).

#### *Chamise-Redshank Chaparral*

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

#### *Coastal Scrub*

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

#### *Mixed Chaparral*

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

### **Herbaceous Dominated Vegetation Communities**

These vegetation communities are generally comprised of areas dominated by grasses and other non-woody species. Most of this habitat in the KCAG region is comprised of non-native grasslands. Native perennial grasslands, which are dominated by perennial bunch grasses, such as purple needlegrass (*Stipa pulchra*), were historically abundant within the KCAG region but are now currently patchy in distribution. The following are descriptions of the herbaceous dominated



vegetation communities that occur within three miles of construction projects outlined in the 2022 RTP/SCS.

### *Annual Grasslands*

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

### *Perennial Grassland*

Perennial grassland vegetation communities in the KCAG region occurs primarily as patchy relic communities now dominated by annual grasses and forbs. Perennial grasslands are dominated by perennial grass species such as California oatgrass (*Danthonia californica*), Pacific hairgrass (*Deschampsia holciformis*), and sweet vernalgrass (*Anthoxanthum odoratum*). Perennial grassland communities typically occur on ridges and south-facing slopes, alternating with forest and scrub in the valleys and on north-facing slopes. Relic perennial grasses in annual grassland communities occur in patches throughout the state.

### *Pasture*

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

## **Developed and Sparsely/Non-Vegetated Land Cover Types**

Developed, sparsely to non-vegetated, and cropland land covers are abundant in the KCAG region (Figure 4.4-1). Developed land covers are usually sparsely or non-vegetated and are associated with urban and agricultural areas and are highly disturbed. Species that occur in these areas are typically adapted to anthropogenic disturbance and/or comprised of ornamental species. Sparsely vegetated land covers also tend to be associated with rock outcrops and cliffs. Managed croplands are included with this group of land covers due to frequent disturbance and high levels of active management. The following are descriptions of developed, sparsely/non-vegetated and cropland land covers that occur within three miles of construction projects outlined in the 2022 RTP/SCS.



### *Rice*

Rice fields are a flood irrigated crop comprised of densely grown annual grasses of the genus *Oryza*. Rice crops generally range in height from a couple of feet to as high as six feet. Rice is usually grown in leveed fields that are flooded most of the growing period, then dried out to mature and facilitate harvesting. Although rice paddies are a human developed habitat type, they are similar to seasonally flooded wetlands in hydrology.

### *Cropland*

This land cover is characterized by areas in active agriculture used to grow annual or perennial herbaceous crops and is entirely man-made. The structure of vegetation can vary in size, shape, and growing pattern. The dominant cropland use is row crops and can also include hay and grain. Subcategories of cropland classifications include, but are not limited to, dryland grain crop, irrigated hayfield crop and irrigated row and field crop, irrigated hayfield, rice, and pasture. Because croplands generally require flat topography, in the KCAG region this community occurs primarily on the valley floor. Orchards and vineyards are classified separately. Currently, four subcategories of the cropland classification occur within three miles of projects outlined in the 2022 RTP/SCS: *Dryland Grain Crop, Irrigated Grain Crop, Irrigated Hayfield, and Irrigated Row and Field Crop*.

**Dryland Grain Crop.** Vegetation in the dryland (non-irrigated) grain and seed crops land cover type includes seed producing grasses, primarily barley, cereal rye, oats, and wheat. These seed and grain crops are annuals.

**Irrigated Grain Crop.** Irrigated grain crops include corn, beans, barley, etc. Corn can reach ten feet tall while dry beans are only several inches tall. Most irrigated grain and seed crops are grown in rows. Some may form 100 percent canopy, while others may have significant bare areas between rows. All seed and grain crops are annuals. Irrigated grain and seed crops are located on flat to gently rolling terrain. When flat terrain is put into crop production, it is usually leveled to facilitate irrigation. Rolling terrain is either dry farmed or irrigated by sprinklers and the soils often dictate the crops grown.

**Irrigated Hayfield.** Vegetation includes a variety of sizes, shapes, and growing patterns. Most irrigated grain and seed crops are grown in rows. Some may exhibit complete canopy enclosure while others may have significant bare areas between rows. All seed and grain crops are annuals. They are typically planted in spring and harvested in summer or fall; however, they may be planted in rotation with other irrigated crops. Sometimes winter wheat or barley may be planted after harvest of a previous crop in the fall, dry farmed (during the wet winter and early spring months) or irrigated, and then harvested in the late spring

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

### *Orchard/Vineyard*

This land cover is typically characterized by open, single-species tree- or woody vine-dominated agricultural areas. Depending on the tree or vine type and pruning methods, they are usually low, bushy plants with an open understory to facilitate harvest. Trees such as citrus, avocados, and olives are evergreen, and other common tree crops such as walnuts and stone fruits are deciduous. The understory is usually composed of low growing grasses and other herbaceous plants but may be managed to prevent understory growth totally or partially, such as along tree rows. Vineyards, comprised of grape vines, also share similar characteristics. Subcategories of orchard/vineyard classifications include, but are not limited to, deciduous orchard and evergreen orchard. Orchards generally require flat topography however vineyards may occur on foothills; therefore, this community may occur anywhere in the KCAG region. Currently three subcategories of orchard/vineyard classification occur within three miles of projects outlined in the 2022 RTP/SCS: *Deciduous Orchard*, *Evergreen Orchard*, and *Vineyard*.

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

**Evergreen Orchard.** Evergreen orchards include trees, such as avocados, dates, grapefruit, lemons, limes, olives, oranges, tangerines, tangelos, and tangors. Mature trees range in height for many species from 15 to 30 feet but may be 10 feet or less for some dwarf varieties, 60 feet or more in date palms. Crowns typically do not touch and are usually in a linear pattern. Spacing between trees is uniform depending on desired spread of mature trees. The understory in evergreen orchards usually consists of bare soil due to active managements such as tillage and/or herbicides.

**Vineyard.** Vineyards are composed of single species planted in rows, usually supported on wood and wire trellises. Vines are normally intertwined in the rows but open between rows. Rows under the vines are usually sprayed with herbicides to prevent growth of herbaceous plants. Between rows of vines, grasses and other herbaceous plants may be planted or allowed to grow as a cover crop to control erosion. Vineyards can be found on flat alluvial soils in the valley floors, in rolling foothill areas, or on relatively steep slopes. Most vineyards are in valley or foothill areas.

### *Urban*

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

### *Barren*

This land cover is defined by the absence of vegetation. Any area with less than two percent total herbaceous vegetation cover and less than 10 percent relative cover by tree or shrub species is

defined as barren (Mayer and Laudenslayer 1988). Structure and composition of the substrate is largely determined by the region of the state as well as surrounding environment. Examples of barren land cover include areas of exposed parent rock or talus. This community may occur anywhere in the KCAG region, but primarily occurs on the valley floor.

## **b. Drainages and Wetlands**

### **Drainages**

The KCAG region contains one major river, the Kings River, which drains an area of the high western Sierra Nevada and the Central Valley. Several creeks also associated with Kings County including Cross Creek and Avenal Creek (Figure 4.4-2). The drainages in these watersheds are of biological importance as they provide valuable foraging habitat, breeding habitat, and movement habitat for a wide variety of animal species. These species can include sensitive species such as the California red-legged frog (*Rana draytonii*), the western pond turtle (*Emys marmorata*), and blunt-nosed leopard lizard (*Gambelia sila*).

### **Canals**

The KCAG region also contains a network of waterways, such as the California aqueduct which transports water through the region for use in irrigation and flood control.

### **Wetlands**

Wetlands are regarded as important biological resources both because of their rarity and because they serve a variety of functional values. Several types of wetlands exist in the KCAG region, including freshwater marshes, vernal pools, and riparian habitats. Additionally, several areas within three miles of 2022 RTP/SCS projects contain wetlands mapped by the USFWS *National Wetlands Inventory* (NWI; USFWS 2022a). A general description of each of the classifications used in the NWI is provided below. Of those wetland types mapped by the NWI, freshwater emergent wetland, riverine and lacustrine habitats are also mapped by the CWHR (CDFW 2014).

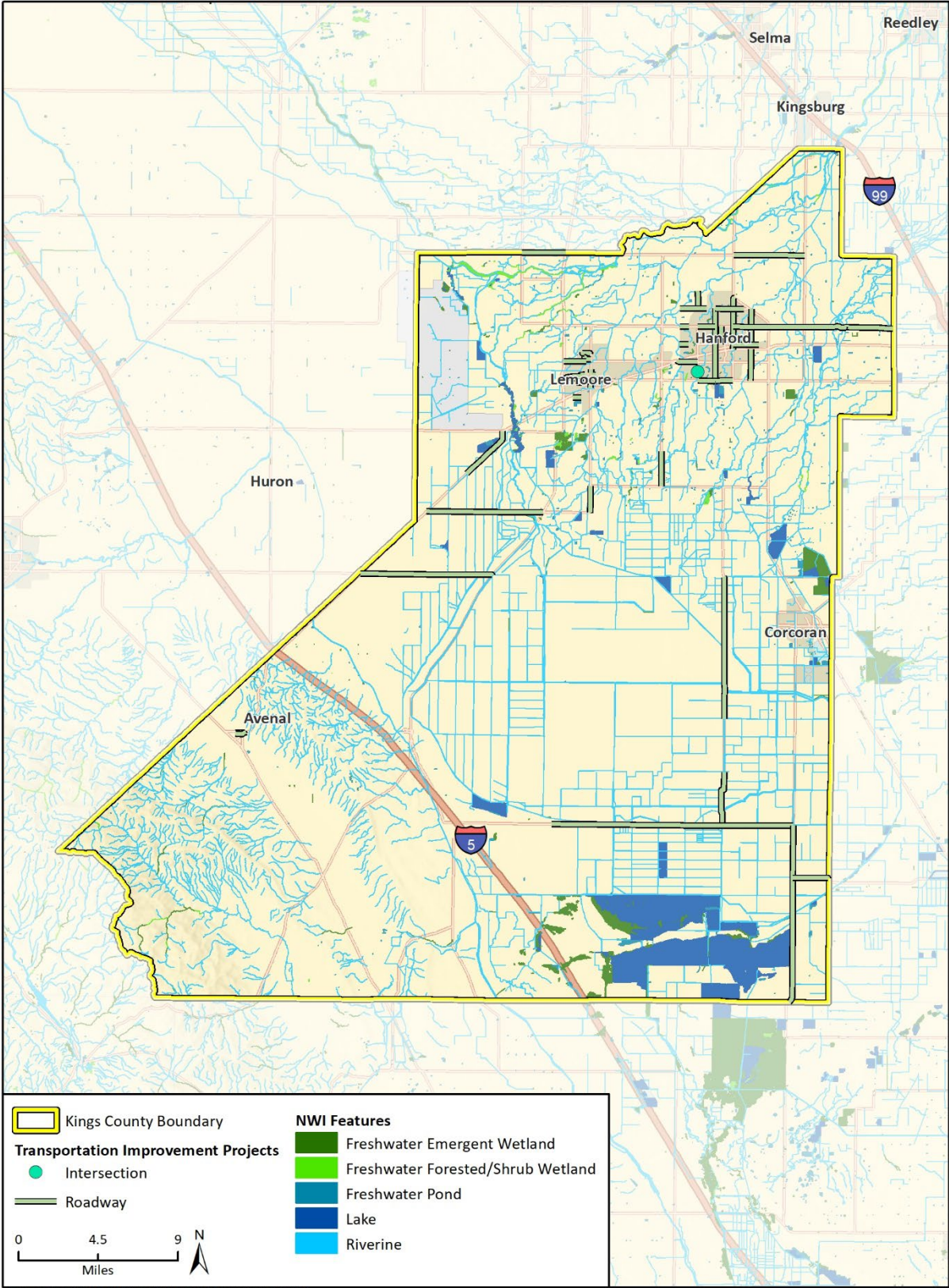
#### *Vernal Pools*

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

#### *Freshwater Emergent Wetlands*

Freshwater emergent wetlands are dominated by emergent herbaceous plant species, mosses, and/or lichens. Wetlands of this type are low in salinity. Wetlands which lack vegetation can be

Figure 4.4-2 Wetlands and Drainages in the KCAG Region



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Additional data provided by U.S. Fish & Wildlife Service National Wetlands Inventory, 2022.

Fig. 4.4-2 Wetlands and Aquatic Resources in Kings County

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

#### *Freshwater Forested/Shrub Wetlands*

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

#### *Freshwater Ponds*

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

#### *Lakes*

Lakes are a lacustrine system which includes wetlands and deep water habitats located in a topographic depression or dammed river channel. These areas tend to be greater than 20 acres. Vegetation cover within this habitat is generally less than 30 percent, surrounding deeper open water, and often occurs in the form of emergent or surface vegetation. Substrates are composed of at least 25 percent cover of particles smaller than stones. This wetland type is also mapped by the CWHR and categorized as lacustrine habitat which also includes vernal pool complexes.

#### *Riverine*

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

## c. Special-Status Biological Resources

### Special-Status Species

For the purpose of this EIR, special-status species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the USFWS under the federal Endangered Species Act (ESA); those listed or proposed for listing as rare, threatened, or endangered by the CDFW under the California Endangered Species Act (CESA); animals designated as “Species of Special Concern,” “Fully Protected,” or “Watch List” by the CDFW. Those plants ranked as California Rare Plant Rank (CRPR) 1 or 2 are typically regarded as rare, threatened, or endangered under CEQA by lead agencies and were considered as such in this PEIR. The CRPR utilizes the following code definitions:

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

CRPR List 3 species are “review list,” and CRPR 4 species are considered “watch list” species. CRPR 3 and 4 species do not typically warrant analysis under CEQA except where they are part of a unique community, from the type locality, or designated as rare or significant by local governments, or where cumulative impacts could result in population-level effects. The CRPR 3 and 4 species reported from the region are not locally designated as rare or significant by any general plan within the KCAG region and are not part of a unique community. Additionally, the KCAG region is not known to be the type locality for any ranked plant species. Therefore, potential impacts to CRPR 3 and CRPR 4 species were not considered in this analysis.

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

Queries of the USFWS Information, Planning and Conservation System (IPaC; USFWS 2022b), the CDFW California Natural Diversity Database (CNDDDB) (CDFW 2022a), and CNPS *Online Inventory of Rare, Threatened and Endangered Plants of California* (CNPS 2022) were conducted. These queries were conducted to obtain comprehensive information regarding state and federally listed species considered to have potential to occur within the KCAG region.

The KCAG region is home to several species protected by federal and state agencies. Important animal species can be found in a variety of habitats the KCAG region hosts. The CNDDDB (CDFW 2022a), CNPS (2022), and USFWS IPaC (2022b) together list 55 special-status plant and animal species (25 plant species and 30 animal species) that occur or have potential to occur within the

KCAG region. The status and habitat requirements of those species are presented in Appendix B as Tables B-1 and B-2, respectively.

In addition, although not listed in the CNDDDB, mountain lions (*Puma concolor*) are legally classified as "specially protected species." In July 2019, the Center for Biological Diversity petitioned CDFW to list mountain lions as threatened under the CESA within a proposed evolutionarily significant unit (ESU) located in Southern California and along the central coast of California. In April 2020, the Commission found that listing of this ESU may be warranted and designated mountain lion within the ESU as a candidate species under CESA. Mountain lions inhabit diverse habitats across most of California and can be found wherever deer are present, which includes the foothills and mountainous areas in the western portion of the KCAG region, west of Interstate 5 (I-5).

### **Sensitive Natural Communities and Critical Habitat**

Several natural communities considered sensitive by the CDFW occur within the KCAG region (CDFW 2022a). The CNDDDB lists three natural communities that occur with the KCAG region, all of which are mapped in the vicinity of 2022 RTP/SCS projects. The Sensitive Natural Communities List in the CNDDDB is not currently maintained and no new information has been added in several years. As such, the CDFW maintains a List of Vegetation Alliances and Associations<sup>1</sup> (CDFW 2022c). According to the CDFW's Vegetation Program, Alliances with State ranks of S1-S3 are considered imperiled, and thus, potentially of special concern. Federally designated critical habitat for four species also occurs in the KCAG region (Figure 4.4-3). These sensitive communities and critical habitats are also listed below in Table 4.4-1.

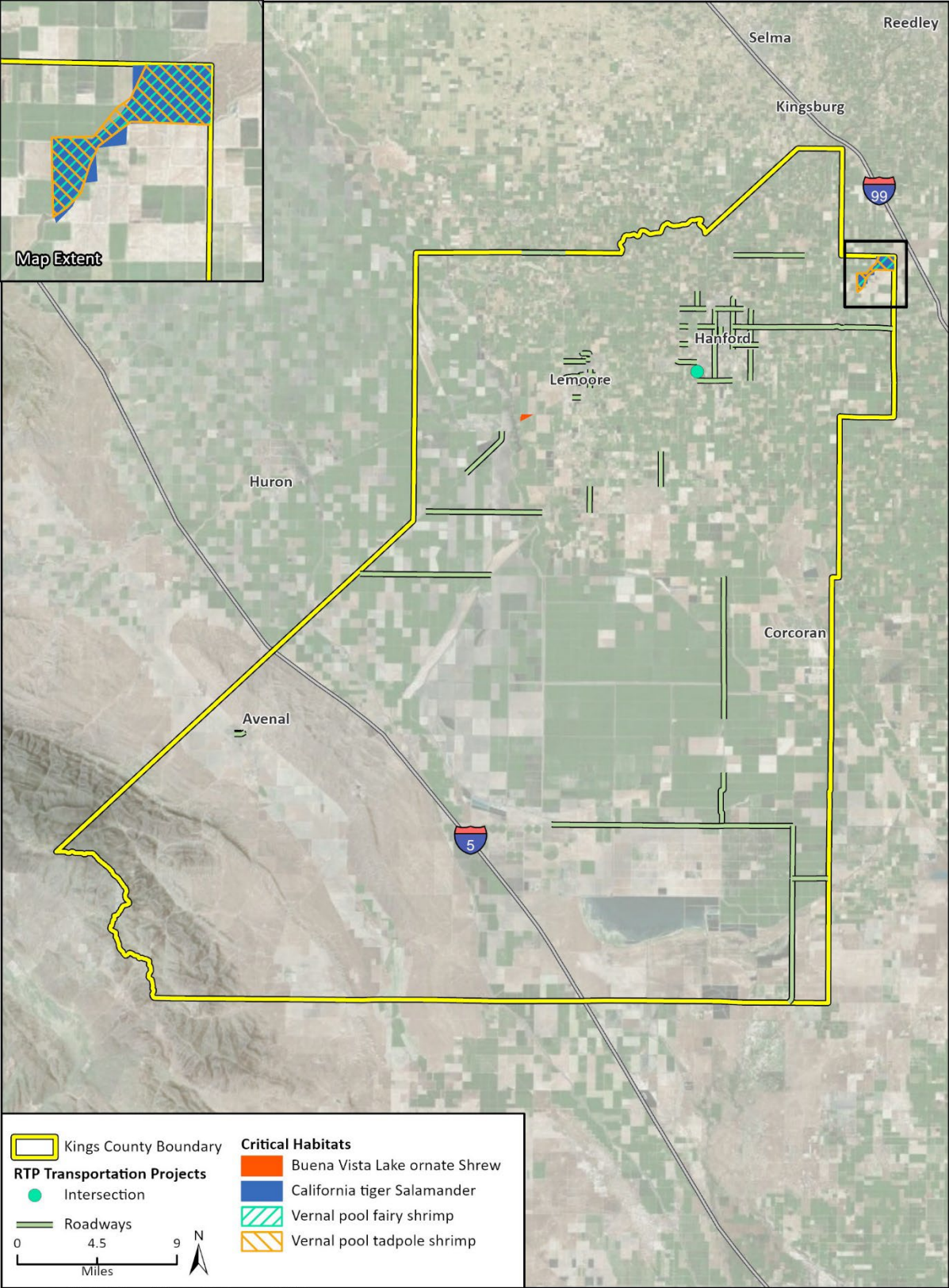
Naturally occurring vegetation communities dominated by native species are likely to be considered sensitive if they have a restricted range or have been largely degraded by non-native invasive species or development. Several blue oak alliances are considered sensitive natural communities and may occur in blue oak-foothill pine and blue oak woodland communities. Chamise-redshank chaparral and mixed chaparral may also contain alliances considered sensitive by CDFW (CDFW 2022c). Riparian habitats are also generally considered sensitive by CDFW, including many willow (*Salix* sp.), California sycamore, and Fremont cottonwood alliances (CDFW 2022c).

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



Figure 4.4-3 Critical Habitats in the KCAG Region





**Table 4.4-1 Sensitive Communities and Critical Habitats Documented within the KCAG Region**

Communities Considered Sensitive by the CDFW
Valley Sacaton Grassland
Valley Saltbush Scrub
Valley Sink Scrub
Critical Habitats
Buena Vista Lake Ornate Shrew ( <i>Sorex ornatus relictus</i> )
California tiger salamander ( <i>Ambystoma californiense</i> )
Vernal pool fairy shrimp ( <i>Branchinecta lynchi</i> )
Vernal pool tadpole shrimp ( <i>Lepidurus packardii</i> )
*Indicates that some 2022 RTP/SCS projects are located within this species designated critical habitat.
Sources: CNDDDB (CDFW 2022a); USFWS IPaC (2022b; 2022c)

## Wildlife Movement Corridors

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

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

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

The mountainous regions of the KCAG region likely support wildlife movement on a regional scale while riparian corridors, waterways, flood control channels, contiguous habitat and upland habitat on levees may provide more local scale opportunities for wildlife movement throughout the region. The CDFW BIOS (2022b) mapped two essential connectivity areas within the KCAG region and are

shown in Figure 4.4-4. One in the southwestern portion of the region extending from Kettleman Hills to Cholame Valley and the other in the southeastern portion of the County primarily following Homeland Canal. These are also identified from the report, *Missing Linkages: Restoring Connectivity to the California Landscape* (Penrod et al. 2001) in addition to three other linkages in southern Kings County. These areas are identified as important movement corridors for species such as San Joaquin kit fox, blunt-nosed leopard lizard, giant kangaroo rat and short-nosed kangaroo rat. Additionally, the KCAG region west of I-5 extends into the Southern Coast range which may serve as a movement corridor for the state provisionally protected Southern California/Central Coast ESU of mountain lion.

## 4.4.2 Regulatory Setting

### a. Federal Laws, Regulations, and Policies

#### Endangered Species Act

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

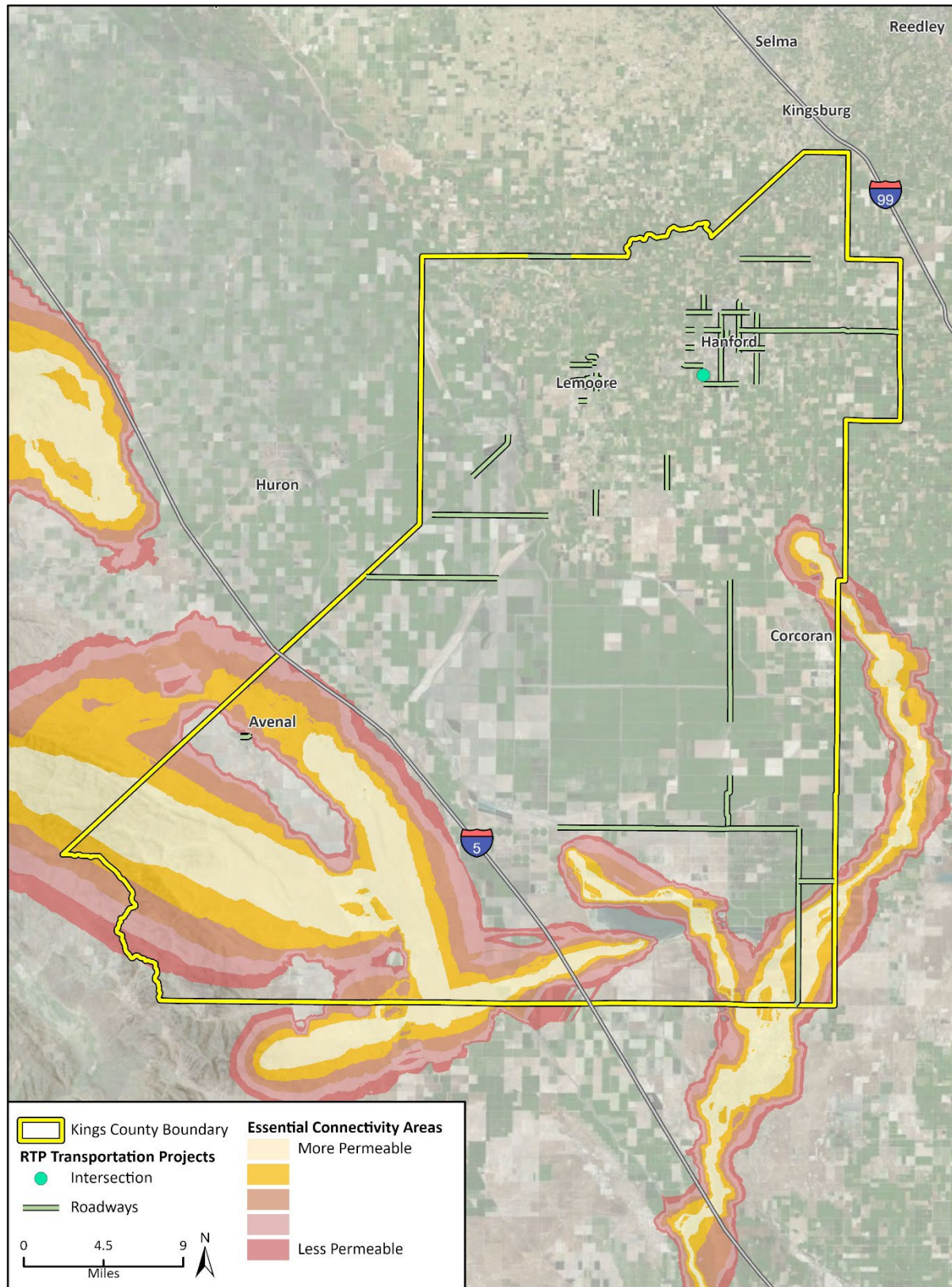
Section 7(a)(2) of ESA and its implementing regulations require federal agencies to consult with USFWS or National Marine Fisheries Service (NMFS) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species, or result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

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

#### Migratory Bird Treaty Act

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

**Figure 4.4-4 Essential Connectivity Areas in the KCAG Region**



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Additional data provided by CDFW BIOS - Terrestrial Connectivity ACE; 2022.

KCAG EIR  
Fig 4.4-4 Essential Connectivity Areas

## **Section 10 of the River and Harbors Act**

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

## **Clean Water Act**

Under Section 404 of the Clean Water Act, the USACE, with EPA oversight, has authority to regulate activities that result in discharge of dredged or fill material into wetlands or other “waters of the United States.” Perennial and intermittent creeks are considered waters of the United States if they are hydrologically connected to other jurisdictional waters. In achieving the goals of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) seeks to avoid adverse impacts and offset unavoidable adverse impacts on existing aquatic resources. Any discharge of dredged or fill material into jurisdictional wetlands or other jurisdictional “waters of the United States” would require a Section 404 permit from the USACE prior to the start of work. Typically, when a project involves impacts to waters of the United States, the goal of no net loss of wetlands is met by compensatory mitigation; in general, the type and location options for compensatory mitigation should comply with the hierarchy established by the Corp/EPA 2008 Mitigation Rule (U.S. Environmental Protection Agency 2022) (in descending order): (1) mitigation banks; (2) in-lieu fee programs; and (3) permittee-responsible compensatory mitigation. Also, in accordance with Section 401 of the Clean Water Act, applicants for a Section 404 permit must obtain water quality certification from the appropriate RWQCB.

## **b. State Laws, Regulations, and Policies**

### **Endangered Species Act and Fully Protected Species**

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

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

### **California Fish and Game Code Sections 3503, 3503.5 and 3511**

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

### **California Fish and Game Code Sections 1360-1372**

CFG Sections 1360 through 1372 comprise the Oak Woodlands Conservation Act. The act was enacted to protect oak woodland habitats that were being diminished by development, firewood

harvesting, and agricultural conversions. The Oak Woodlands Conservation Program was established because of the act and is intended to provide project funding opportunities for private landowners, conservation organizations, and cities and counties to conserve and restore oak woodlands. The program authorizes the Wildlife Conservation Board to purchase oak woodland conservation easements and provide grants for land improvements and oak restoration efforts. Section 21083.4 of CEQA requires counties to determine if a project within their jurisdiction may result in conversion of oak woodlands that would have a significant adverse effect on the environment. If the lead agency determines that a project would result in a significant adverse effect on oak woodlands, mitigation measures to reduce the significant adverse effect of converting oak woodlands to other land uses are required.

### **Native Plant Protection Act**

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

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

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

### **Natural Community Conservation Planning Act**

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

### **Porter-Cologne Water Quality Control Act**

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

procedures; and 4) procedures for the submittal, review, and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities (SWRCB 2022).

### **California Department of Transportation - California Streets and Highways Code Section 156.3**

Assessments and remediation of potential barriers to fish passage for transportation projects using State or federal transportation funds are required. Such assessments must be conducted for any projects that involve stream crossings or other alterations and must be submitted to the CDFW. New projects must be constructed so that they do not present a barrier to fish passage.

### **c. Local Laws, Regulations, and Policies**

#### **Kings County General Plan**

The Resource Conservation Element of the Kings County 2035 General Plan (2010) includes several goals to protect biological resources. Various objectives are also included which pertain to, but are not limited to, protection of rare and endangered species, development in environmentally sensitive areas, and protection of riparian areas. The following goals and objectives regarding biological resources are applicable to the 2022 RTP/SCS in Kings County:

**RC Goal A1** - Beneficially use, efficiently manage, and protect water resources while developing strategies to capture additional water sources that may become available to ensure long-term sustainable water supplies for the region.

*RC Objective A2.1* - Maintain the existing Kings River water conveyance system as a designated floodway and encourage the preservation of riparian habitat along the Kings River consistent with state and federally mandated flood control purposes.

**RC Goal D1** - Preserve land that contains important natural plant and animal habitats.

*RC Objective D1.1* - Require that development in or adjacent to important natural plant and animal habitats minimize the disruption of such habitats.

**RC Goal D2** - Maintain the quality of existing natural wetland areas as required by the California Department of Fish and Game, the United States Fish and Wildlife Service and the United States Army Corp of Engineers.

*RC Objective D2.1* - Maintain compatible land uses in natural wetland habitats designated by state and federal agencies.

*RC Objective D3.1* - Ensure that, in development decisions affecting riparian environments, the conservation of fish and wildlife habitat and the protection of scenic qualities are balanced with other purposes representing basic health, safety, and economic needs.

**RC Goal E1** - Balance the protection of the County's diverse plant and animal communities with the County's economic needs.

*RC Objective E1.1* - Require mitigation measures to protect important plant and wildlife habitats.

**RC Goal F1** - Manage natural stream environments to provide protection for fish habitat.

**RC Goal H1** - Support the extraction of mineral resources in a manner that will not degrade the environment or conflict with other land uses.

*RC Objective H1.2* - Ensure that mineral extraction operations are designed, located and operated so that they do not harm humans or the natural environment or are incompatible with surrounding land uses.

## **City of Avenal General Plan**

The Natural Resources, Conservation, and Recreation Element of the City of Avenal 2035 General Plan Update (2018) includes objectives to protect the natural resources found within the city. The following objectives are applicable to projects in Avenal pursuant to the 2022 RTP/SCS:

**Goal NR-1** – Protect natural resources to meet the needs of present and future generations

*Policy NR-1.11* – Avoid impacts to riparian areas to preserve natural habitat and to support water percolation and groundwater recharge.

*Policy NR-1.12* – Promote biological diversity and the use of native plant species in public and private landscaping.

*Policy NR-1.13* – Require new development to meet all federal, State and regional regulations for habitat and species protection.

*Policy NR-1.14* – Support and participate in local and regional attempts to restore and maintain viable habitat for endangered plant and animal species, and wetlands, including working with surrounding jurisdictions and State and federal agencies as appropriate. Any regional plans should provide data for the Avenal area on special-status species, and guidelines and standards for mitigation of impacts on special-status species.

*Policy NR-1.15* – Require mitigation of potential impacts on special-status plant or animal species of no-net-loss of habitat value. Mitigation measures shall incorporate, as the City deems appropriate, the guidelines and recommendations of the USFWS, and CDFG.

*Policy NR-1.16* – Require all vacant or agricultural properties outside the urbanized portion of the City that are 20 acres or larger in size to complete a reconnaissance level biological survey prior to and as a condition of approval. Specifically, require pre-construction surveys for kit fox, conducted by a qualified biologist, following the current recommendations for protection of the San Joaquin kit fox developed by the USFWS.

*Policy NR-1.17* – Use native plants for landscaping of public projects, including parks and community facilities.

*Policy NR-1.18* – Design development projects to retain mature trees whenever possible. Where tree removal cannot be avoided, require tree replacement or suitable mitigation.

## **City of Corcoran General Plan**

The Open Space, Conservation and Recreation Element of the City of Corcoran General Plan 2025 (2007) includes Natural Resources Objectives to protect the biological resources found within the city. The following objectives and policies are applicable to projects in Corcoran pursuant to the 2022 RTP/SCS:



**Objective A.** Protect natural resources including groundwater, soils, and air quality, to meet the needs of present and future generations.

**Objective B.** Ensure that environmental hazards including potential flooding and impacts from agricultural practices are adequately addressed in the development process within the City and the Corcoran Planning Area.

*Policy 5.6* - Continue to promote biological diversity and the use of plant species compatible with the bio-region in landscaping, open spaces, and in other areas as appropriate.

## **City of Hanford General Plan**

The Open Space, Conservation & Recreation Element of the City of Hanford 2035 General Plan Update (2017) includes a guiding goal and supporting objectives to protect the biological resources found within the city. The following guiding policy is applicable to projects in Hanford pursuant to the 2022 RTP/SCS:

**Goal 04** - Protection of natural habitat and other biological resources.

*Policy 031* – Preserve and enhance natural open space areas.

*Policy 032* – Where appropriate and feasible, establish permanent mechanisms to protect wetlands and riparian corridors.

*Policy 033* – Identify and protect vernal pools that may be located in the Planning Area.

*Policy 034* – Avoid the potential negative impacts of increased human activity on sensitive habitat areas when establishing new recreation facilities or programs.

*Policy 035* – Ensure that potential impacts to biological resources and sensitive habitat are carefully evaluated when considering development projects.

*Policy 036* – Manage or eliminate non-native invasive species from City-owned property and open space.

*Policy 037* – Promote the preservation of existing mature trees and encourage the planting of appropriate shade trees in new developments.

*Policy 038* – Encourage the planting of native tree species and drought-tolerant vegetation.

*Policy 039* – Establish programs in connection with environmental review processes to protect endangered wildlife and their habitats.

*Policy 040* – Work with state, federal, and local agencies on the preservation of sensitive wildlife species in the City.

## **City of Lemoore General Plan**

The Conservation and Open Space Element of the City of Lemoore 2030 General Plan (2008) includes various goals to protect the biological resources found within the city. The following guiding policies are applicable to projects in Lemoore, pursuant to the 2022 RTP/SCS:

**COS-G-1** - Acquire, preserve, and maintain open space and natural resources for future generations.



**COS-G-2** - Use the open space system to meet multiple needs, including bike and trail linkages, storm water drainage and treatment, wildlife habitat, active and passive recreation, and greenbelt buffer to define the boundaries of the City.

**COS-G-6** - Protect wetlands as necessary components to the regional ecological system and as vital and unique habitats.

**COS-G-7** - Protect rare and endangered species.

**COS-G-9** - Manage storm drainage to protect agricultural areas, habitats, and the ground water supply.

## **Local Ordinances**

Some resources are afforded protection via local ordinances such as those that protect trees, riparian corridors, and environmentally sensitive habitats. Kings County and incorporated cities within the KCAG region have municipal codes which protect natural resources and addresses compliance with environmental regulations.

The Hanford Municipal Code contains includes Section 12.12.310, *Protection and preservation of heritage trees*, to provide for the protection and preservation of heritage trees within Hanford's limits. Under this section, it is unlawful for a heritage tree in the city to be harmed, injured, defaced, destroyed, or removed without first obtaining a permit from the city council and director in compliance with Chapter 12.12.220 of the Hanford Municipal Code, *Permit application*.

The Lemoore Municipal Code includes Section 9-5D1-4, *Tree Preservation*, intended to protect and preserve heritage trees within the city and require permits from the city's planning director prior to removal of any heritage or protected.

Section 9.63.02 of the Avenal Municipal Code guides how trees within Avenal may be planted, maintained, and removed. This section requires that all trees planted and maintained within the public right-of-way be consistent with the City Street Tree Master Plan.

The City Code of Corcoran also has similar provisions, policies and regulations in place related to appropriate planting and removal of trees. Chapter four of the City Code requires that trees and shrubs must be planted and/or removed in Corcoran with the explicit approval of the Public Works Director (Section 7-4-5).

### **4.4.3 Impact Analysis**

#### **a. Methodology and Significance Thresholds**

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

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

3. Have a substantial adverse effect on state or federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
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.

Data on biological resources were collected from numerous sources, including relevant literature, aerial photographs, maps of natural resources, and data on special-status species and sensitive habitat information obtained from the CDFW CNDDb (2022a), CDFW BIOS (2022b), CWHR (CDFW 2014), CNPS online *Inventory of Rare and Endangered Plants of California* (2022), and the USFWS IPaC (2022b). The USFWS NWI (2022a) and Critical Habitat Mapper (2022c) were also queried. Potential areas of disturbance associated with construction projects or land use development as discussed in the proposed 2022 RTP/SCS, were compared to the identified biological resource occurrences to determine whether an impact may occur.

## **b. Project Impacts and Mitigation Measures**

The following section discusses potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2022 RTP/SCS. Section 4.4.3.c below summarizes the impacts associated with transportation improvement projects in the proposed 2022 RTP/SCS. Due to the programmatic nature of the proposed 2022 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement projects and future projects under the land use scenario envisioned by the proposed 2022 RTP/SCS could result in the impacts as described in the following section.

**Threshold 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

**Impact BIO-1 IMPLEMENTATION OF THE TRANSPORTATION PROJECTS AND LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD HAVE A SUBSTANTIAL ADVERSE EFFECT, EITHER DIRECTLY OR THROUGH HABITAT MODIFICATIONS, ON SPECIES IDENTIFIED AS A CANDIDATE, SENSITIVE, OR SPECIAL-STATUS SPECIES IN LOCAL OR REGIONAL PLANS, POLICIES, OR REGULATIONS, OR BY THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE OR U.S. FISH AND WILDLIFE SERVICE. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

For the purposes of this analysis, special-status plant and wildlife species include those designations described under 4.4.1(c) above, plus locally important species. Most of the capital improvements proposed under the 2022 RTP/SCS consist of minor expansions of existing facilities that would not involve construction in environmentally sensitive habitat areas. However, several projects could

affect areas occupied by special-status plant and animal species, namely those projects that would involve new construction or expansion of existing facilities into suitable habitat. As mentioned above, there are 55 special status species known to occur or with potential to occur within the KCAG region. Twenty-one (21) of these species are protected by the federal government through listing under the ESA or by the State government through listing under CESA or designation as Fully Protected (animals only). The remaining species shown in Appendix B are protected through CEQA and/or through local ordinances. Most special-status species have very limited ranges within the County and have specific habitat requirements. Special-status species may also tend to be associated with sensitive habitats, such as riparian habitats and drainages.

Due to the programmatic nature of the 2022 RTP/SCS, a precise, project-level analysis of the specific impacts of individual transportation projects on special-status species is not possible at this time. As future transportation system improvement projects identified in the 2022 RTP/SCS are planned and designed, site-specific environmental review will be conducted by the agencies responsible for implementing such projects. However, some special-status species are expected to be encountered at the locations where projects administered under the 2022 RTP/SCS would occur. Thus, it is assumed that some resources would not be avoided and that potentially significant impacts would occur.

Projects such as those that occur over or in the vicinity of rivers and creeks, such as multiuse paths and overpass retrofitting and replacement, would be within suitable habitat for species such as California red-legged frog (federally threatened and SSC). In addition, projects in the vicinity of smaller water bodies such as canals and creeks are within suitable habitat for the federally and State endangered as well as fully protected blunt-nosed leopard lizard and federally and State threatened giant gartersnake (*Thamnophis gigas*).

In addition to the rivers and creeks that may be impacted, future transportation projects under the 2022 RTP/SCS could impact upland habitats and the sensitive species that may occupy them. For example, San Joaquin whipsnake (*Coluber flagellum ruddocki*; SSC), may be present in scrub, grassland and some woodland habitats near roads where projects could occur. Furthermore, the wide variety of habitats within the 2022 RTP/SCS area can support many species of nesting birds, including sensitive species such as the State threatened Swainson's hawk (*Buteo swainsoni*) and burrowing owl (*Athene cunicularia*; SSC). Several special-status bat species may be affected by proposed projects where they occur under bridges, buildings or similar structures, or in native habitat adjacent to construction areas. Disturbance of special-status plants such as the federal and State endangered California jewel-flower (*Caulanthus californicus*) could result in reductions in local population size, habitat fragmentation, or lower reproductive success.

Direct impacts to special-status species include injury or mortality occurring during implementation of projects under the 2022 RTP/SCS. Direct impacts also include habitat modification and loss such that it results in the mortality or otherwise alters the foraging and breeding behavior substantially enough to cause injury. Indirect impacts could be caused by the spread of invasive non-native species that out-compete native species and/or alter habitat towards a state that is unsuitable for special-status species. For example, the spread of certain weed species can reduce the biodiversity of native habitats, potentially eliminating special-status plant species and reducing the availability of suitable forage and breeding sites for special-status animal species. Indirect impacts could also result from increased access by humans and domestic animals, particularly in areas where trails may be planned. Increased presence of humans and domestic animals foster the spread of non-native invasive plant species and can disrupt the normal behaviors of animal species.

In addition to direct and indirect impacts that may result from transportation improvement projects, the 2022 RTP/SCS also contains a future land use scenario that envisions infill development and mixed-use development. This land use scenario focuses future development within existing urbanized areas. As a result, encroachment into undisturbed habitat would be reduced when compared to a land use scenario that did not focus future development within existing urbanized areas. This would limit impacts to sensitive plant and animal species. However, it is possible that sensitive plant and animal species could be located on future infill and mixed-use development project sites. As a result, infill and mixed-use development could impact plant and animal species that may be present on or in proximity to undeveloped infill parcels. Many aquatic and semi-aquatic special-status animal species are associated with creeks even in the most densely developed urban areas. Both native and non-native trees and shrubs throughout urban areas may also support nesting birds. Impacts would be potentially significant.

### **Mitigation Measures**

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures for applicable transportation projects that would result in impacts to special-status animal and plant species or their habitats. Kings County and incorporated cities in the KCAG region can and should implement these measures, where relevant to land use projects implementing the 2022 RTP/SCS. Project-specific environmental impacts may require these mitigation measures be revised or expanded in response to site-specific conditions.

#### *BIO-1(a) Biological Resources Screening and Assessment*

The implementing agencies shall, or can and should, implement the following measures during CEQA review of projects implementing the proposed 2022 RTP/SCS. On a project-by-project basis, a preliminary biological resource screening shall be performed as part of the environmental review process to determine whether the project has any potential to impact biological resources. If it is determined that the project has no potential to impact biological resources, no further action is required. If the project would have the potential to impact biological resources, prior to construction, a qualified biologist shall conduct a biological resources assessment to document the existing biological resources within the project footprint plus a buffer and to determine the potential impacts to those resources. The biological resources assessment shall evaluate the potential for impacts to all biological resources including, but not limited to: special-status species, nesting birds, wildlife movement, sensitive plant communities, critical habitat, Essential Fish Habitat, and other resources judged to be sensitive by local, state, and/or federal agencies. Pending the results of the biological resources assessment, design alterations, further technical studies (i.e., protocol surveys) and/or consultations with the USFWS, CDFW and/or other local, state, and federal agencies may be required. If the project cannot be designed without complete avoidance, the sponsor agency shall coordinate with the appropriate regulatory agency (i.e., USFWS, NMFS, CDFW, USACE) to obtain regulatory permits and implement project - specific mitigation prior to any construction activities. The following mitigation measures [BIO-1(b) through BIO-1(j)] shall be incorporated only as applicable into the biological resources assessment and/or the project CEQA document for projects where specific resources are present or may be present and impacted by the project. Note that specific surveys described in the mitigation measures below may be completed as part of the biological resources assessment where suitable habitat is present. The results of the biological resources screening and assessment shall be provided to the implementing agency for review and approval.

*BIO-1(b) Special-status Plant Species Surveys*

If completion of the project-specific biological resources assessment determines that special-status plant species have potential to occur on-site, surveys for special-status plants shall be completed prior to any vegetation removal, grubbing, or other construction activity of each project (including staging and mobilization). The surveys shall be floristic in nature and shall be seasonally timed to coincide with the target species identified in the project-specific biological resources assessment. All plant surveys shall be conducted by a qualified biologist approved by the implementing agency no more than two years prior to project implementation. All special-status plant species identified on-site shall be mapped onto a site-specific aerial photograph or topographic map. Surveys shall be conducted in accordance with the most current protocols established by the CNPS, CDFW and/or USFWS. A report of the survey results shall be submitted to the implementing agency for review. If special-status plant species are identified, mitigation measure BIO-1(c) shall apply.

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

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

If special-status plants species cannot be avoided and would be impacted by a project implemented under the 2022 RTP/SCS, all impacts shall be mitigated at a minimum ratio of 1:1 (number of acres or individuals restored to number of acres or individuals impacted) for each species as a component of habitat restoration. A restoration plan shall be prepared and submitted to the implementing agency. The restoration plan shall include, at a minimum, the following components:

- Description of the project/impact site (i.e., location, responsible parties, areas to be impacted by habitat type);
- Goal(s) of the compensatory mitigation project [type(s) and area(s) of habitat to be established, restored, enhanced, and/or preserved; specific functions and values of habitat type(s) to be established, restored, enhanced, and/or preserved];
- Description of the proposed compensatory mitigation site (location and size, ownership status, existing functions and values);
- Implementation plan for the compensatory mitigation site (rationale for expecting implementation success, responsible parties, schedule, site preparation, planting plan);
- Maintenance activities during the monitoring period, including weed removal as appropriate (activities, responsible parties, schedule);
- Monitoring plan for the compensatory mitigation site, including no less than quarterly monitoring for the first year (performance standards, target functions and values, target acreages to be established, restored, enhanced, and/or preserved, annual monitoring reports);
- Success criteria based on the goals and measurable objectives; said criteria to include numeric criteria to be selected based on the scale of the restoration effort and the restoration technique used:
  - At least 80 percent survival of container plants, and/or

- Successful establishment the required number of individuals planted from seed to meet required replacement ratios; and/or
- Sampling-based recruitment/survival criteria to achieve vegetative cover or total number of surviving individuals equal to at least 70 percent of the equivalent metric in reference sites for the same habitat type; sampling-based criteria must use a scientifically valid vegetation sampling method;
- An adaptive management program and remedial measures to address any shortcomings in meeting success criteria;
- Notification of completion of compensatory mitigation and agency confirmation; and
- Contingency measures (initiating procedures, alternative locations for contingency compensatory mitigation, funding mechanism).

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

If the results of the biological resources assessment determine that suitable habitat may be present for any such species, protocol habitat assessments/surveys shall be completed in accordance with CDFW and/or USFWS/NMFS protocols prior to issuance of any construction permits/project approvals.

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

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

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

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

Compensatory mitigation shall be achieved through purchase of credits at a USFWS, NMFS and/or CDFW approved conservation bank if available for the affected species, and/or through providing compensatory mitigation to offset impacts to federal and/or state listed species habitat.

Compensatory mitigation shall be provided at a minimum ratio of 1:1 with the final ratio to be determined by a qualified biologist (in coordination with CDFW and USFWS as and if applicable). Compensatory mitigation may be combined/nested with special-status plant species and sensitive community restoration where applicable. Temporary impact areas shall be restored to pre-project conditions.

If on and/or off-site compensatory mitigation sites are identified, the implementing agency shall retain a qualified biologist to prepare a Habitat Mitigation and Monitoring Plan (HMMP) to ensure the success of compensatory mitigation sites that are to be conserved for compensation of permanent impacts to federal and/or state listed species. The HMMP shall identify long term site

management needs, routine monitoring techniques, techniques, and success criteria, and shall determine if the conservation site has restoration needs to function as a suitable mitigation site. If restoration is required on the conservation site, the HMMP shall contain the restoration components outlined under the Restoration Plan listed in measure BIO-1(c). The HMMP shall be submitted to the implementing agency.

*BIO-1(f) Endangered/Threatened Species Avoidance and Minimization*

The following measures shall be applied to aquatic and terrestrial species, where appropriate. Project sponsors shall select from these measures as appropriate depending on site conditions, the species with potential for occurrence, and the results of the biological resources screening and assessment (measure BIO-1[a]).

- Preconstruction surveys for federal and/or state listed species with potential to occur shall be conducted where suitable habitat is present by a qualified biologist not more than 48 hours prior to the start of construction activities. The survey area shall include the proposed disturbance area and all proposed ingress/egress routes, plus a 100-foot buffer. If any life stage of federal and/or state listed species is found within the survey area, the appropriate measures in the BO or Habitat Conservation Plan(HCP)/Incidental Take Permit (ITP) issued by the USFWS/NMFS (relevant to federal listed species) and/or the ITP issued by the CDFW (relevant to state listed species) shall be implemented; or if such guidance is not in place for the activity, the USFWS, NMFS and/or CDFW shall be consulted to determine the appropriate course of action. The results of the pre-construction surveys shall be submitted to the implementing agency for review and approval prior to start of construction.
- Ground disturbance shall be limited to the minimum necessary to complete the project. The project limits of disturbance shall be flagged. Areas of special biological concern within or adjacent to the limits of disturbance shall have highly visible orange construction fencing installed between said area and the limits of disturbance.
- All projects occurring within/adjacent to aquatic habitats (including riparian habitats and wetlands) shall be completed between April 1 and October 31, to avoid impacts to sensitive aquatic species.
- All projects occurring within or adjacent to sensitive habitats that may support federally and/or state endangered/threatened species shall have a qualified biologist present during all initial ground disturbing/vegetation clearing activities. Once initial ground disturbing/vegetation clearing activities have been completed, said biologist shall conduct daily pre-activity clearance surveys for endangered/threatened species. Alternatively, and upon approval of the CDFW and/or USFWS or as outlined in project permits, said biologist may conduct site inspections at a minimum of once per week to ensure all prescribed avoidance and minimization measures are being fully implemented.
- No endangered/threatened species shall be captured and relocated without authorization from the CDFW and/or USFWS/NMFS.
- If pumps are used for dewatering activities, all intakes shall be completely screened with wire mesh not larger than five millimeters to prevent animals from entering the pump system.
- If at any time during construction of the project an endangered/threatened species enters the construction site or otherwise may be impacted by the project, all project activities shall cease. At that point, the USFWS, NMFS and/or CDFW shall be consulted to determine the appropriate course of action, or the appropriate measures implemented in accordance with the BO or HCP/ITP issued by the USFWS (relevant to federal listed species) and/or the ITP issued by the

CDFW (relevant to state listed species) and work can then continue as guided by those documents and the agencies as appropriate.

- All vehicle maintenance/fueling/staging shall occur not less than 100 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills. A minimum of one spill kit shall be available at each work location near riparian habitat or water bodies.
- No equipment shall be permitted to enter wetted portions of any affected drainage channel.
- All equipment operating within streambeds (restricted to conditions in which water is not present) shall be in good conditions and free of leaks. Spill containment shall be installed under all equipment staged within stream areas and extra spill containment and clean up materials shall be located in close proximity for easy access.
- If project activities could degrade water quality, water quality sampling shall be implemented to identify the pre-project baseline, and to monitor during construction for comparison to the baseline.
- At the end of each workday, excavations shall be secured with cover or a ramp shall be provided to prevent wildlife entrapment.
- All trenches, pipes, culverts, or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.

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

Depending on the species identified in the biological resources screening assessment (measure BIO-1[a]), measures shall be selected from among the following to reduce the potential for impacts to non-listed special-status animal species:

- Preconstruction clearance surveys shall be conducted within 14 days prior to the start of construction (including staging and mobilization). The surveys shall cover the entire disturbance footprint plus a minimum 100-foot buffer and shall identify all special-status animal species that may occur on-site. All non-listed special-status species shall be relocated from the site either through direct capture or through passive exclusion. A report of the preconstruction survey shall be submitted to the implementing agency for their review and approval prior to the start of construction.
- A qualified biologist shall be present during all initial ground disturbing activities, including vegetation removal, to recover special-status animal species unearthed by construction activities.
- Upon completion of the project, a qualified biologist shall prepare a final compliance report documenting all compliance activities implemented for the project, including the preconstruction survey results. The report shall be submitted within 30 days of completion of the project.
- If special-status bat species may be present and impacted by the project, within 30 days of the start of construction a qualified biologist shall conduct presence/absence surveys for special-status bats, in consultation with the CDFW, where suitable roosting habitat is present. Surveys shall be conducted using acoustic detectors and by searching tree cavities, crevices, and other areas where bats may roost. If active bat roosts or colonies are present, the biologist shall evaluate the type of roost to determine the next step.
- If a maternity colony is present, all construction activities shall be postponed within a 250-foot buffer around the maternity colony until it is determined by a qualified biologist that the young



have dispersed or as recommended by CDFW through consultation. Once it has been determined that the roost is clear of bats, the roost shall be removed immediately.

- If a roost is determined by a qualified biologist to be used by a large number of bats (large hibernaculum), alternative roosts, such as bat boxes if appropriate for the species, shall be designed and installed near the project site. The number and size of alternative roosts installed will depend on the size of the hibernaculum and shall be determined through consultations with the CDFW.
- If other active roosts are located, exclusion devices such as valves, sheeting or flap-style one-way devices that allow bats to exit but not re-enter roosts discourage bats from occupying the site.

#### *BIO-1(h) Preconstruction Surveys for Nesting Birds*

The implementing agencies shall, or can and should, implement the following measures during CEQA review of projects implementing the proposed 2022 RTP/SCS. For construction activities occurring during the nesting season (generally February 1 to September 15), surveys for nesting birds covered by the CFGC, the Migratory Bird Treaty Act, and Bald and Golden Eagle Protection Act shall be conducted by a qualified biologist no more than 30 days prior to vegetation removal activities.

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

If active nests (nests with eggs or chicks) are located, the qualified biologist shall establish an appropriate avoidance buffer ranging from 50 to 300 feet based on the species biology and the current and anticipated disturbance levels occurring in vicinity of the nest. The objective of the buffer shall be to reduce disturbance of nesting birds. All buffers shall be marked using high-visibility flagging or fencing, and, unless approved by the qualified biologist, no construction activities shall be allowed within the buffers until the young have fledged from the nest or the nest fails.

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

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

#### *BIO-1(i) Fence and Signpost Restriction*

Any fencing posts or signs installed temporarily or permanently throughout the course of the project shall have the top three post holes covered or filled with screws or bolts to prevent the entrapment of wildlife, specifically the talons of birds of prey. Also, fencing shall incorporate wildlife friendly design elements, such as smooth wires and having a 6-inch or greater gap above grade. Fencing shall also be designed to be wildlife friendly (e.g., smooth top wire, smooth bottom wire at 6 inches above grade, etc.).

*BIO-1 (j) Worker Environmental Awareness Program (WEAP)*

The implementing agencies shall, or can and should, implement the following measures during CEQA review of projects implementing the proposed 2022 RTP/SCS. Prior to initiation of construction activities (including staging and mobilization), all personnel associated with project construction shall attend WEAP training, conducted by a qualified biologist, to aid workers in recognizing special-status resources that may occur in the project area. The specifics of this program shall include identification of the sensitive species and habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers, and other personnel involved with construction of the project. All employees shall sign a form documenting that they have attended the WEAP and understand the information presented to them.

**IMPLEMENTING AGENCIES AND TIMING**

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

**Significance After Mitigation**

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

<b>Threshold 2:</b>	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service
<b>Threshold 3:</b>	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

**Impact BIO-2 IMPLEMENTATION OF TRANSPORTATION PROJECTS AND THE LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD RESULT IN SUBSTANTIAL ADVERSE EFFECTS ON SENSITIVE HABITATS, INCLUDING SENSITIVE NATURAL COMMUNITIES, AND STATE AND FEDERALLY PROTECTED WETLANDS. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

Transportation projects and land use development that may be implemented under the 2022 RTP/SCS have the potential to impact riparian areas and wetlands, as mapped on Figure 4.4-2. Due to the programmatic nature of this analysis, the project-specific extent and severity of the impacts is not known at this time. Some examples of types of projects with potential impacts include, but are not limited to: retrofit, construction and reconstruction/widening of multiuse paths over and

adjacent to rivers and creeks, including the Kings River and its tributaries. These types of projects would have potential to impact riparian areas, as well as water bodies including canals. In addition, projects such as multi-use trails and bike paths may also involve development along riparian corridors. Riparian areas provide wildlife habitat, and movement corridors, enabling both terrestrial and aquatic organisms to move along river systems between areas of suitable habitat. Construction of the proposed facilities could have both direct impacts associated with the disturbance of riparian flora and fauna and indirect impacts caused by increased erosion and sedimentation, which can adversely affect downstream water quality. Construction could also impact aquatic features protected by CDFW and require a Lake and Streambed Alteration Agreement. These features include rivers, streams, and lakes, including the banks of these features.

In addition, other sensitive habitats, including oak woodlands, could occur at locations of transportation improvement projects and land use development sites. As noted in Section 4.4.1(c), vegetation alliances with State ranks of S1-S3 are considered to be imperiled and thus, potentially of special concern and sensitive (CDFW 2022c). Impacts to these sensitive communities, including oak woodlands, could be significant. Direct impacts to sensitive habitats include loss of habitat during construction of the project. Indirect impacts include habitat degradation caused by the introduction of invasive plant species incidentally from construction equipment and through selection of invasive landscape plants, as well as erosion of disturbed areas.

The future land use scenario envisioned by the 2022 RTP/SCS would encourage infill development and mixed-use development. This land use scenario focuses future development within existing urbanized areas. As a result, future infill and mixed-use development are likely to result in only limited impacts on riparian habitat or sensitive habitat, though some parcels that have been relatively free of ground disturbance may contain remnants of sensitive native habitats such as Valley Saltbush Scrub and Valley Sink Scrub or other vegetation alliances and associations that are deemed sensitive by the CDFW. Furthermore, some areas mapped by CWHR as somewhat disturbed habitats, such as annual grasslands, may at the local scale include sensitive native vegetation with unique assemblages of native plants, such as areas dominated by native wildflowers, vernal pools, and native grasslands. Impacts would be potentially significant.

## **Mitigation Measures**

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measure for applicable transportation projects that would impact sensitive habitats and/or jurisdictional wetlands and waters. Kings County and incorporated cities in the KCAG region can and should implement these measures, where relevant to land use projects implementing the 2022 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

### *BIO-2(a) Aquatic Resources Jurisdictional Delineation and Impact Avoidance*

The implementing agencies shall, or can and should, implement the following measures during CEQA review of projects implementing the proposed 2022 RTP/SCS. If the results of measure BIO-1(a) indicates projects implemented under the proposed 2022 RTP/SCS occur within or adjacent to wetland, drainages, riparian habitats, or other areas that may fall under the jurisdiction of the CDFW, USACE, and/or RWQCB, a qualified biologist shall complete an aquatic resources delineation in accordance with the requirement set forth by each agency. The result shall be submitted to the implementing agency, USACE, RWQCB, and/or CDFW, as appropriate, for review and approval, and

the project shall be designed to avoid and minimize impacts to jurisdictional areas to the extent feasible. The delineation shall serve as the basis to identify potentially jurisdictional areas to be protected during construction, through implementation of the avoidance and minimization identified in measure BIO-2(f).

*BIO-2(b) Wetland, Drainages, and Riparian Habitat Restoration*

The implementing agencies shall, or can and should, implement the following measures during CEQA review of projects implementing the proposed 2022 RTP/SCS. Unavoidable impacts to jurisdictional wetlands, drainages, and riparian habitat shall be mitigated at a ratio as required in applicable permits but shall not be less than a minimum ratio of 1:1, and as determined by a qualified biologist retained by the implementing agency and shall occur on-site or as close to the impacted habitat as possible. A mitigation and monitoring plan consistent with regulatory agency requirements and meeting those minimum standards outlined in measure BIO-1(c) shall be developed by a qualified biologist and submitted to the regulatory agency overseeing the project for approval. Alternatively, mitigation shall be accomplished through purchase of credits from an approved wetlands mitigation bank.

*BIO-2(c) Landscaping Plan*

If landscaping is proposed for a specific project, a qualified biologist/landscape architect retained by the implementing agency shall prepare a landscape plan. Drought tolerant, locally native plant species shall be used. Noxious, invasive and/or non-native plant species that are recognized on the Federal Noxious Weed List, California Noxious Weeds List and/or California Invasive Plant Council Inventory shall not be permitted. Species selected for planting shall be regionally appropriate native species that are known to occur in the adjacent native habitat types.

*BIO-2(d) Sensitive Natural Community Avoidance and Mitigation*

If the results of measure BIO-1(a) indicates projects implemented under the proposed 2022 RTP/SCS would impact sensitive natural communities, the implementing agency shall avoid impacts to sensitive natural communities through final project design modifications if feasible.

If the implementing agency determines that sensitive natural communities cannot be avoided, impacts shall be mitigated on-site or offsite at a minimum ratio of 1:1 for permanently impacted sensitive communities (habitat restored for habitat lost). Temporarily impacted areas shall be restored to pre-project conditions. A Restoration Plan shall be developed by a qualified biologist and submitted to the implementing agency.

*BIO-2(e) Invasive Weed Prevention and Management Program*

Prior to start of construction for each project that occurs within or adjacent to native habitats, an Invasive Weed Prevention and Management Program shall be developed by a qualified biologist retained by the implementing agency to prevent invasion of native habitat by non-native plant species. The plan shall be submitted to the implementing agency for review and approval. A list of target species shall be included, along with measures for early detection and eradication.

The plan, which shall be implemented by the implementing agency, shall also include, but not be limited to, the following measures to prevent the introduction of invasive weed species:

- During construction, limit the use of imported soils for fill. If the use of imported fill material is necessary, the imported material must be obtained from a source that is known to be free of invasive plant species.
- To minimize colonization of disturbed areas and the spread of invasive species, the contractor shall stockpile topsoil and redeposit the stockpiled soil after construction or transport the topsoil to a permitted landfill for disposal.
- All erosion control materials, including straw bales, straw wattles, or mulch used on-site must be free of invasive species seed.
- Exotic and invasive plant species shall be excluded from any erosion control seed mixes and/or landscaping plant palettes associated with the proposed project
- All disturbed areas shall be hydroseeded with a mix of locally native species upon completion of work in those areas.

*BIO-2(f) Wetlands, Drainages, and Riparian Habitat Best Management Practices During Construction*

The following best management practices shall be required by the implementing agency for development within or adjacent to wetlands, drainages, or riparian habitat:

- Access routes, staging and construction areas shall be limited to the minimum area necessary to achieve the project goal and minimize impacts to other waters including locating access routes and ancillary construction areas outside of jurisdictional areas.
- To control sedimentation during and after project implementation, appropriate erosion control materials shall be deployed to minimize adverse effects on jurisdictional areas in the vicinity of the project.
- Project activities within the jurisdictional areas should occur during the dry season (typically between June 1 and November 1) in any given year, or as otherwise directed by the regulatory agencies.
- During construction, no litter or construction debris shall be placed within jurisdictional areas. All such debris and waste shall be picked up daily and properly disposed of at an appropriate site.
- Raw cement, concrete, or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic species resulting from project related activities, shall be prevented from contaminating the soil and/or entering wetlands, drainages, or riparian habitat.
- All refueling, maintenance and staging of equipment and vehicles shall occur at least 100 feet from bodies of water and in a location where a potential spill would not drain directly toward aquatic habitat (e.g., on a slope that drains away from the water source). Prior to the onset of work activities, a plan must be in place for prompt and effective response to any accidental spills.

**IMPLEMENTING AGENCIES AND TIMING**

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

## Significance After Mitigation

Compliance with the above mitigation measures would reduce impacts to sensitive communities and wetlands because the mitigation measures require focused biological surveys, best management practices for avoidance or minimization impacts, compensation for disturbed or loss of sensitive communities and wetlands and coordination with permitting agencies, as required prior to project implementation. However, it cannot be guaranteed that all future project level impacts can be mitigated to a less than significant level for all sensitive habitats. There are no other feasible mitigation measures. As such, impacts would remain significant and unavoidable.

**Threshold 4:** 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

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**Impact BIO-3 IMPLEMENTATION OF TRANSPORTATION PROJECTS AND THE LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2022 RTP/SCS MAY RESULT IN IMPACTS TO WILDLIFE MOVEMENT, INCLUDING FISH MIGRATION, AND/OR IMPEDE THE USE OF A NATIVE WILDLIFE NURSERY. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

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As discussed above in Section 4.4.1, *Setting*, the KCAG region contains two mapped ECAs (CDFW 2022b). One is in the southwestern portion of the region extending from Kettleman Hills to Cholame Valley and the other in the southeastern portion of Kings County primarily following Homeland Canal. Three other important movement corridors are also identified and are associated with rivers and watercourses including the Kings River and its tributaries. These movement corridors primarily connect undeveloped land in the KCAG region but also include some agricultural and developed areas (mostly rural residential) and some are bisected by major roadways. As such, several transportation projects in the proposed 2022 RTP/SCS may overlap with areas of mapped ECAs or other locally important wildlife movement corridors including rivers and watercourses within the KCAG region.

Large swaths of undeveloped areas within the KCAG region provide vegetative cover suitable for the movement of many terrestrial wildlife species, including medium to large-sized, mobile mammals with relatively large home ranges, such as coyote, deer, bobcat, grey fox, and mountain lion, and provide foraging and breeding habitat for many species. Wildlife species can move through these vegetated areas routinely with some species also using concrete-lined or earthen stormwater channels in the area for movement.

As previously discussed under Impacts BIO-1 and BIO-2, transportation improvement projects and the land use scenario envisioned by the 2022 RTP/SCS could occur within areas that support sensitive habitat (e.g., riparian areas, undeveloped natural areas). Direct and indirect disturbances to these areas could potentially interfere with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors within the KCAG region.

Fragmentation of habitat by roads and development throughout the Central Valley and surrounding open space areas is already a serious issue, and retaining existing connectivity (e.g., roadless area) between large undeveloped areas is considered important for the long-term viability of wildlife populations in the area, and therefore is very desirable from the standpoint of conservation planning.

Even in more urbanized areas such as Hanford, there are pockets of natural areas that are considered native wildlife nursery sites (e.g., Kings River and drainages). These areas have the potential to support nesting birds and other breeding wildlife. Development projects are required to comply with CFGC sections (e.g., Sections 3503, 3503.5, 3513, and 4150); thus, it is unlikely that infill development accommodated under the 2022 RTP/SCS would result in the disturbance or destruction of active nest sites or the unauthorized take of birds or nongame mammals. Nevertheless, if development activities directly (e.g., cutting of trees or other vegetation, or removal of man-made structures containing an active bird nest or denning wildlife) or indirectly (e.g., if activities sufficiently harassed birds to cause nest abandonment) affect nesting birds and nongame mammals, a violation of the Fish and Game Code would result.

Larger predatory mammals known to occur in the Kings region do not travel in large groups requiring large swaths of land;<sup>2</sup> thus, the reduction in capacity of migratory corridors would be less than significant. Conversely, game species such as mule deer, would be confined to narrower movement channels, which could lead to a reduction in capacity and could present a more opportunistic situation for predators (i.e., may increase predation rates). If prey species are dispersing through a more confined corridor, this may provide a bottleneck of which a predator can take advantage, although there is no clear evidence that predation rates universally increase in a negative way due to corridors, and the relationship between predation and corridors is complex (Conservation Corridor 2022).

Development of wider roadways and associated infill development may also result in wildlife attempting to cross roadways at inopportune areas, (i.e., areas that are significantly narrower and confined by steeper hillsides or other barriers). This potential shift may lead to an increase in road mortality. Thus, impacts to wildlife movement based on existing and post-project opportunities would be considered significant without incorporation of mitigation.

Direct impacts to wildlife include increased noise and human presence during construction, as well as increased trash which may attract predators to the project site and discourage wildlife use of surrounding natural habitat. These edge effects of development in and adjacent to open space have the potential to adversely affect wide ranging predators, such as mountain lions. Indirect impacts include invasion of natural habitats by non-native species and increased presence of humans and domestic animals over the long-term. In addition, transportation improvement projects could include new segments of fencing or walls that that could hinder wildlife movement.

The future land use scenario envisioned by the proposed 2022 RTP/SCS would encourage infill within existing urbanized areas. Most of the future infill projects would likely be in areas that provide limited or no wildlife movement, although some development would occur in more undisturbed outlying areas. However, even the elimination of limited wildlife movement opportunities could further isolate areas of native habitat occupied by both sensitive and common native wildlife species.

Based on the above analysis, impacts on wildlife movement related to transportation projects as identified in Table 4.4-2 and impacts related to the future land use scenario envisioned by the proposed 2022 RTP/SCS would be potentially significant.

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<sup>2</sup> This discussion is related to the carrying capacity of a movement corridor and not the home range requirement of a given large predatory mammal.

## Mitigation Measures

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measure for applicable transportation projects that would impact wildlife movement, including fish migration, and/or impede the use of native wildlife nursery. Kings County and incorporated cities in the KCAG region can and should implement these measures, where relevant to land use projects implementing the 2022 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

### *BIO-3(a) Project Design for Wildlife Connectivity*

All projects including long segments of fencing and lighting shall be designed to minimize impacts to wildlife. Fencing or other project components shall not block wildlife movement through riparian or other natural habitat. Where fencing or other project components that may disrupt wildlife movement is required for public safety concerns, they shall be designed to permit wildlife movement by incorporating design features such as:

- A minimum 16 inches between the ground and the bottom of the fence to provide clearance for small animals;
- A minimum 12 inches between the top two wires, or top the fence with a wooden rail, mesh, or chain link instead of wire to prevent animals from becoming entangled; and
- If privacy fencing is required near open space areas, openings at the bottom of the fence measure at least 16 inches in diameter shall be installed at reasonable intervals to allow wildlife movement, or the fence may be installed with the bottom at least 16 inches above the ground level.
- If fencing or other project components must be designed in such a manner that wildlife passage would not be permitted, wildlife crossing structures shall be incorporated into the project design as appropriate.
- Lighting installed as part of any project shall be designed to be minimally disruptive to wildlife (see mitigation measure AES-3(a) Roadway Lighting for lighting requirements)

### *BIO-3(b) Maintain Connectivity in Drainages*

No permanent structures shall be placed within any drainage or river that would impede wildlife movement (i.e., no hardened caps or other structures in the stream channel perpendicular to stream flow be left exposed or at depth with moderate to high risk for exposure as a result of natural bed scour during high flow events and thereby potentially create impediments to passage).

In addition, upon completion of construction within any drainage, areas of stream channel and banks that are temporarily impacted shall be returned to pre-construction contours and in a condition that allows for unimpeded passage through the area once the work has been complete.

If water is to be diverted around work sites, a diversion plan shall be submitted to KCAG and/or local jurisdiction for review and approval prior to issuance of project construction permits/approvals. The diversion shall be designed in a way as to not impede movement while the diversion is in place.



*BIO-3(c) Construction Best Management Practices to Minimize Disruption to Wildlife*

The following construction BMPs shall be incorporated into all grading and construction plans in order to minimize temporary disruption of wildlife, which could hinder wildlife movement:

- Designation of a 20 mile per hour speed limit in all construction areas.
- Daily construction work schedules shall be limited to daylight hours only.
- Mufflers shall be used on all construction equipment and vehicles shall be in good operating condition.
- All trash shall be placed in sealed containers and shall be removed from the project site a minimum of once per week.
- No pets are permitted on project site during construction.

**IMPLEMENTING AGENCIES AND TIMING**

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

**Significance After Mitigation**

Compliance with the above mitigation measures would reduce impacts to wildlife movement by requiring projects to be designed in a way that maintains connectivity. However, it cannot be guaranteed that movement of terrestrial species will not be impeded at the regional scale due to the large scale of the 2022 RTP/SCS. Further, KCAG does not have the authority to require other implementing agencies (e.g., Caltrans, counties, cities, transit agencies, etc.) that are responsible agencies for this 2022 RTP/SCS EIR, but that will be the lead agency for future transportation and land use development projects to implement these mitigation measures. No additional feasible mitigation measures are available to reduce impacts on wildlife movement. Thus, this impact would remain significant and unavoidable.

**Threshold 5:** Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance

**Impact BIO-4 IMPLEMENTATION OF TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE 2022 RTP/SCS WOULD NOT CONFLICT WITH ANY LOCAL POLICIES AND ORDINANCES PROTECTING BIOLOGICAL RESOURCES, SUCH AS A TREE PROTECTION POLICY. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.**

Most municipalities in the KCAG region have local ordinances and policies in place that protect native habitat and/or native and nonnative trees in urban landscapes, as well as in unincorporated County lands. These ordinances and policies vary in their definitions of protected trees (e.g., certain species, percent within the public right-of-way, aesthetically suitable, deep-rooted trees, or a combination thereof) and in the requirements for ordinance or policy compliance. In addition, counties and cities may have local ordinances or policies that are intended to protect other biological resources such as wetlands and drainages, riparian habitat, and other sensitive habitat areas.

Protected trees and other biological resources which are protected by city and/or County ordinances and/or policies are expected to be encountered at the locations where projects administered under the 2022 RTP/SCS would occur and therefore there is potential for conflict with local ordinances and/or policies. Most of the transportation projects in the 2022 RTP/SCS are expansions or maintenance of existing roads or facilities. Because ground disturbances would be fairly limited as a result, the potential removal of native trees and disturbances to other biological resources protected by local policies or ordinances are expected to be minimal for most projects, although the potential for conflicts with local policies and/or ordinances to some degree remains.

In addition to potential conflicts with local policies and/or ordinances that may result from transportation projects, the proposed 2022 RTP/SCS also contains a future land use scenario that emphasizes infill development. This land use scenario focuses future development concentrated in existing urbanized areas, although some development would occur in more undisturbed outlying areas. This would reduce impacts to biological resources that are protected by city or county ordinances; however, there remains the potential for conflict with local policies and ordinances from development associated with the future land use scenario.

All future development projects as part of the future land use scenario as well as the transportation projects proposed for implementation under the 2022 RTP/SCS would be required to follow city and County development requirements, including compliance with local policies, ordinances and applicable permitting procedures related to protection biological resources. Project-level analysis would identify significant conflicts with local policies and ordinances as well as minimize, mitigate, or avoid those impacts through the design, siting and permitting process; and provide mitigation for any significant impacts as a condition of project approval and permitting. Therefore, the potential for development projects under the future land use scenario as well as proposed transportation projects to conflict with local policies or ordinances protecting biological resources is considered a less than significant impact.

### **Mitigation Measures**

Mitigation measures are not required.

**Threshold 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

**Impact BIO-5 IMPLEMENTATION OF TRANSPORTATION PROJECTS AND THE LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD NOT CONFLICT WITH THE PROVISIONS OF AN ADOPTED HABITAT CONSERVATION PLAN, NATURAL COMMUNITY CONSERVATION PLAN, OR OTHER APPROVED LOCAL, REGIONAL, OR STATE HABITAT CONSERVATION PLAN. THERE WOULD BE NO IMPACT.**

There are no adopted regional Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans within the KCAG region at the time of Draft PEIR preparation and therefore no conflict with the 2022 RTP/SCS would occur. Therefore, no conflicts would occur as they relate to conflicts with existing adopted or approved local, regional, or state conservation plans.

### **Mitigation Measures**

Mitigation measures are not required.

### c. Specific RTP Projects that May Result in Impacts

Table 4.4-2 identifies representative projects that may create biological resource impacts. Projects that may have potential impacts are illustrated on Figure 2-3 through Figure 2-7 in Chapter 2, *Project Description*. The individual projects listed below could create significant biological impacts but would not necessarily do so. Additional specific analysis will need to be conducted as the individual projects are implemented to determine the actual magnitude of impact. Mitigation measures discussed above could apply to these specific projects.

**Table 4.4-2 2022 RTP/SCS Projects with Potential to Impact Biological Resources**

Jurisdiction	Location	Project Description	Potential Impact
Avenal	San Joaquin St to SR 269	Reconstruct and improve curb/ramps	BIO-1, BIO-2, BIO-4
Avenal	San Joaquin St to SR 269	Reconstruct and improve curb/ramps	BIO-1, BIO-2, BIO-4
Avenal	San Joaquin St to 2nd Ave	Reconstruct and improve curb/ramps	BIO-1, BIO-2, BIO-4
Avenal	San Joaquin St to 2nd Ave	Reconstruct and improve curb/ramps	BIO-1, BIO-2, BIO-4
Avenal Active Transportation	Big Tar Canyon Road	Paved multi-use path	BIO-1, BIO-2, BIO-3, BIO-4
Avenal Active Transportation	San Joaquin Street	Separated bikeway (Class IV)	BIO-1, BIO-2, BIO-3, BIO-4
Avenal Active Transportation	Hydril Road	Paved multi-use path	BIO-1, BIO-2, BIO-3, BIO-4
Corcoran ATP	Hydril Road	Paved multi-use path	BIO-1, BIO-2, BIO-3, BIO-4
Hanford Pedestrian Project	Centennial Drive	Hanford Pedestrian Project to Centennial Drive	BIO-1, BIO-2, BIO-3, BIO-4
Hanford Pedestrian Project	12th Avenue	Hanford Pedestrian Project to 12th Avenue	BIO-1, BIO-2, BIO-3, BIO-4
Hanford Pedestrian Project	Phillips Street	Hanford Pedestrian Project to Phillips Street	BIO-1, BIO-2, BIO-3, BIO-4
Hanford Pedestrian Project	Irwin Street	Hanford Pedestrian Project to Irwin Street	BIO-1, BIO-2, BIO-3, BIO-4
Hanford Pedestrian Project	Douty Street	Hanford Pedestrian Project to Douty Street	BIO-1, BIO-2, BIO-3, BIO-4
Hanford Pedestrian Project	10th Avenue	Hanford Pedestrian Project to 10th Avenue	BIO-1, BIO-2, BIO-3, BIO-4
Hanford Pedestrian Project	9 ¼ Avenue	Hanford Pedestrian Project to 9 ¼ Avenue	BIO-1, BIO-2, BIO-3, BIO-4
Hanford Pedestrian Project	Fargo Avenue	Hanford Pedestrian Project to Fargo Avenue	BIO-1, BIO-2, BIO-3, BIO-4
Hanford Pedestrian Project	Leland Way	Hanford Pedestrian Project to Leland Way	BIO-1, BIO-2, BIO-3, BIO-4
Hanford Pedestrian Project	Grangeville Boulevard	Hanford Pedestrian Project to Grangeville Boulevard	BIO-1, BIO-2, BIO-3, BIO-4
Hanford Pedestrian Project	Greenfield Avenue	Hanford Pedestrian Project to Greenfield Avenue	BIO-1, BIO-2, BIO-3, BIO-4
Hanford Pedestrian Project	Elm Street	Hanford Pedestrian Project to Elm Street	BIO-1, BIO-2, BIO-3, BIO-4

Kings County Association of Governments  
**2022 Regional Transportation Plan/Sustainable Communities Strategy**

<b>Jurisdiction</b>	<b>Location</b>	<b>Project Description</b>	<b>Potential Impact</b>
Hanford Pedestrian Project	West Lacey Boulevard	Hanford Pedestrian Project to West Lacey Boulevard	BIO-1, BIO-2, BIO-3, BIO-4
Hanford Pedestrian Project	East Lacey Boulevard	Hanford Pedestrian Project to East Lacey Boulevard	BIO-1, BIO-2, BIO-3, BIO-4
Hanford Pedestrian Project	Second Street	Hanford Pedestrian Project to Second Street	BIO-1, BIO-2, BIO-3, BIO-4
Hanford Pedestrian Project	Hanford–Armona Road	Hanford Pedestrian Project to Hanford–Armona Road	BIO-1, BIO-2, BIO-3, BIO-4
Hanford	11th Ave	Widen from 2 to 4 lanes w/ left turn pockets	BIO-1, BIO-2, BIO-3, BIO-4
Hanford	12th Ave	Widen from 2 to 4 lanes w/ median	BIO-1, BIO-2, BIO-3, BIO-4
Hanford	11th Ave	Widen from 2 to 4 lanes w/ left turn pockets	BIO-1, BIO-2, BIO-3, BIO-4
Hanford	12th Ave	Widen from 2 to 4 lanes w/ median	BIO-1, BIO-2, BIO-3, BIO-4
Hanford	9th Ave	New arterial roadway – 4 lanes w/ median	BIO-1, BIO-2, BIO-3, BIO-4
Hanford	9th Ave	New arterial roadway – 4 lanes w/ median	BIO-1, BIO-2, BIO-3, BIO-4
Hanford	E Lacey Blvd	Widen from 2 to 4 lanes w/ left turn pockets	BIO-1, BIO-2, BIO-3, BIO-4
Hanford	E Lacey Blvd	Widen from 2 to 4 lanes w/ left turn pockets	BIO-1, BIO-2, BIO-3, BIO-4
Hanford	Fargo Ave	Widen from 2 to 4 lanes w/ left turn pockets	BIO-1, BIO-2, BIO-3, BIO-4
Hanford	Fargo Ave	Widen from 2 to 4 lanes w/ left turn pockets	BIO-1, BIO-2, BIO-3, BIO-4
Hanford	Grangeville Blvd	Widen from 2 to 4 lanes w/ left turn pockets	BIO-1, BIO-2, BIO-3, BIO-4
Hanford	Grangeville Blvd	Widen from 2 to 4 lanes w/ median	BIO-1, BIO-2, BIO-3, BIO-4
Hanford	Hanford Armona Rd	Widen from 2 to 4 lanes w/ left turn pockets	BIO-1, BIO-2, BIO-3, BIO-4
Hanford	Houston Ave	Widen from 2 to 4 lanes w/ median	BIO-1, BIO-2, BIO-3, BIO-4
Hanford	Houston Ave	Widen from 2 to 4 lanes w/ median	BIO-1, BIO-2, BIO-3, BIO-4
Hanford	W Lacey Blvd	Widen from 2 to 4 lanes w/ median	BIO-1, BIO-2, BIO-3, BIO-4
County of Kings	Grangeville Blvd	Reconstruct	BIO-1, BIO-2
County of Kings	Grangeville Blvd	Reconstruct	BIO-1, BIO-2
County of Kings	Excelsior Ave	Reconstruct 1 mile	BIO-1, BIO-2
Kings Area Rural Transit Capital Project	No location	Construction Regional Multimodal Transit Center	BIO-1, BIO-2, BIO-3, BIO-4
Kings Area Rural Transit Capital Project	No location	Construction Park N Ride Lot	BIO-1, BIO-2, BIO-3, BIO-4
Kings Area Rural Transit Capital Project	No location	Construct Zero-Emission Bus Fueling Station	BIO-1, BIO-2, BIO-3, BIO-4

Jurisdiction	Location	Project Description	Potential Impact
Armona	14 <sup>th</sup> Avenue and Front Street	Sidewalks along 14th Avenue and Front Street	BIO-1, BIO-2, BIO-3, BIO-4
Armona	Ambrose/C Streets or at Railroad Avenue/D Street	Pedestrian crossings across the railroad ROW at Ambrose/C Streets or at Railroad Avenue/D Street	BIO-1, BIO-2, BIO-4
Armona	14 <sup>th</sup> Avenue and Front Street	Footpaths in new developments east of 14th Avenue and north of Front Street	BIO-1, BIO-2, BIO-3, BIO-4
Armona	Armona North subdivision onto Front Street	Cut throughs from cul-de-sacs in the Armona North subdivision onto Front Street	BIO-1, BIO-2, BIO-4
Armona	Front Street to west Hanford	Multi-use path from Front Street to west Hanford	BIO-1, BIO-2, BIO-3, BIO-4
Home Garden	No location	Sidewalks and crosswalks along the major roads	BIO-1, BIO-2, BIO-3, BIO-4
Home Garden	No location	Multi-use paths in new developments in the Northwest Growth Area	BIO-1, BIO-2, BIO-3, BIO-4
Kettleman City	No location	Sidewalks along the major roads in the residential area	BIO-1, BIO-2, BIO-3, BIO-4
Kettleman City	Ninth St	Multi-use path south of Ninth Street between the residential and highway commercial areas	BIO-1, BIO-2, BIO-3, BIO-4
Stratford	No location	Sidewalks along the major roads	BIO-1, BIO-2, BIO-3, BIO-4
Stratford	20 ½ Avenue south of 6 <sup>th</sup> Street	Multi-use path along 20 ½ Avenue south of 6th Street	BIO-1, BIO-2, BIO-3, BIO-4

#### 4.4.4 Cumulative Impacts

The cumulative impact analysis area for biological resources consists of the KCAG region and adjoining counties. Information regarding these adjoining counties can be found in Section 3.3.3.1 *Cumulative Impact Methodology*. This geographic scope is appropriate for biological resources because it encompasses the mosaic of representative land cover and habitat types (and associated biological resources) affected by the proposed 2022 RTP/SCS, including creeks and drainages, natural communities, and agricultural land uses. Future transportation projects and growth in the region, including growth in adjoining counties, could impact resources in the surrounding counties, and the interaction between the affected environment and the proposed 2022 RTP/SCS projects would occur throughout this larger cumulative impact analysis area.

Biological resources impacts resulting from cumulative development within the cumulative impact analysis area would include direct and indirect impacts to sensitive/special status species or their habitat; impacts to riparian, wetland, or other sensitive natural communities; interference with wildlife movement; or potential conflicts with local policies, ordinances. Given the extent of future development anticipated in the cumulative impact analysis area, these cumulative impacts would likely be significant. Implementation of the transportation projects and land use development patterns under the proposed 2022 RTP/SCS would contribute to these impacts, as described above in Section 4.4.3. Due to the potential direct and indirect impacts that may occur as a result of the

proposed 2022 RTP/SCS, the proposed 2022 RTP/SCS's contribution to this impact would be cumulatively considerable.

Mitigation Measures BIO-1(a) through BIO-3(c) presented above in Section 4.4.3(b) set requirements for surveys and actions to be taken if biological resources have potential to be impacted by 2022 RTP/SCS projects as well as the future land use scenario. If implementing agencies and/or project sponsors adopt these mitigation measures and comply with existing State, local and/or federal regulations, the contribution of the proposed 2022 RTP/SCS to cumulative impacts would be reduced. However, as discussed above, impacts to special-status species, sensitive habitats including riparian areas and/or protected waters and wetlands, and wildlife movement would be significant and unavoidable. The contribution of the proposed 2022 RTP/SCS to cumulative impacts would therefore remain cumulatively considerable post-mitigation.

## 4.5 Cultural Resources

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This section analyzes impacts to cultural resources within the KCAG region that would result from implementation of the proposed 2022 RTP/SCS and recommends feasible mitigation measures to reduce the severity of these potential impacts. Tribal cultural resources are addressed in Section 4.14, *Tribal Cultural Resources*.

### 4.5.1 Setting

The following cultural background discussion is broken down into pre- and post-European contact histories. The cultural activities discussed occurred in and around construction projects outlined in the 2022 RTP/SCS.

#### a. Prehistoric Background

California prehistory is generally divided into three broad time periods: Paleoindian period (ca. 11,550-8550 BCE), Archaic Period (8550 BCE-CE. 1100) and Emergent Occupation (CE 1000-European Contact) (Fredrickson 1973a, 1973b; Moratto 1984; Rosenthal et al. 2007). Little archaeological work has been completed around Tulare Lake, but the research that has been conducted has shown that humans have inhabited the Tulare lakeshore continuously since as early as 9000 BCE (Preston 1990). The prehistoric chronological sequence for the Central Valley presented below is based on Rosenthal et al. (2007) and Moratto (1984).

##### *Paleoindian Period (11,550-8550 BCE)*

Currently, the earliest accepted date of human occupation in the Central Valley ranges from 11,550 to 8550 BCE (Paleoindian Period) and comes from fluted projectile points similar to Clovis points found at sites near Tracy Lake and the Tulare Lake Basin (Rosenthal et al. 2007). The Witt Site (P-16-000032), located along the shoreline of a Late Pleistocene lowstand of Tulare Lake, and the surrounding area reportedly contained upwards of 200 Terminal Pleistocene-style concave base points (Moratto 1984: 81; Rosenthal et al. 2007: 151).

##### *Archaic Period (8,550 BCE-CE 1100)*

Climate change at the end of the Pleistocene caused significant periods of alluvial deposition beginning around 9050 BCE. The Lower Archaic (8550-5550 BCE), like the Paleoindian Period, is represented only by limited isolated finds. Only one Lower Archaic site (KER-116 in Kern County) in the Central Valley proper has been radiocarbon dated and few in the foothills surrounding the valley, though numerous Lower Archaic artifacts have been found on the shores of Tulare Lake (Rosenthal et al. 2007).

Typical Lower Archaic artifacts include flaked stone crescents and stemmed points. The identification of projectile points and a diverse faunal assemblage at KER-116 point to hunting being an important subsistence activity. Milling tools and plant remains are largely absent in the valley, thus plant use or acquisition of plant material in this area during the Lower Archaic remains unclear. Several foothill sites contain milling implements and evidence of the use of nut crops such as acorn and pine (Wohlgemuth 1996).

The Middle Archaic (5550-550 BCE) began with substantial climate change to much warmer, drier conditions. Tulare Lake shrank and eventually disappeared sometime around 5500 BCE (Blunt and

Negrini 2015) and fans and floodplains stabilized after an initial period of deposition in 5550 BCE. Archaeological deposits dating to the Middle Archaic are rare in the Central Valley proper due to these geomorphic changes. Data collected from the Middle Archaic record has revealed a pattern of organized subsistence strategies and increased residential stability. The archetypal pattern of the Middle Archaic has been identified as the Windmill Pattern. This pattern is represented by extended burials oriented to the west and a sophisticated material culture (Rosenthal et al. 2007). Middle Archaic sites are relatively common in the foothills surrounding the Central Valley and show relatively little change from the Lower Archaic (McGuire 1997).

During this time, the mortar and pestle become more widespread suggesting a shift toward more intensive subsistence practices. Fishing technologies, such as bone gorges, hooks, and spears, also appear during the Middle Archaic suggesting a new focus on fishing. Several other technologies also become apparent during this time. Baked-clay impressions of twined basketry, simple pottery, and other baked clay objects have been found at several sites. Personal adornment items additionally became more frequent. Exchange with outside groups is evidenced by the presence of obsidian, shell beads and ornaments (Rosenthal et al. 2007; Moratto 1984). Trade seemed to be focused on utilitarian items such as obsidian or finished obsidian tools from at least five separate sources (Moratto 1984).

The Upper Archaic (550 BCE-CE 1100) began with the onset of the Late Holocene, marked by a cooler, wetter climate. The environmental conditions of the Upper Archaic were characterized by the return of lakes that had disappeared during the Middle Archaic, including Tulare Lake around CE 1000, and a renewed fan and floodplain deposition (Blunt and Negrini 2015). The Upper Archaic is better represented in the archaeological record than earlier periods and is marked by contrasting material cultures throughout the valley (Rosenthal et al. 2007).

During this period, numerous specialized technologies were developed such as bone tools, and implements, manufactured goods such as *Olivella* and *Haliotis* beads and ornaments, well-made ceremonial blades, and ground-stone plummets. People living in the San Joaquin Valley region traded with neighboring groups for obsidian.

Upper Archaic period economies varied by region throughout the Central Valley. Economies were apparently primarily focused on seasonal resources such as acorns, salmon, shellfish, rabbits, and deer (Rosenthal et al. 2007).

#### *Emergent Occupation (CE 1100- Historic)*

The stable climatic conditions of the Upper Archaic continued into the Emergent Period (CE 1100- Historic Period). Research in the San Joaquin Valley has been sporadic and limited on this time period, and thus only the Pacheco Complex on the western edge of the valley has been formally defined. After CE 1000, many of the technologies witnessed during the Archaic disappeared to be replaced by cultural traditions witnessed at European contact. During the Emergent Period, the bow and arrow replaced the atlatl as the preferred hunting method sometime between CE 1000 and 1300.

Increased social complexity is evidenced by increased variation in burial types and offerings and larger residential communities. Grave offerings such as shell beads, ornaments, and ritually “killed” mortars and pestles are often found in burials. Pottery was frequently obtained through trade with groups living in the foothills to the east. The Panoche side-notched point became important in the western side of the San Joaquin Valley (Rosenthal et al. 2007). In addition to the side-notched point,



the Panoche Complex featured large circular structures, flexed burials, marine shell beads, bone awls, millstones, and mortars and pestles (Moratto 1984).

As with the Archaic Period, Emergent Period economies varied geographically, though throughout the Central Valley fishing and plant harvesting increased in importance. Most Emergent residential sites contain diverse assemblages of mammal and bird remains and large amounts of fish bone. After 1,000 years ago, the mortar and pestle become the dominant tool type and small seeds increase in archaeological deposits over time (Rosenthal et al. 2007).

## **b. Historic Period**

Post-Contact history for the state of California is generally divided into three periods: the Spanish Period (1769 – 1822), Mexican Period (1822 – 1848), and American Period (1848 – present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins in 1769 with the establishment of a settlement at San Diego and the founding of Mission San Diego de Alcalá. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican American War, signals the beginning of the American Period when California became a territory of the United States.

### *Spanish Period (1769–1822)*

In 1542, Juan Rodriguez Cabrillo led the first European expedition to observe what is now called southern California. For more than 200 years, Cabrillo and other Spanish, Portuguese, British, and Russian explorers sailed the Alta (upper) California coast and made limited inland expeditions but did not establish permanent settlements (Bean 1968; Rolle 2003).

Gaspar de Portolá and Franciscan Father Junipero Serra established the first Spanish settlement in Alta California at Mission San Diego de Alcalá in 1769. This was the first of 21 missions erected by the Spanish between 1769 and 1823. Portolá continued north, eventually reaching the San Francisco Bay in 1769. In 1772, Pedro Fages led the first Europeans to enter the San Joaquin Valley and encountered Lake Tulare that same year (Wallace 1978; Hoover et al. 2002). The next European to enter the valley was Francisco Garcés in 1776 (Wallace 1978). In the early 1800s, numerous expeditions were made into the Central Valley to search for land for new missions or to recapture runaway neophytes (Hoover et al. 2002). However, the Spanish never succeeded in taking control of the region and no missions were established in the Central Valley region, including the present-day the KCAG region.

During this period, Spain also deeded ranchos to prominent citizens and soldiers, though very few in comparison to the subsequent Mexican Period. To manage and expand their herds of cattle on these large ranchos, colonists enlisted the labor of the surrounding Native American population (Engelhardt 1927). The Spanish presence in the Central Valley remained limited, and very few of the region's tribes came under the control of the Spanish missions or ranchos. However, numerous runaway neophytes fled to the Central Valley, influencing local populations (Wallace 1978). The increased local population and contact with diseases brought by Europeans greatly reduced the Native American population (McCawley 1996).

### *Mexican Period (1822–1848)*

The Mexican Period commenced when news of the success of the Mexican Revolution (1810-1821) against the Spanish crown reached California in 1822. This period was an era of extensive interior

land grant development and exploration by American fur trappers west of the Sierra Nevada Mountains. Beginning in 1833, mission lands were conferred as rancho grants. Governor Pío Pico and his predecessors made more than 600 rancho grants between 1833 and 1846, putting most of the state's lands into private ownership for the first time (Gumprecht 1999). However, no ranchos were established in the San Joaquin Valley (Wallace 1978).

#### *American Period (1848–Present)*

The American Period officially began with the signing of the Treaty of Guadalupe Hidalgo in 1848, in which the United States agreed to pay Mexico \$15 million for the conquered territory, including California, Nevada, Utah, and parts of Colorado, Arizona, New Mexico, and Wyoming. Settlement of southern California continued dramatically in the early American Period. The discovery of gold in northern California in 1848 led to the California Gold Rush (Guinn 1915; Workman 1935). In 1850, California was admitted into the United States and by 1853, the population of California exceeded 300,000. Thousands of settlers and immigrants continued to move into the state, particularly after the completion of the transcontinental railroad in 1869.

The Mediterranean climate of San Joaquin Valley attracted many settlers to the area and established the valley as a key producer of several varieties of crops. Today, the region is a leading producer of raisins and yields more than half of the grapes grown in the United States. Key themes in the areas' history include mining, agriculture, transportation, and military use.

### **c. KCAG Region History and Historic Period Development**

Permanent American settlement of what now comprises Kings County and, by extension, the KCAG region, began in the 1850s as emigrants established the area's first farms. Kingston, centered on a ferry site on the Kings River, was the first permanent white community in the KCAG region. After a bridge was erected at the site of the ferry, however; Kingston began to decline, and the community was completely abandoned by 1890. Among the KCAG region's oldest communities, Lemoore was surveyed by Dr. Lovern Lee Moore in 1872. The arrival of the Southern Pacific Railroad in 1877 boosted the town's prospects allowing it to flourish as a regional commercial center. Hanford was founded the same year the railroad arrived. Named for Southern Pacific paymaster James Madison Hanford, the community was incorporated in 1891. When Kings County formed from the western portion of Tulare County. In 1893, Hanford was designated the seat of Kings County. Through the second half of the nineteenth century, the KCAG region's economy centered on ranching and other agriculture, with vineyards and dairy farms proving particularly important to the region's economy. Cotton, fruit, and nuts later became important crops (ereferencedesk.com 2021).

Continued settlement in the early twentieth century resulted in the establishment of the communities of Corcoran (1905) and Avenal (1929). As was the case throughout California, the KCAG region's population rose steadily in the years after World War II. It more than doubled from about 35,100 in 1940 to 73,700 in 1980. Major employers in the region include Lemoore Naval Air Station and three California State Correctional facilities, two of which are located in Corcoran and one in Avenal (ereferencedesk.com 2021). Currently, there are 152,000 residents of KCAG region.

### **d. Known and Potential Historical Resources**

Under the California Environmental Quality Act (CEQA), a historical resource is a building, site, structure, object, or district that is eligible for listing or is listed in the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), or a local register due to its historical or archaeological significance. Archaeological historical resource and/or unique

archaeological resource types present, or expected to exist, within the KCAG region include prehistoric period occupation areas (both short and long term), burial areas, ceremonial areas, resource collection and processing sites, lithic scatters, quarries, rock art sites, trails, and isolated examples of prehistoric period artifacts.

For the historic period, historical resources may include buildings and structures, in addition to trails, roads, railroads, small and large-scale mining features, logging features, occupation areas (short and long term), water conveyance features, quarries, trash dumps, and cemeteries.

In general, prehistoric-period cultural resources were situated in the most favored environmental settings—areas adjacent to permanent water sources with relatively level topography. For example, numerous archaeological sites are known to exist near the shore of the former Tulare Lake. This is also true of most historic-period built-environment historical resources, with the exception of mining related features and settlements where the discovery of a mineral deposit did not always correspond with a favored environmental setting. It is important to note that lower sensitivity areas could still contain historical resources, and all areas proposed for development should be studied to determine whether potential historical resources are present.

A review of the NRHP and the California Office of Historic Preservation (OHP) web site identified 3 California Historical Landmarks and 4 NHRP- and CRHR-listed properties located in the KCAG region. There may be other known and potential historical resources located in the KCAG region. Resources identified on the OHP web site are listed in Table 4.5-1. A review of the OHP Built Environment Resource Directory identified 68 known and potential historical resources that have been listed in, determined eligible for, or recommended eligible for listing in the NRHP, CRHR, or a local register and therefore are or may be historical resources under CEQA. The Caltrans Historic Bridge Inventory does not identify any bridges under state or local jurisdiction that are eligible for listing in the NRHP; however, this inventory only addresses NRHP eligibility and not CRHR or local historic register eligibility (Caltrans 2021a; 2021b).

**Table 4.5-1 California Historical Landmarks & Historical Resources in the KCAG region**

Reference Number	Location	Resource Name	Address and/or Date Listed
<b>California Historical Landmarks*</b>			
220	Lemoore	El Adobe de los Robles Rancho	10036 19-1/2 Avenue; registered June 20, 1935
270	Laton	Kingston	Kingston Park; registered September 3, 1937
245	Hardwick	Location of the Famous Mussel Slough Tragedy	5833-14th Avenue; registered September 28, 1936
<b>National Register of Historic Places</b>			
N77	Kettleman City	Witt Site	Address restricted; listed May 6, 1971
N173	Hanford	Taoist Temple	12 China Alley; listed June 13, 1972
N674	Hanford	Kings County Courthouse	114 W. 8th Street; listed September 21, 1978
N977	Hanford	Hanford Carnegie Library	109 E. Eighth Street

Sources: California Office of Historic Preservation, 2021; NRHP 2021

Note: This list may not include all historical resources listed on the NRHP and CRHR.

\* California Historical Landmarks 1-769 need to be reevaluated using current standards.

## 4.5.2 Regulatory Setting

### a. Federal Laws, Regulations, and Policies

#### *National Register of Historic Places*

The NRHP was established by the National Historic Preservation Act of 1966 as “an authoritative guide to be used by Federal, state, and local governments, private groups and citizens to identify the Nation’s cultural resources and to indicate what properties should be considered for protection from destruction or impairment” (36 Code of Federal Regulations 60.2). The NRHP recognizes properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, and association. A property is eligible for the NRHP if it meets any one of the following criteria:

- Criterion A:** Are associated with events that have made a significant contribution to the broad patterns of our history
- Criterion B:** Are associated with the lives of persons significant in our past
- Criterion C:** Embody the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction
- Criterion D:** Have yielded, or may be likely to yield, information important in prehistory or history

In addition to meeting at least one of the above designation criteria, resources must also retain integrity. The National Park Service recognizes seven aspects or qualities that, considered together, define historic integrity. To retain integrity, a property must possess several, if not all, of these seven qualities, defined in the following manner:

- Location:** The place where the historic property was constructed or the place where the historic event occurred
- Design:** The combination of elements that create the form, plan, space, structure, and style of a property
- Setting:** The physical environment of a historic property
- Materials:** Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property
- Workmanship:** The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory
- Feeling:** A property’s expression of the aesthetic or historic sense of a particular period of time
- Association:** The direct link between an important historic event or person and a historic property

### *The Department of Transportation Act*

Passed in 1966, the Department of Transportation Act (49 United States Code 303, formerly 49 United States Code 1651(b)(2) and 49 United States Code 1653f) includes Section 4(f), which states that the Federal Highway Administration and other U.S. Department of Transportation agencies cannot approve the use of land from public and private historical sites unless certain conditions apply. These conditions are the following: If there is no feasible and prudent avoidance alternative to the use of land, and if the action includes all possible planning to minimize harm to the property resulting from such use; or if the Federal Highway Administration determines the use of the property will have a *de minimis* impact.

### *Archaeological Resources Protection Act of 1979 (ARPA)*

This regulation was enacted to protect archaeological resources and sites that are on public lands and Tribal lands, to foster increased cooperation and exchange of information between government representatives, the professional archaeological community, and private individuals. Section 4 of the statute and Sections 16.5-16.12 of the uniform regulations describe the requirements that must be met before federal authorities can issue a permit to excavate or remove any archaeological resource on federal or Tribal lands. The curation requirements of artifacts, other materials excavated or removed, and the records related to the artifacts and materials are described in Section 5 of the ARPA. This section also authorizes the Secretary of the Interior to issue regulations describing in more detail the requirements regarding these collections.

### *Protection of Archaeological Resources – 43 CFR Part 7*

The Archeological Resources Protection Act of 1979 (ARPA) (43 CFR Section 7) establishes uniform definitions, standards, and procedures to be followed by all federal land managers in providing protection for archaeological resources located on public lands and Native American lands. Under ARPA, additional requirements could apply to agency action if federal or Indian lands are involved. ARPA (1) prohibits unauthorized excavation on federal and Indian lands, (2) establishes standards for permissible excavation, (3) prescribes civil and criminal penalties, (4) requires agencies to identify archeological sites, and (5) encourages cooperation between federal agencies and private individuals.

## **b. State Laws, Regulations, and Policies**

### *California Register of Historical Resources*

The CRHR program was designed for use by state and local agencies, private groups, and citizens to identify, evaluate, register, and protect California's historical resources. A historical resource can include any object, building, structure, site, area, or place that is determined to be historically or archaeologically significant. The CRHR is an authoritative guide to the state's significant archaeological and historic architectural resources. The list of these resources can be used for state and local planning purposes, the eligibility determinations can be used for state historic preservation grant funding and listing in the CRHR provides a certain measure of protection under CEQA.

### *California Historical Landmarks Program*

The Historical Landmarks Program was instated to register buildings or landmarks of historical interest. Historical Landmarks are defined as sites, buildings, or features that have a statewide

historical, cultural, anthropological, or other significance. To be designated as a Historical Landmark by the Director of California State Parks, the resource must meet set criteria, be recommended for designation by the State Historical Resources Commission and be approved by the property owners. The goals of the program include the preservation and maintenance of registered landmarks, most of which include missions, early settlements, battles, and gold rush sites (PRC Sections 5020.4, 5021, 5022, 5022.5, 5031 and 5032).

### *California Environmental Quality Act*

#### **ARCHAEOLOGICAL RESOURCES**

CEQA requires lead agencies to consider whether projects would affect unique archaeological resources. PRC Section 21083.2(g) states that “unique archaeological resource” means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions. And there is a demonstrable public interest in that information
2. Has a special and particular quality, such as being the oldest of its type or the best available example of its type
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person

#### **IMPACTS TO HISTORICAL RESOURCES**

Section 15064.5 of the *State CEQA Guidelines* states that “a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.” The *State CEQA Guidelines* (Section 15064.5(a)) define an “historical resource” as including the following:

- A resource listed in, or eligible for listing in, the CRHR
- A resource listed in a local register of historical resources (as defined at PRC Section 5020.1(k))
- A resource identified as significant in a historical resources survey meeting the requirements of PRC Section 5024.1(g)

Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. (Generally, a resource is considered by the lead agency to be “historically significant” if the resource meets the criteria for listing in the CRHR)

State CEQA Guidelines (Section 15064.5(b)[1]) define “substantial adverse change” as “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.” Generally, the significance of a historical resource is “materially impaired” when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in or eligibility for the CRHR, or its inclusion in a local register of historical resources (State CEQA Guidelines Section 15064.5(b)(2)).

## STANDARD MITIGATION MEASURES UNDER CEQA

### ***Historical Resources***

Mitigation measures for historical resources impacts are discussed in State CEQA Guidelines Section 15126.4. Generally, by following the Secretary of the Interior's Standards for the Treatment of Historic Properties or the Secretary of the Interior's Standards for Rehabilitation, impacts can be considered as mitigated to a level less than significant. For historical resources that are archaeological sites, according to the State CEQA Guidelines Section 15126.4(b)(3), public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature.

### ***Unique Archeological Resources***

A cultural resource is also significant if it is a unique *archaeological resource*, which is defined in §21083.2(g) as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person

If an archaeological resource qualifies as a "historical resource," potential adverse impacts must be considered in the same manner as a historical resource *State CEQA Guidelines* Section 15064.5(c)(2)). If the archaeological site does not qualify as a historical resource but does qualify as a unique archaeological resource, then the archaeological site is treated in accordance with PRC Section 21083.2 (State CEQA Guidelines Section 15064.5(c)(3)).

### *California Public Resources Code Section 5024 and State-Owned Lands*

Historical resources on State-owned lands are subject to the requirements of PRC Section 5024. PRC Section 5024.5(f) requires State agencies to submit to SHPO for comment documentation for any project having the potential to affect historical resources under its jurisdiction listed in or potentially eligible for inclusion in the NRHP or registered or eligible for registration as California Historical Landmarks. The SHPO has 30 days after receipt of the notice for review and comment. If the SHPO determines that a proposed action would have an adverse effect on a listed historical resource, the relevant State agency shall adopt prudent and feasible measures that will eliminate or mitigate the adverse effects.

### *California Native American Historical, Cultural, and Sacred Sites Act*

The California Native American Historical, Cultural, and Sacred Sites Act (PRC Section 5097.9) applies to both State and private lands. The act requires, upon discovery of human remains, that construction or excavation activity cease and that the county coroner be notified. If the remains are those of a Native American, the coroner must notify the NAHC, which notifies and has the authority to designate the most likely descendant (MLD) of the deceased. The act stipulates the procedures

that the descendants may follow for treating or disposing of the remains and associated grave goods.

*Health and Safety Code Section 7050.5*

Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If they are determined to be Native American, the coroner must contact the NAHC.

*Public Resources Code Section 5097*

PRC Section 5097 specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American burial falls within the jurisdiction of the NAHC. Section 5097.5 of the PRC states the following:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

*California Health and Safety Code Sections 7050.5, 7051, and 7054*

HSC Sections 7050.5, 70051, and 7051, and 7054 specify the provisions for the protection of human burial remains. Section 7050.5 of the HSC states the following:

In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

Section 7051 of the HSC states the following:

Every person who removes any part of any human remains from any place where it has been interred, or from any place where it is deposited while awaiting interment, cremation, or hydrolysis, with intent to sell it or to dissect it, without authority of law, or written permission of the person or persons having the right to control the remains under Section 7100, or with



malice or wantonness, has committed a public offense that is punishable by imprisonment pursuant to subdivision (h) of Section 1170 of the Penal Code.

Section 7054 of the HSC states the following:

- (a) (1) Except as authorized pursuant to the sections referred to in subdivision (b), every person who deposits or disposes of any human remains in any place, except in a cemetery, is guilty of a misdemeanor.
- (2) Every licensee or registrant pursuant to Chapter 12 (commencing with Section 7600) of Division 3 of the Business and Professions Code and the agents and employees of the licensee or registrant, or any unlicensed person acting in a capacity in which a license from the Cemetery and Funeral Bureau is required, who, except as authorized pursuant to the sections referred to in subdivision (b), deposits or disposes of any human remains in any place, except in a cemetery, is guilty of a misdemeanor that shall be punishable by imprisonment in a county jail not exceeding one year, by a fine not exceeding ten thousand dollars (\$10,000), or both that imprisonment and fine.
- (b) Cremated remains or hydrolyzed human remains may be disposed of pursuant to Sections 7054.6, 7116, 7117, and 103060.
- (c) Subdivision (a) of this section shall not apply to the reburial of Native American remains under an agreement developed pursuant to subdivision (l) of Section 5097.94 of the Public Resources Code, or implementation of a recommendation or agreement made pursuant to Section 5097.98 of the Public Resources Code.

*Public Resources Code Section 5097.98*

PRC Section 5097.98 addresses the disposition of Native American burials, protects such remains, and established the NAHC to resolve any related disputes. Section 5097.98 of the PRC states the following:

- (a) Whenever the commission receives notification of a discovery of Native American human remains from a county coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American. The descendants may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American human remains and may recommend to the owner or the person responsible for the excavation work means for treatment or disposition, with appropriate dignity, of the human remains and any associated grave goods. The descendants shall complete their inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site.
- (b) Upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section, with the regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.

### *Native American Graves Protection and Repatriation Act*

Health and Safety Code Sections 8010–8011 establishes a State repatriation policy intent that is consistent with and facilitates implementation of the federal Native American Graves Protection and Repatriation Act. The act strives to ensure that all California Indian human remains and that cultural and cultural items by publicly funded agencies and museums in California. It also states the intent for the State to provide mechanisms for aiding California Indian tribes, including non-federally recognized tribes, in filing repatriation claims and getting responses to those claims.

### *California Health and Safety Code Sections 18950 through 18961*

The State Historic Building Code (HSC; Sections 18950–18961) provide alternative building regulations and building standards for the rehabilitation, preservation, restoration (including related reconstruction), or relocation of buildings or structures designated as historic buildings. Such alternative building standards and building regulations are intended to facilitate the restoration or change of occupancy to preserve their original or restored architectural elements and features, to encourage energy conservation and a cost-effective approach to preservation, and to provide for the safety of the building occupants.

## **c. Local Laws, Regulations, and Policies**

### *Kings County General Plan*

The Resource Conservation Element of the Kings County 2035 General Plan, adopted January 26, 2010, establishes objectives, goals, and policies pertaining to the preservation of archaeological, cultural, and historical resources. The Kings County 2035 General Plan identifies as RC (Resource Conservation) Goal 1, the preservation of significant historical and archaeological sites and structures that represent the ethnic, cultural, and economic groups that have lived and worked in Kings County. To meet this goal, the General Plan adopts the following objectives and policies (Kings County 2009).

#### **RC OBJECTIVE 1.1**

Promote the rehabilitation or adaptation to new uses of historic sites and structures.

- RC Policy 1.1.1:** List historic sites and structures designated, or proposed for designation, as County landmarks in specific or area plans or local area development guidelines.
- RC Policy 1.1.2:** Direct proposed developments that may affect proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or other similarly purposed advisory body under the Kings County Parks and Recreation Advisory Commission for review and comment.
- RC Policy 1.1.3:** Encourage the protection of cultural and archaeological sites with potential for placement on the NRHP and/or inclusion in the California Inventory of Historic Resources.
- RC Policy 1.1.4:** Refer applications that involve the removal, destruction, or alteration of proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or its successor for recommended mitigation measures.

## **RC OBJECTIVE 1.2**

Identify potential archaeological and historical resources and, where appropriate, protect such resources.

- RC Policy 1.2.1:** Participate in and support efforts to identify significant cultural and archaeological resources and protect those resources in accordance with Public Resources Code 5097.9 and 5097.993.
- RC Policy 1.2.2:** Continue to solicit input from local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American Activity and/or to sites of cultural importance.
- RC Policy 1.2.3:** Address archaeological and cultural resources in accordance with the California Environmental Quality Act (CEQA) for discretionary land use applications.
- RC Policy 1.2.4:** The County will respectfully comply with Government Code §65352.3 (SB18) by conducting formal consultations with tribes as identified by the Native American Heritage Commission on all general plan and specific plan amendments.
- RC Policy 1.2.5:** The County will respectfully comply with Government Code §6254.(r) and 6254.10 by protecting confidential information concerning Native American cultural resources. For example, adopting internal procedures such as keeping confidential archaeological reports away from public view or discussion in public meetings.
- RC Policy 1.2.6:** The County shall work in good faith with the Santa Rosa Rancheria Tachi Yokut Tribe ("Tribe"), the developer and other parties if the Tribe requests return of certain Native American artifacts from private development projects (e.g., for interpretive or educational value). The developer is expected to act in good faith when considering the Tribe's request for artifacts. Artifacts not desired by the Tribe shall be placed in a qualified repository as established by the California State Historical Resources Commission (see Guidelines for the Curation of Archaeological Collections, May 1993). If no facility is available, then all artifacts shall be donated to the Tribe.
- RC Policy 1.2.7:** The County shall work with the developer of any "gated community" (i.e. not open to the public), to ensure that Native Americans are allowed future access, under reasonable conditions, to view/visit known sites within the "gated community." If a village site is identified within a gated community project, the developer shall be conditioned to allow future access by Native Americans to view/visit that village site.

### *City of Avenal General Plan*

The Avenal 2035 General Plan provides goals and policies for the identification and preservation of archaeological and built-environment historical resources. The Land Use Element identifies as a goal the preservation and enhancement Avenal's unique and small-town character. To meet this goal, the City committed to identifying and preserving historic buildings and structures citywide. The Conservation, Natural Resources & Recreation Element identifies as the goal of preserving and protecting Avenal's historic and cultural resources. To that end, the City adopted policies including the encouragement of preservation and adaptive reuse of historically significant properties,

protection of resources discovered inadvertently during construction activities, consultation with Native American tribes per State regulation, and the protection of prehistoric sites and artifacts.

In addition, the City of Avenal has adopted a historic preservation ordinance that provides a procedure for the local designation of historical resources and certain procedures regulating the issuing of construction permits for the alteration of a locally designated historical resources.

#### *City of Corcoran General Plan*

The City of Corcoran General Plan 2025 Open Space, Conservation, and Recreation Element recognizes an objective the preservation important links to Corcoran's heritage, including historical and pre-historical resources. To achieve this, the City committed to policies requiring consult with the Central California Information Center at California State University, Bakersfield prior to certain development projects and to avoid or mitigate impacts to historical resources to the extent feasible. Other policies regulate the design of residential, commercial, and industrial development in a manner that preserves the character of historically significant properties. Corcoran has not enacted laws pertaining to historical resources (City of Corcoran 2007).

#### *City of Hanford General Plan*

The City of Hanford 2035 General Plan identifies the preservation of cultural resources as a means to enhance a community's overall sense of place and quality of life; revitalize and stabilize downtowns, business districts, and neighborhoods; produce local jobs; promote heritage tourism; and increase local property values. To these ends, the Open Space, Conservation & Recreation Element adopts several goals and policies pertaining to the preservation of archaeological and built-environment historical resources. With respect to built environment historical resources, the goals and policies promote the designation historic properties and districts, guidance for the design of new buildings in historic districts, adaptive reuse of designated buildings. Goals and policies pertaining to archaeological resources encourage consultation with Native American tribes and methods of protecting inadvertently discovered resources and artifacts. The general plan also identifies the following historical properties and sites in Hanford that have not been formally designated but may qualify as historical resources: the Temple Theater, Fox Theater, Kings Art Center, Old Post Office, Bastille, Hanford Civic Auditorium, and Hanford Veteran's Memorial Building (City of Hanford 2017).

City of the Hanford municipal code includes procedures for establishing historic overlay zones. The purpose of the chapter is to provide regulations for the protection, enhancement, preservation and use of structures in districts of historic, architectural, and engineering significance for the cultural and aesthetic benefit of the community. The regulations provide criteria for the evaluation of candidate districts and properties and design requirements for construction proposed within a district.

#### *City of Lemoore General Plan*

The City of Lemoore 2030 General Plan Conservation and Open Space Element policies intended for the identification and protection of archaeological and built-environment historical resources. These include measures to establish an inventory of historical buildings in Lemoore; require that new development analyze and avoid potential impacts to archaeological, paleontological, and historic resources; adopt a Landmarks and Historic Preservation District Overlay Zone or Ordinance; and establish an interim design review process for proposed demolitions and exterior alterations and

additions to non-residential buildings that are more than 75 years old. Lemoore has not enacted laws pertaining to historical resources.

### 4.5.3 Impact Analysis

#### a. Methodology and Significance Thresholds

For this discussion, the term historical resource broadly includes archaeological and built environment resources that are eligible for or listed in the NRHP, CRHR, or a local historic register. The level of significance of a cultural resource impact is determined by whether that resource meets the criteria discussed above. Where the significance of a site is unknown, it is presumed to be a significant resource for the purpose of identifying potential areas of disturbance associated with construction projects or development in urban infill areas near high-quality transportation corridors as outlined in the 2022 RTP/SCS.

Appendix G of the State CEQA Guidelines identifies the following criteria for determining whether implementation of the 2022 RTP/SCS' impacts would have a significant impact on cultural and historic resources:

1. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5;
2. Cause a substantial adverse change in the significant of an archaeological resource pursuant to §15064.5; or
3. Disturb any human remains, including those interred outside of formal cemeteries.

#### b. Project Impacts and Mitigation Measures

The following section presents a programmatic-level discussion of the potential for impacts to sensitive cultural resources from implementation of 2022 RTP/SCS. Impacts and associated mitigation measures would apply in the KCAG region and all cities within the County. Due to the programmatic nature of 2022 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by 2022 RTP/SCS could result in the impacts as described in the following section.

<b>Threshold 1:</b> Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.
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**Impact CR-1 TRANSPORTATION IMPROVEMENT PROJECTS AND THE LAND USE SCENARIO ENVISIONED BY 2022 RTP/SCS WOULD CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A HISTORICAL RESOURCE PURSUANT TO §15064.5. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

Projects that involve bridge replacements and removal of other structures older than 50 years could generate an impact to buildings and structures, which qualify as historical resources. Furthermore, projects that are adjacent to or near historical resources could have the potential alter the integrity of those buildings and structures by changing their environmental context if the setting of that resource conveys the reasons for its significance.

The 2022 RTP/SCS also has a future land use scenario that emphasizes infill development near transportation hubs in existing urbanized areas and includes some development in outlying areas. There are no specific development projects pursuant to the land use scenario envisioned by the 2022 RTP/SCS identified and, thus, a project specific evaluation is not possible. However, because future infill near transit could be located near or adjacent to known or potential historical resources, the integrity of such resources could be indirectly or directly impacted as a result. Moreover, if future infill near transit would involve redevelopment/demolition of existing resources, it is possible that such resource could have historical significance (as determined by site specific evaluation) given the presence of buildings and structures that are over 45 years old within the KCAG region, particularly within existing urbanized areas. Redevelopment or demolition could result in the permanent loss of historical resources. Similarly, while proposed transportation projects would not impact known historical resources, it is possible that such projects may require reconstruction or demolition of transportation infrastructure or other buildings or structures that are over 45 years old, and which may be considered historically significant as determined by site specific evaluation. Such reconstruction or demolition would result in the material impairment of historical resources.

In general, prior to commencement of any action, development, or land use changes on lands subject to federal jurisdiction or for projects involving federal funding, a cultural resource survey and an environmental analysis must be prepared, including a historic resources assessment. Historic structures are protected under the regulations of the National Historic Preservation Act and the Department of Transportation Act of 1966. KCAG-sponsored projects would be subject to local ordinance requirements within the jurisdiction in which they occur, including General Plan provisions that protect cultural resources. Nevertheless, impacts would be significant because there would be substantial adverse changes to historic structures that meet the definition of “historical resources.” The following mitigation measure would be required for any project that may impact historical resources.

### **Mitigation Measure**

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measure developed for the 2022 RTP/SCS program where applicable for transportation projects that would result in impacts to historical resources, and where feasible and necessary based on project and site-specific considerations. The County and cities in the KCAG region can and should implement these measures, where relevant to land use projects implementing the 2022 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

#### *CR-1 Built Environment Historical Resources*

Prior to the issuance of an individual project permit, the implementing agency of a 2022 RTP/SCS project involving a building or structure over 45 years of age shall prepare a map defining the project area. This map shall indicate the areas of disturbance associated with construction and operation of the facility and will help in determining whether known and potential historical resources are located within the project area. If a structure greater than 45 years in age is within the identified impact zone, a survey and evaluation of the structure(s) to determine their eligibility for recognition under State, federal, or local historic resource designation criteria shall be conducted. The evaluation shall be prepared by an architectural historian or historical architect meeting the Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation, Professional Qualification Standards (PQS) as defined in 36 CFR Part 61. All buildings and structures

45 years of age or older within the project area shall be evaluated in their historic context and documented in a report meeting the OHP guidelines. All evaluated properties shall be documented on Department of Parks and Recreation Series 523 Forms. The report shall be submitted to the implementing agency for review and concurrence.

If historical resources are identified within the project area of a proposed development, efforts shall be made to the extent feasible to ensure that impacts are mitigated. Application of mitigation shall generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the implementing agency for review.

Efforts shall be made to the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the *Secretary of the Interior's Standards for the Treatments of Historic Properties* (Standards). In accordance with CEQA, a project that has been determined to conform with the Standards generally would not cause a significant adverse direct or indirect impact to historical resources (14 CCR § 15126.4(b)(1)). Application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the implementing agency for review and concurrence.

If significant historical resources are identified on a development site and compliance with the Standards and/or avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. Mitigation measures may include documentation of the historical resource in the form of a Historic American Building Survey-Like report. The report shall comply with the Secretary of the Interior's Standards for Architectural and Engineering Documentation and shall generally follow the HABS Level III requirements, including digital photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the PQS and submitted to the implementing agency prior to issuance of any permits for demolition or alteration of the historical resource. Copies of the report shall be provided to a local library and/or other appropriate repositories.

#### **IMPLEMENTING AGENCIES AND TIMING**

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

#### **Significance After Mitigation**

Redevelopment or demolition that may be required to implement transportation improvements and/or infill and other development may result in the permanent loss or damage to historic structures. While implementation of Mitigation Measure CR-1 would reduce impacts to the extent feasible, some project-specific impacts may be unavoidable. Therefore, this impact is significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.

<b>Threshold 2:</b> Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.
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**Impact CR-2 CONSTRUCTION ACTIVITY ASSOCIATED WITH TRANSPORTATION IMPROVEMENT PROJECTS, AND LAND USE DEVELOPMENT ENVISIONED BY THE IMPLEMENTATION OF 2022 RTP/SCS MAY CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF AN ARCHAEOLOGICAL RESOURCE PURSUANT TO §15064.5. POTENTIAL IMPACTS TO ARCHAEOLOGICAL RESOURCES WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

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It is known that archaeological resources are present throughout the KCAG region. Therefore, it is possible to encounter known and unknown archaeological resources as a result of implementation of transportation improvement projects pursuant to the 2022 RTP/SCS. Many of the improvements proposed under the 2022 RTP/SCS consist of minor expansions of existing facilities that would not involve construction in previously undisturbed areas. However, depending on the location and extent of the proposed improvement and ground disturbance, known and/or unknown cultural resources could be impacted. Project-specific analysis would be required as individual projects are proposed.

Representative new projects in the 2022 RTP/SCS that may disrupt previously undisturbed areas are listed in Table 2-1 of Chapter 2, *Project Description*. The projects listed in this table were chosen based on potential to include new infrastructure. It is possible that some of the proposed roadway or bridge widening or extension projects, beyond those listed in Tables 2-1 through 2-5 of Section 2, *Project Description* would adversely impact archaeological resources. In particular, construction activities may disturb the resources thereby exposing them to potential vandalism or causing them to be displaced from the original context and integrity. Therefore, impacts to archaeological resources would be potentially significant. As mentioned above, specific analysis will be required as these individual projects are implemented.

The 2022 RTP/SCS considers a future land use scenario that emphasizes infill near transit and in existing urbanized areas. However, it is possible that archaeological resources could be located on or near future infill development sites, and in undisturbed areas that would be developed during implementation of the 2022 RTP/SCS. Project grading and excavation for development sites would disturb these undiscovered resources.

In general, prior to commencement of any action, development or land use changes on lands subject to federal jurisdiction or for projects involving federal funding, a cultural resource survey and an environmental analysis must be prepared. County and city sponsored projects would be subject to local ordinance requirements, including General Plan provisions that protect cultural resources. Nevertheless, impacts to archaeological resources would be potentially significant because there could be substantial adverse changes to significant archaeological resources, i.e., archaeological resources that meet the definition of “historical resources” or “unique archaeological resources.” Mitigation Measures CR-2(a) and CR-2(b) would reduce these impacts.

## **Mitigation Measures**

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2022 RTP/SCS program where applicable for transportation projects that would result in impacts to archaeological resources, and where feasible and necessary based on project and site-specific considerations. Cities and the County can and should implement these measures, where relevant to land use projects implementing the 2022 RTP/SCS. Project-specific environmental



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

#### *CR-2(a) Archaeological Resources Impact Minimization*

Before construction activities, implementing agencies shall, or can and should, retain a qualified archaeologist to conduct a record search at the Southern San Joaquin Valley Information Center to determine whether the project area has been previously surveyed and whether resources were identified. When recommended by the Information Center, implementing agencies shall, or can and should, retain a qualified archaeologist to conduct archaeological surveys before construction activities. Implementing agencies shall, or can and should, follow recommendations identified in the survey, which may include, but would not be limited to: subsurface testing, designing and implementing a Worker Environmental Awareness Program (WEAP), construction monitoring by a qualified archaeologist, or avoidance of sites and preservation in place. Recommended mitigation measures will be consistent with *State CEQA Guidelines* Section 15126.4(b)(3) recommendations and may include but not be limited to preservation in place and/or data recovery. All cultural resources work shall follow accepted professional standards in recording any find including submittal of standard Department of Parks and Recreation (DPR) Primary Record forms (Form DPR 523) and location information to the appropriate California Historical Resources Information System office for the project area.

#### *CR-2(b) Unanticipated Discoveries During Construction*

During construction activities, implementing agencies shall, or can and should, implement the following measures. If evidence of any prehistoric or historic-era subsurface archaeological features, deposits are discovered during construction-related earthmoving activities (e.g., ceramic shard, trash scatters, lithic scatters), all ground-disturbing activity proximate to the discovery shall be halted until a qualified archaeologist (36 CFR Section 61) can assess the significance of the find. If the find is a prehistoric archaeological site, the appropriate Native American group shall be notified. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the archaeologist determines that further information is needed to evaluate significance, a testing plan shall be prepared and implemented. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall work with the implementing agency to avoid disturbance to the resources, and if complete avoidance is not feasible in light of project design, economics, logistics and other factors, shall recommend additional measures such as the preparation and implementation of a data recovery plan. All cultural resources work shall follow accepted professional standards in recording any find including submittal of standard DPR Primary Record forms (DPR 523a) and location information to the appropriate California Historical Resources Information System office for the project area. If the find is a Native American archaeological site, the culturally affiliated California Native American tribe shall be notified and afforded the opportunity to monitor mitigative treatment. During evaluation or mitigative treatment, ground disturbance and construction work could continue in other parts of the project area that are distant enough from the find not to impact it, as determined by the qualified archaeologist.

### **IMPLEMENTING AGENCIES AND TIMING**

Implementing agencies for transportation projects are KCAG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and the County. This mitigation

measure shall, or can and should, be applied during permitting and environmental review and implemented during construction where appropriate.

### Significance After Mitigation

Implementation of Mitigation Measures CR-2(a) and CR-2(b) would reduce potential impacts to archaeological resources to the extent feasible, but some project-specific impacts may be unavoidable. Therefore, this impact is significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.

<b>Threshold 3:</b> Disturb any human remains, including those interred outside of formal cemeteries.
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**IMPACT CR-3 CONSTRUCTION ACTIVITY ASSOCIATED WITH TRANSPORTATION IMPROVEMENT PROJECTS, AND LAND USE DEVELOPMENT ENVISIONED BY IMPLEMENTATION OF 2022 RTP/SCS COULD RESULT IN DISTURBANCES TO HUMAN REMAINS INCLUDING THOSE INTERRED OUTSIDE OF FORMAL CEMETERIES. POTENTIAL IMPACTS TO HUMAN REMAINS WOULD BE LESS THAN SIGNIFICANT.**

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Human burials outside of formal cemeteries are often associated with prehistoric archaeological contexts. It is possible to encounter unknown human burials because of implementation of transportation improvement projects under the 2022 RTP/SCS. Excavation during construction activities in the KCAG region would have the potential to disturb these resources, including Native American burials.

In addition to being potential archaeological resources, human burials have specific provisions for treatment in PRC Section 5097, as listed under Section 4.5.2, *Regulatory Setting*. The California Health and Safety Code (Sections 7050.5, 7051 and 7054) has specific provisions for the protection of human burial remains. Existing regulations address the illegality of interfering with human burial remains, and protects them from disturbance, vandalism, or destruction, and established procedures to be implemented if Native American skeletal remains are discovered. PRC Section 5097.98 also addresses the disposition of Native American burials, protects such remains, and established the NAHC to resolve any related disputes. Implementation of these regulations would ensure that 2022 RTP/SCS impacts to disturbance of human remains, including those interred outside of formal cemeteries would be less than significant.

### Mitigation Measures

No mitigation measures are required.

### c. Specific 2022 RTP/SCS Projects That May Result in Impacts

All 2022 RTP/SCS projects that require ground disturbance in native soils may result in cultural impacts. The 2022 RTP/SCS projects are referenced in Section 2, *Project Description*. Table 4.5-2 below identifies representative projects with the potential to cause or contribute to direct or indirect impacts to cultural resources. These projects were chosen based on their scope and potential to include the development of new transportation infrastructure. While many projects have the potential to impact cultural resources, those requiring substantial ground disturbance in undisturbed areas have greater potential to impact prehistoric archaeological resources. Projects located in urban infill or previously disturbed areas have a greater potential to impact historical built environment resources, as well as historical archaeological resources in older developed areas. Additional analyses would be needed as the individual projects are implemented to determine the

project-specific impact. The mitigation measures discussed above and potentially others requested by Tribal representatives on a project-by-project basis would apply to these specific projects.

**Table 4.5-2 RTP Projects that May Result in Cultural Resources Impacts**

Jurisdiction	Location	Project Limits	Project Description	Potential Impact
<b>Tier 1 Avenal Roadway Projects</b>				
Avenal	7th Ave	San Joaquin St to SR 269	Reconstruct and improve curb/ramps	CR-2
Avenal	Central Ave	San Joaquin St to SR 269	Reconstruct and improve curb/ramps	CR-2
Avenal	Stanislaus St	San Joaquin St to 2nd Ave	Reconstruct and improve curb/ramps	CR-2
Avenal	Merced St	San Joaquin St to 2nd Ave	Reconstruct and improve curb/ramps	CR-2
<b>Avenal Bicycle/Pedestrian Projects</b>				
Avenal Active Transportation	First Avenue	Reef-Sunset Middle School to Laneva Blvd (SR 33)	Continuous bike lanes (Class II)	CR-2
Avenal Active Transportation	Seventh Avenue	Mariposa St. to Lavena Blvd (SR 33)	Continuous bike lanes (Class II)	CR-2
Avenal Active Transportation	Hanford Avenue	Fresno St to Tamarack E.S.	New bike route (Class III)	CR-2
Avenal Active Transportation	Monterey Street	7th Ave to Park Ave	New bike route (Class III)	CR-2
Avenal Active Transportation	Big Tar Canyon Road	7th Ave to Sports Complex	Paved multi-use path	CR-2
Avenal Active Transportation	San Joaquin Street	Skyline Blvd. to Lavena Blvd. (SR 33)	Separated bikeway (Class IV)	CR-2
Avenal Active Transportation	Hydril Road	Skyline Blvd. to Just west of Ave. 36	Paved multi-use path	CR-2
<b>Corcoran Bicycle/Pedestrian Projects</b>				
Corcoran ATP	Orange Avenue	Seventh Ave to Otis Ave	Bike lanes (Class II) or bike route (Class III)	CR-2
Corcoran ATP	North Avenue	Seventh Ave to Otis Ave	Bike lanes (Class II) or bike route (Class III)	CR-2
Corcoran ATP	Patterson Avenue	6 ½ Ave to Otis Ave	Bike lanes (Class II) or bike route (Class III)	CR-2
Corcoran ATP	Whitlet Avenue	West of Doran Ave to the East of Pickerell Ave	Bike lanes (Class II) or bike route (Class III)	CR-2
Corcoran ATP	Sherman Avenue	Seventh Ave to Otis Ave	Bike lanes (Class II) or bike route (Class III)	CR-2
Corcoran ATP	Oregon Avenue	6 ½ Ave to King Ave	Bike lanes (Class II) or bike route (Class III)	CR-2
Corcoran ATP	Hydril Road	Skyline Blvd to just west of Ave 36	Paved multi-use path	CR-2
Corcoran ATP	6 1/2 Avenue	Orange Ave to Oregon Ave	Bike lanes (Class II) or bike route (Class III)	CR-2

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<b>Jurisdiction</b>	<b>Location</b>	<b>Project Limits</b>	<b>Project Description</b>	<b>Potential Impact</b>
Corcoran ATP	Dairy Avenue	Niles Ave to Pueblo Ave	Bike lanes (Class II) or bike route (Class III)	CR-2
Corcoran ATP	Letts Avenue	North Ave to Oregon Ave	Bike lanes (Class II) or bike route (Class III)	CR-2
Corcoran ATP	Otis Avenue	Orange Ave to Patterson Ave	Bike lanes (Class II) or bike route (Class III)	CR-2
Corcoran ATP	Chittenden Avenue	Patterson Ave to Sherman Ave	Bike lanes (Class II) or bike route (Class III)	CR-2
Corcoran ATP	Flory Avenue	Whitley Ave to Bainum Ave	Bike lanes (Class II) or bike route (Class III)	CR-2
Corcoran ATP	King Avenue	Bainum Ave to Corcoran State Prison	Bike lanes (Class II) or bike route (Class III)	CR-2
Corcoran ATP	Dairy Avenue	Orange Ave to Oregon Ave	Multiple gaps, mostly north of Whitley and south of Bainum	CR-2
Corcoran ATP	Josephine Avenue	North Ave to Preston Way	Multiple gaps, mostly south of Patterson	CR-2
Corcoran ATP	Letts Avenue	Orange Ave to Oregon Ave	Multiple gaps, on both sides	CR-2
Corcoran ATP	Otis Avenue	Cardoza Ave to north of Patterson Ave	Gap on the west side	CR-2
Corcoran ATP	Orange Avenue	Dairy Ave to Letts Ave	Gap on the south side	CR-2
Corcoran ATP	North Avenue	6 ½ Ave to Otis Ave	Multiple gaps, on both sides	CR-2
Corcoran ATP	Patterson Avenue	Soto Ave to Otis Ave	Multiple gaps, on both sides	CR-2
Corcoran ATP	Whitley Avenue	Burnham Smith Park to Dairy Ave	Two gaps	CR-2
Corcoran ATP	Sherman Avenue	6 ½ Ave to Kings Ave	Multiple gaps, on both sides	CR-2
Corcoran ATP	Bainum Avenue	Dairy Ave to Norboe Ave	Multiple gaps, mostly on the north side	CR-2
Corcoran ATP	Oregon Avenue	Dairy Ave to Makr Twain E.S	Multiple gaps, mostly on the south side	CR-2
<b>Road Maintenance Projects</b>				
Corcoran	Various Locations	–	Pavement Maintenance Program	CR-2
Corcoran	Various Locations	–	Pavement Maintenance Program	CR-2
Corcoran	Various Locations	–	Pavement Maintenance Program	CR-2
Corcoran	Various Locations	–	Pavement Maintenance Program	CR-2
Corcoran	Various Locations	–	Pavement Maintenance Program	CR-2

Jurisdiction	Location	Project Limits	Project Description	Potential Impact
Corcoran	Various Locations	–	Pavement Maintenance Program	CR-2
Corcoran	Various Locations	–	Pavement Maintenance Program	CR-2
Corcoran	Various Locations	–	Pavement Maintenance Program	CR-2
Corcoran	Various Locations	–	Pavement Maintenance Program	CR-2
<b>Hanford Bicycle Projects</b>				
Hanford	13th Avenue	Fargo Ave. Houston Ave.	Bike route (Class III)	CR-2
Hanford	Centennial Drive	Berkshire Ln. 12th Ave. / Mall Dr.	Bike lanes (Class II) or bike route (Class III)	CR-2
Hanford	12th Avenue	Fargo Ave. Grangeville Blvd.	Bike lanes (Class II)	CR-2
Hanford	12th Avenue	Hume Ave. Idaho Ave.	Bike route (Class III)	CR-2
Hanford	Fitzgerald Lane	Fargo Ave. Grangeville Blvd.	Bike route (Class III)	CR-2
Hanford	Kings County Drive / Mall Drive	12th Ave. / Liberty St. 12th Ave. / Centennial Dr.	Bike route (Class III)	CR-2
Hanford	University Avenue	Grangeville Blvd. Greenfield Ave.	Bike route (Class III)	CR-2
Hanford	Campus Drive	Greenfield Ave. Glendale Ave.	Bike route (Class III)	CR-2
Hanford	11 1/2 Avenue / Echo Lane	Davis St. Hume Ave.	Bike route (Class III)	CR-2
Hanford	Glacier Way	Flint Ave. Cortner St.	Bike route (Class III)	CR-2
Hanford	11th Avenue	Flint Ave. Grangeville Blvd.	Bike lanes (Class II) or bike route (Class III)	CR-2
Hanford	11th Avenue	7th St. Jackson Ave.	Bike route (Class III)	CR-2
Hanford	Williams Street / Jones Street	Davis St. Hume Ave.	Bike route (Class III)	CR-2
Hanford	Redington Street	Grangeville Blvd. Lacey Blvd.	Bike lanes (Class II)	CR-2
Hanford	10 1/2 Avenue	Hanford-Armona Rd. Houston Ave.	Bike route (Class III)	CR-2
Hanford	Mission Drive	Flint Ave. 10th Ave.	Bike route (Class III)	CR-2
Hanford	10th Avenue	3rd St. Jackson Ave.	Bike route (Class III)	CR-2
Hanford	Neill Way	Fargo Ave. Leland Way	Bike route (Class III)	CR-2
Hanford	9 1/4 Avenue	Leland Way Lacey Blvd.	Bike route (Class III)	CR-2
Hanford	9th Avenue	Lacey Blvd. Idaho Ave.	Bike route (Class III)	CR-2
Hanford	Flint Avenue	12th Ave. 10th Ave.	Bike route (Class III)	CR-2
Hanford	Pepper Drive / Encore Drive	Glacier Way Fargo Ave.	Bike route (Class III)	CR-2
Hanford	Fargo Avenue	13th Ave. Centennial Dr.	Bike route (Class III)	CR-2
Hanford	Cortner Street	Glacier Way Douty St.	Bike route (Class III)	CR-2
Hanford	Leland Way	Douty St. 9 1/4 Ave.	Bike route (Class III)	CR-2

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Jurisdiction	Location	Project Limits	Project Description	Potential Impact
Hanford	Mustang Drive / Berkshire Lane	13th Ave. Centennial Dr.	Bike route (Class III)	CR-2
Hanford	Grangeville Boulevard	13th Ave. Centennial Dr.	Bike route (Class III)	CR-2
Hanford	Grangeville Boulevard	9th Ave. 8 1/2 Ave.	Bike route (Class III)	CR-2
Hanford	Liberty Street	Centennial Dr. 12th Ave.	Bike route (Class III)	CR-2
Hanford	Ivy Street	11th Ave. 10th Ave.	Bike route (Class III)	CR-2
Hanford	Lacey Boulevard	Centennial Dr. Irwin St.	Bike route (Class III)	CR-2
Hanford	Lacey Boulevard	10th Ave. SR 43	Bike route (Class III)	CR-2
Hanford	7th Street	Mall Dr. 11th Ave.	Bike lanes (Class II)	CR-2
Hanford	6th Street	11th Ave. 10th Ave.	Bike lanes (Class II)	CR-2
Hanford	3rd Street	10th Ave. 9th Ave.	Bike route (Class III)	CR-2
Hanford	Glendale Avenue	12 1/2 Ave. Campus Dr.	Bike lanes (Class II)	CR-2
Hanford	Davis Street	11 1/2 Ave. 11th Ave.	Bike route (Class III)	CR-2
Hanford	Hanford-Armona Road	10th Ave. Hanford Municipal Airport	Bike route (Class III)	CR-2
Hanford	Hume Avenue	12th Ave. Jones St.	Bike route (Class III)	CR-2
Hanford	Houston Avenue	13th Ave. 9th Ave.	Bike route (Class III)	CR-2
Hanford	Iona Avenue	12th Ave. 9th Ave.	Bike route (Class III)	CR-2
Hanford	Idaho Avenue	12th Ave. 9th Ave.	Bike route (Class III)	CR-2
Hanford	Jackson Avenue.	11th Ave. 10th Ave.	Bike route (Class III)	CR-2
<b>Hanford Pedestrian Projects</b>				
Hanford	Centennial Drive	—	Hanford Pedestrian Project to Centennial Drive	CR-2
Hanford	12th Avenue	—	Hanford Pedestrian Project to 12th Avenue	CR-2
Hanford	Phillips Street	—	Hanford Pedestrian Project to Phillips Street	CR-2
Hanford	Irwin Street	—	Hanford Pedestrian Project to Irwin Street	CR-2
Hanford	Douty Street	—	Hanford Pedestrian Project to Douty Street	CR-2
Hanford	10th Avenue	—	Hanford Pedestrian Project to 10th Avenue	CR-2
Hanford	9 ¼ Avenue	—	Hanford Pedestrian Project to 9 ¼ Avenue	CR-2
Hanford	Fargo Avenue	—	Hanford Pedestrian Project to Fargo Avenue	CR-2
Hanford	Leland Way	—	Hanford Pedestrian Project to Leland Way	CR-2
Hanford	Grangeville Boulevard	—	Hanford Pedestrian Project to Grangeville Boulevard	CR-2

Jurisdiction	Location	Project Limits	Project Description	Potential Impact
Hanford	Greenfield Avenue	–	Hanford Pedestrian Project to Greenfield Avenue	CR-2
Hanford	Elm Street	–	Hanford Pedestrian Project to Elm Street	CR-2
Hanford	West Lacey Boulevard	–	Hanford Pedestrian Project to West Lacey Boulevard	CR-2
Hanford	East Lacey Boulevard	–	Hanford Pedestrian Project to East Lacey Boulevard	CR-2
Hanford	Second Street	–	Hanford Pedestrian Project to Second Street	CR-2
Hanford	Hanford–Armona Road	–	Hanford Pedestrian Project to Hanford–Armona Road	CR-2
<b>Hanford Roadway Projects</b>				
Hanford	10th Ave	SR 198 to Grangeville Blvd	Rehabilitate/Overlay	CR-2
Hanford	10th Ave	Grangeville Blvd to SR 43	Rehabilitate/Overlay	CR-2
Hanford	11th Ave	Ivy St to Grangeville Blvd	Rehabilitate/Overlay	CR-2
Hanford	11th Ave	Grangeville Blvd to Fargo Ave	Rehabilitate/Overlay	CR-2
Hanford	11th Ave	Lacey Blvd to Grangeville Blvd	Rehabilitate/Overlay	CR-2
Hanford	11th Ave	Hanford Armona Rd to Lacey Blvd	Rehabilitate/Overlay	CR-2
Hanford	11th Ave	Hanford Armona Rd to Houston Ave	Rehabilitate/Overlay	CR-2
Hanford	11th Ave	Houston Ave to Idaho Ave	Widen from 2 to 4 lanes w/ left turn pockets	CR-2
Hanford	11th Ave	Houston Ave to Idaho Ave	Install traffic signals and pedestrian facilities	CR-2
Hanford	12th Ave	Fargo Ave to Flint Ave	Widen from 2 to 4 lanes w/ median	CR-2
Hanford	12th Ave	Fargo Ave to Flint Ave	Install traffic signals and pedestrian facilities	CR-2
Hanford	11th Ave	Houston Ave to Idaho Ave	Widen from 2 to 4 lanes w/ left turn pockets	CR-2
Hanford	11th Ave	Houston Ave to Idaho Ave	Install traffic signals and pedestrian facilities	CR-2
Hanford	12th Ave	Fargo Ave to Flint Ave	Widen from 2 to 4 lanes w/ median	CR-2
Hanford	12th Ave	Fargo Ave to Flint Ave	Install traffic signals and pedestrian facilities	CR-2
Hanford	9th Ave	Lacey Blvd to Grangeville Blvd	New arterial roadway – 4 lanes w/ median	CR-2
Hanford	9th Ave	Lacey Blvd to Grangeville Blvd	Install traffic signals and pedestrian facilities	CR-2

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Jurisdiction	Location	Project Limits	Project Description	Potential Impact
Hanford	9th Ave	Grangeville Blvd to Fargo Ave	New arterial roadway – 4 lanes w/ median	CR-2
Hanford	9th Ave	Grangeville Blvd to Fargo Ave	Install traffic signals and pedestrian facilities	CR-2
Hanford	E Lacey Blvd	10th Ave to 9th Ave	Widen from 2 to 4 lanes w/ left turn pockets	CR-2
Hanford	E Lacey Blvd	9th Ave to Sierra Dr	Widen from 2 to 4 lanes w/ left turn pockets	CR-2
Hanford	Fargo Ave	BN&SF to 12th Ave	Widen from 2 to 4 lanes w/ left turn pockets	CR-2
Hanford	Fargo Ave	12th Ave to 13th Ave	Widen from 2 to 4 lanes w/ left turn pockets	CR-2
Hanford	Fargo Ave	12th Ave to 13th Ave	Install traffic signals and pedestrian facilities	CR-2
Hanford	Fargo Ave	11th Ave to Meadow View Ln	Rehabilitate/Overlay	CR-2
Hanford	Grangeville Blvd	Douty St to 10th Ave	Rehabilitate/Overlay	CR-2
Hanford	Grangeville Blvd	Centennial Dr to 13th Ave	Widen from 2 to 4 lanes w/ left turn pockets	CR-2
Hanford	Grangeville Blvd	11th Ave to 12th Ave	Rehabilitate/Overlay	CR-2
Hanford	Grangeville Blvd	10th Ave to 9 1/4 Ave	Rehabilitate/Overlay	CR-2
Hanford	Grangeville Blvd	9 1/4 Ave to SR 43	Widen from 2 to 4 lanes w/ median	CR-2
Hanford	Grangeville Blvd	9 1/4 Ave to SR 43	Install traffic signals and pedestrian facilities	CR-2
Hanford	Hanford Armona Rd	12th Ave to 13th Ave	Widen from 2 to 4 lanes w/ left turn pockets	CR-2
Hanford	Houston Ave	10th Ave to 11th Ave	Widen from 2 to 4 lanes w/ median	CR-2
Hanford	Houston Ave	10th Ave to 11th Ave	Install traffic signals and pedestrian facilities	CR-2
Hanford	Houston Ave	11th Ave to 12th Ave	Widen from 2 to 4 lanes w/ median	CR-2
Hanford	Houston Ave	11th Ave to 12th Ave	Install traffic signals and pedestrian facilities	CR-2
Hanford	Redington St	Lacey Blvd to Grangeville Blvd	Rehabilitate/Overlay	CR-2
Hanford	W Lacey Blvd	12 1/2 Ave to 13th Ave	Widen from 2 to 4 lanes w/ median	CR-2
<b>Lemoore Roadway Projects</b>				
Lemoore	Olive Ave	B St to Redwood Ln	Overlay	CR-2
Lemoore	Oakdale Ln	Vine St to Lum Ave	Overlay	CR-2
Lemoore	E St	Fox St to D St	Overlay	CR-2
Lemoore	W Deodar Ln	Spruce Ave to Glendale Ave	Overlay	CR-2
Lemoore	S Byron Ave	Bush St to South End	Overlay	CR-2
Lemoore	Cambridge Dr	Bush St to Olive St	Overlay	CR-2



Jurisdiction	Location	Project Limits	Project Description	Potential Impact
Lemoore	E D St	Lemoore Ave to Smith St	Overlay	CR-2
Lemoore	W Burlwood Ln	Lemoore Ave to Juniper Ln	Overlay	CR-2
Lemoore	Bush St	Lemoore Ave to D St	Overlay	CR-2
Lemoore	W D St	Bush St to Olive St	Overlay	CR-2
Lemoore	Hanford Armona Rd	Lemoore Ave to Liberty Dr	Overlay	CR-2
Lemoore	Hanford Armona Rd	Liberty Dr to 19th Ave	Overlay	CR-2
Lemoore	Hanford Armona Rd	19th Ave to SR 41	Overlay	CR-2
Lemoore	Iona Ave	Vine St to 19th Ave	Overlay	CR-2
Lemoore	Lemoore Ave	SR 198 to Bush St	Overlay	CR-2
Lemoore	Lemoore Ave	UPRR to Cinnamon Dr	Overlay	CR-2
<b>Lemoore Bicycle Projects</b>				
Lemoore	19 <sup>th</sup> Avenue	D St. to Silverado Dr.	–	CR-2
Lemoore	Hill Street (east side)	E St. to Bush St.	–	CR-2
Lemoore	Follett Street	Cinnamon Dr. to Bush St.	–	CR-2
Lemoore	Cinnamon Dr. (south side)	Hill St. to Hanford Armona Rd.	–	CR-2
Lemoore	Bush Street (south side)	College Ave. to State Route 41	–	CR-2
Lemoore	Bush Street	Lemoore Ave. to Bush Pl. / Barcelona Dr.	–	CR-2
Lemoore	Bush Street (east side)	Bush Pl. / Barcelona Dr. to E. D St.	–	CR-2
Lemoore	Cedar Lane (north side)	19½ Ave. to Lum Dr.	–	CR-1; CR-2
Lemoore	Silverado Drive (south side)	19½ Ave. to 19th Ave.	–	CR-1; CR-2
<b>Lemoore Pedestrian Projects</b>				
Lemoore	19 <sup>th</sup> Avenue	Hanford-Armona Rd. to Silverado Dr. / City Park	–	CR-2
Lemoore	Liberty Drive	Hanford-Armona Rd. to Cinnamon Dr.	–	CR-2
Lemoore	Vine Street	Bush St. to Cedar Ln.	–	CR-2
Lemoore	Fox Street	Hanford-Armona Rd. to Bush St.	–	CR-2
Lemoore	Eton Avenue / Follett Street	Brentwood Dr. to Bush St.	–	CR-2
Lemoore	Lemoore Avenue	Glendale Ave. to Bush St. / Lemoore H.S.	–	CR-2
Lemoore	Daphne Lane (incl. extension)	Heritage Park to San Joaquin Valley R.R.	–	CR-2
Lemoore	Hanford-Armona Road	Apricot Ave. to Cinnamon Dr.	–	CR-2
Lemoore	Cinnamon Drive	19 ½ Ave. to Hanford-Armona Rd.	–	CR-1; CR-2
Lemoore	D Street	W. Bush St. to E. Bush St.	–	CR-2

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Jurisdiction	Location	Project Limits	Project Description	Potential Impact
Lemoore	Bush Street (incl. extension)	19 ½ Ave. to San Joaquin Valley R.R.	–	CR-1; CR-2
Lemoore	Cedar Lane (incl. extensions)	19 ½ Ave. to Lemoore Ave.	–	CR-1; CR-2
Lemoore	Silverado Avenue	19 ½ Ave. to 19th Ave. / City Park	–	CR-1; CR-2
<b>County of Kings Roadway Projects</b>				
County of Kings	Grangeville Blvd	SR 43 to 6th Ave	Reconstruct	CR-2
County of Kings	Grangeville Blvd	5th Ave to 6th Ave	Overlay	CR-2
County of Kings	Grangeville Blvd	1st Ave to 2 1/2 Ave	Overlay	CR-2
County of Kings	Grangeville Blvd	2 1/2 Ave to Highline Canal	Reconstruct	CR-2
County of Kings	Grangeville Blvd	Highline Canal to 5th Ave	Overlay	CR-2
County of Kings	18th Ave	Laurel Ave to Kansas Ave	Overlay	CR-2
County of Kings	10th Ave	Nevada Ave to Pueblo Ave	Overlay	CR-2
County of Kings	10th Ave	Redding Ave to Seattle Ave	Overlay	CR-2
County of Kings	10th Ave	Pueblo Ave to Redding Ave	Overlay	CR-2
County of Kings	10th Ave	Seattle Ave to Utica Ave	Seal Coat	CR-2
County of Kings	14th Ave	Jersey Ave to Kansas Ave	Overlay	CR-2
County of Kings	Excelsior Ave	SR 41 to 22nd Ave	Overlay	CR-2
County of Kings	Excelsior Ave	SR 43 to 6th Ave	Reconstruct 1 mile	CR-2
County of Kings	Laurel Ave	Avenal Cutoff Rd to SR 41	Overlay	CR-2
County of Kings	Nevada Ave	Avenal Cutoff Rd to SR 41	Overlay	CR-2
County of Kings	Avenal Cutoff Rd	SR 198 to 25th Ave	Overlay	CR-2
County of Kings	9th Ave	SR 198 to Houston Ave	Overlay	CR-2
County of Kings	Utica Ave	11th Ave to 16th Ave	Overlay	CR-2
County of Kings	6th Ave	Utica Ave to Virginia Ave	Overlay	CR-2
County of Kings	6th Ave	Virginia Ave to Xavier Ave	Overlay	CR-2
County of Kings	6th Ave	Kern County Xavier Ave	Overlay	CR-2
County of Kings	Virginia Ave	4th Ave to 6th Ave	Overlay	CR-2
County of Kings	Utica Ave	16th Ave to 20th Ave	Overlay	CR-2
County of Kings	Utica Ave	6th Ave to 11th Ave	Overlay	CR-2
County of Kings	6th Avenue	Burris Park Dr. to Flint Ave	Class III with stripe	CR-2
County of Kings	10th Avenue	Houston Ave. to Kansas Ave	Class III with stripe	CR-2
County of Kings	10th Avenue	Nevada Ave to Whitney Ave	Class III with stripe	CR-2
County of Kings	10 1/2 Avenue	Kansas Ave to Nevada Ave.	Class III with stripe	CR-2
County of Kings	12 3/4 Avenue	Fresno County Line to Excelsior Ave.	Class III with stripe	CR-2
County of Kings	18th Avenue	Lemoore City Limit to Jackson Ave	Class II	CR-2
County of Kings	Fargo Avenue	14th Ave to BN Santa Fe RR / Hanford city limit	Class III with stripe	CR-2

Jurisdiction	Location	Project Limits	Project Description	Potential Impact
County of Kings	Flint Avenue	18th Ave to 6th Ave	Class III with stripe	CR-2
County of Kings	Jackson Avenue	Avenal Cutoff Rd. to 18th Ave	Class III with stripe	CR-2
County of Kings	Nevada Avenue	Avenal Cutoff Rd. to Hwy 41	Class III with stripe	CR-2
County of Kings	Whitley Avenue	10th ave. to 7th Ave. / Corcoran city limit	Class III with stripe	CR-2
<b>Unincorporated Kings County Priority Pedestrian Project: Armona</b>				
Kings County	Armona	14th Ave to Front St	Sidewalks along 14th Avenue and Front Street	CR-2
Kings County	Armona	14th Ave to North of Hwy 198	New or restriped crosswalks and crossing signs along 14th Avenue north of Highway 198 and near schools	CR-2
Kings County	Armona	Ambrose/C Streets or at Railroad Avenue/D Street	Pedestrian crossings across the railroad ROW at Ambrose/C Streets or at Railroad Avenue/D Street	CR-2
Kings County	Armona	East of 14th Ave to North of Front St	Footpaths in new developments east of 14th Avenue and north of Front Street	CR-2
Kings County	Armona	Armona North to Front Street	Cut throughs from cul-de-sacs in the Armona North subdivision onto Front Street	CR-2
Kings County	Armona	Front St to W. Hanford	Multi-use path from Front Street to west Hanford	CR-2
<b>Unincorporated Kings County Priority Pedestrian Project: Home Garden</b>				
Kings County	–	–	Sidewalks and crosswalks along the major roads	CR-2
Kings County	–	–	Multi-use paths in new developments in the Northwest Growth Area	CR-2
Kings County	10th/Home Avenues	–	Traffic-calming design for the intersection of 10th/Home Avenues	CR-2
<b>Unincorporated Kings County Priority Pedestrian Project: Kettleman City</b>				
Kings County	–	–	Sidewalks along the major roads in the residential area	CR-1; CR-2
Kings County	Ninth St	–	Multi-use path south of Ninth Street between the residential and highway commercial areas	CR-1; CR-2
<b>Unincorporated Kings County Priority Pedestrian Project: Stratford</b>				
Kings County	–	--	Sidewalks along the major roads	CR-2

Jurisdiction	Location	Project Limits	Project Description	Potential Impact
Kings County	–	–	Multi-use path along 20 ½ Avenue south of 6th Street	CR-2

#### 4.5.4 Cumulative Impacts

The cumulative impact analysis area for cultural resources consists of the KCAG region and adjoining counties. Information regarding these adjoining counties can be found in Section 3.3.3.1, *Environmental Setting*. Future development in this region that could impact cultural resources is considered in the analysis. This cumulative extent is used to evaluate potential direct and indirect, and permanent and temporary impacts to historic built environment resources and archaeological resources within the context of regional diminishment of these resources.

The cumulative impact analysis area for cultural resources consists of the KCAG region and the adjoining counties, based on the historic, ethnographic, and prehistoric period use patterns of the region. Information regarding these adjoining counties can be found in Section 3.3.3 Approach for Cumulative Analysis. This is appropriate because cultural resources identified in this larger region will be similar in type and style to those that are or may be present in the KCAG region. As discussed in Section 4.5.3, the transportation projects and land use scenario envisioned in the proposed 2022 RTP/SCS could require substantial ground disturbance in undisturbed areas or in infill areas, which could impact historic built environment resources and archaeological resources.

The increase in growth in previously undisturbed areas contributes to regional impacts on existing and previously undisturbed and undiscovered historic and archaeological resources, including CEQA-defined “historical resources.” While most cultural resources are site specific, with impacts that are project specific, others may have regional significance; for example, an historic structure that represents the last known example of its kind would constitute a regional impact if it were affected by future 2022 RTP/SCS project implementation. In addition, there are historic districts or areas that can be affected by multiple or successive projects, over time, resulting in a cumulative impact to the historic resource. For such resources, cumulative impacts would be significant, and the 2022 RTP/SCS contribution to them would be cumulatively considerable since Impacts CR-1 and CR-2 are significant. Mitigation Measures CR-1, CR-2(a), and CR-2(b) would reduce impacts associated with 2022 RTP/SCS projects through impact minimization for historical and archaeological resources. However, it cannot be guaranteed that all future project level impacts can be mitigated to a less than significant level. As such, the 2022 RTP/SCS contribution would remain cumulatively considerable after mitigation.

## 4.6 Energy

This section discusses the energy impacts of implementing transportation projects in the proposed 2022 RTP/SCS, as well as the energy related consequences of land use projects that are consistent with the proposed 2022 RTP/SCS.

### 4.6.1 Setting

Energy relates directly to environmental quality. Energy use can adversely affect air quality and other natural resources. The vast majority of California's air pollution is caused by burning fossil fuels. Consumption of fossil fuels is linked to changes in global climate and depletion of stratospheric ozone. Transportation energy use is related to the fuel efficiency of cars, trucks, and public transportation; choice of different travel modes (auto, carpool, and public transit); vehicle speeds; and miles traveled by these modes. Construction and routine operation and maintenance of transportation infrastructure also consume energy. In addition, residential, commercial, and industrial land uses consume energy, typically through the use of natural gas and electricity.

#### a. Energy Supply

California's major sources of fuel production in 2020 comprised approximately 38.6 percent noncombustible renewables, 37.2 percent crude oil, 8.8 percent natural gas, 7.8 percent nuclear power, 6.8 percent wood and waste, and .01 percent biofuels (U.S. Energy Information Administration [EIA] 2022a). California's current electricity generation is comprised of approximately 43.8 percent natural gas, 37.0 percent non-hydroelectric renewables, 11.0 percent nuclear, 8.2 percent hydroelectric, and less than one percent of both coal and petroleum (U.S. EIA 2022a).

Natural gas production in 2019 was approximately 275,488 thousand cubic feet (Mcf) in the KCAG region (California Geologic Energy Management Division [CALGEM], formerly California Department of Conservation, Division of Oil, Gas and Geothermic Resources 2020). The KCAG region contained 126 active wells and these wells produced 116,486 barrels (bbl) of oil in 2019 (CalGEM 2020). Table 4.6-1 illustrates the oil and natural gas produced in the KCAG region in 2019 compared to statewide statistics.

**Table 4.6-1 2019 Oil and Natural Gas Production in KCAG region**

Natural Resource	California	KCAG Total	KCAG Proportion of Statewide Production
Crude Oil (bbl)	156,449,220	116,486	0.0007%
Natural Gas (Mcf)	165,986,427	275,488	0.001%

Source: CalGEM 2020

#### b. Energy Consumption and Sources

Total energy consumption in the U.S. in 2020 was estimated at approximately 93 quadrillion Btu (U.S. EIA 2021a). Petroleum provided approximately 35 percent of the energy used in 2020 in the U.S. (U.S. EIA 2021a). In the same year, coal provided approximately 10 percent of energy consumed, natural gas provided approximately 34 percent, nuclear energy provided approximately 9 percent and total renewable sources supplied the rest at approximately 12 percent (U.S. EIA 2021a). On a per capita basis, California is ranked second lowest of the states in terms of energy use

in 2019 (198 million Btu per person), or about 44.0 percent less than the U.S.'s average per capita consumption of 354 million Btu per person (U.S. EIA 2022b).

## Electricity and Natural Gas

In 2020, California used 279,510 gigawatt hours (GWh) of electricity and approximately 12,331 million U.S. therms of natural gas (CEC 2021a; CEC 2021b). Table 4.6-2 illustrates the electricity and natural gas consumption of the KCAG region and its proportion of statewide consumption in 2020.

**Table 4.6-2 2020 Electricity and Natural Gas Consumption in the KCAG Region**

County	Electricity Consumption (GWh) <sup>1</sup>	Electricity Consumption Per Capita Consumption (kWh)	Electricity Consumption Statewide Proportion	Natural Gas Consumption (MMthm) <sup>2</sup>	Natural Gas Consumption Per Capita Consumption (thm)	Natural Gas Consumption Statewide Proportion
Kings	1,877.26	12,424.78	0.67%	63.9	422.93	0.52%

<sup>1</sup> Electricity consumption is quantified in Millions of Kilowatt-Hours (GWh), while per capita electricity is quantified in Kilowatt-Hours (kWh).

<sup>2</sup> Natural Gas consumption is quantified in Millions of Therms (MMthm), while per capita natural gas consumption is quantified in Therms (thm).

Note: The per capita consumption for natural gas and electricity are determined by using 2020 data from the CEC for overall county-wide consumption and divided by the 2020 KCAG population retrieved from the United States Census Bureau database (151,090 persons). Individual entries may not add up to exact total amounts as a result of rounding to a single decimal point.

Source: CEC 2021a; CEC 2021b; United States Census Bureau 2022

As shown in Table 4.6-2, the KCAG region accounted for approximately 0.67 percent of the State's electricity consumption and 0.52 percent of the State's natural gas consumption in 2020. The Southern California Edison Company (SCE), Pacific Gas and Electric Company (PG&E), and the Southern California Gas Company (SoCalGas) provide electric and natural gas service to the KCAG region (County of Kings 2022).

## Petroleum

For the purposes of this energy analysis, 2015 petroleum data is provided as it is used to match the KCAG transportation modeling baseline of 2015. More information can be found under Section 4.6.3, *Impact Analysis*, below. Energy consumed by the transportation sector accounts for roughly 39.4 percent of California's energy demand, amounting to approximately 2,820 trillion Btu in 2015 (U.S. EIA 2020). California's transportation sector, including on-road and rail transportation, consumed roughly 531,121,000 bbl of petroleum fuels in 2015 (U.S. EIA 2020). Most gasoline and diesel fuel sold in California for motor vehicles is refined in California to meet state-specific formulations required by the California Air Resources Board (CARB). Major petroleum refineries in California are concentrated in three counties: Contra Costa, Kern, and Los Angeles (CARB 2020). Fuel consumption for the KCAG region can be found in Table 4.6-3 below.

Table 4.6-3 2015 Fuel Consumption in the KCAG Region

Fuel	2015 Annual Fuel Use (million gallons)	2015 Annual Energy Use (million Btu)	2015 Daily Energy Use (million Btu)	2015 Daily Per Capita Energy Use (thousand Btu) <sup>1</sup>
Gasoline	51	6,132,138	16,800.38	112.55
Diesel	9	1,236,429	3,387.48	22.69
<b>Total</b>	<b>60</b>	<b>7,368,567</b>	<b>20,187.86</b>	<b>135.24</b>

Btu = British Thermal Units

Notes: Per capita energy use was calculated by using 2015 fuel use data divided by the 2015 KCAG population retrieved from the California Department of Finance (DOF) (149,275 persons). Btus were calculated by multiplying 2015 Annual Fuel Use by U.S. EIA conversion values for motor gasoline and diesel

Source: CEC 2022a; U.S. EIA 2021b; DOF 2021a

As stated in Section 4.13, *Transportation*, approximately 4,040,152 vehicle miles were traveled each day within the KCAG region in 2015. This equates to approximately 1.4 billion vehicle miles traveled (VMT).

## Alternative Fuels

A variety of alternative fuels are used to reduce petroleum-based fuel demand. The use of these fuels is encouraged through various statewide regulations and plans, such as the Low Carbon Fuel Standard and Senate Bill (SB) 32. Conventional gasoline and diesel may be replaced, depending on the capability of the vehicle with transportation fuels including the following:

- **Hydrogen** is being explored for use in combustion engines and fuel cell electric vehicles. The interest in hydrogen as an alternative transportation fuel stems from its clean-burning qualities, its potential for domestic production, and the fuel cell vehicle's potential for high efficiency, which is two to three times more efficient than gasoline vehicles. There are no hydrogen refueling stations located in the KCAG region (CEC 2022b).
- **Biodiesel** is a renewable alternative fuel that can be manufactured from vegetable oils, animal fats, or recycled restaurant greases. Biodiesel is biodegradable and cleaner-burning than petroleum-based diesel fuel. Biodiesel can run in any diesel engine generally without alterations; however, fueling stations have been slow to make it available. There are no biodiesel refueling stations located in the KCAG region (DOE 2022).
- **Electricity** can be used to power electric and plug-in hybrid electric vehicles directly from the power grid. Electricity used to power vehicles is generally provided by the electricity grid and stored in the vehicle's batteries. Fuel cells are being explored as a way to use electricity generated onboard the vehicle to power electric motors. There are approximately 22 public electrical charging stations in the KCAG region (DOE 2022).

## 4.6.2 Regulatory Setting

### a. Federal Laws, Regulations, and Policies

#### Energy Policy Conservation Act (EPCA) and Corporate Average Fuel Economy (CAFE)

The EPCA of 1975 established nationwide fuel economy standards in order to conserve oil. Pursuant to this Act, the National Highway Traffic and Safety Administration, part of the U.S. Department of

Transportation, is responsible for revising existing fuel economy standards and establishing new vehicle fuel economy standards

The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States.

### **National Energy Policy Act of 1992 (EPACT92)**

EPACT92 calls for programs that promote efficiency and the use of alternative fuels. EPACT92 requires certain federal, state, and local government and private fleets to purchase a percentage of light duty alternative fuel vehicles (AFVs) capable of running on alternative fuels each year. In addition, EPACT92 has financial incentives. 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 provides 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 (EISA) of 2007**

EISA is designed to improve vehicle fuel economy and help reduce U.S. dependence on oil. It expands the production of renewable fuels, reducing dependence on oil, and confronting global climate change. Specifically, it:

- Increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly five-fold increase over current levels; and
- Reduces U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020 – an increase in fuel economy standards of 40 percent

## **b. State Laws, Regulations, and Policies**

### **Warren-Alquist Act**

The Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as CEC, in 1974, to respond to the State's unsustainable growing demand for energy resources. The Act established a State policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures.

### **California Energy Plan**

CEC is responsible for preparing the California Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The current (2008) California Energy Plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient



use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs; and encouragement of urban designs that reduce VMT and accommodate pedestrian and bicycle access.

### **Assembly Bill 2076: Reducing Dependence on Petroleum**

Pursuant to Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000), CEC and CARB prepared and adopted in 2003 a joint agency report, *Reducing California's Petroleum Dependence*. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per-capita VMT. Further, in response to the CEC's 2003 and 2005 *Integrated Energy Policy Reports*, the governor directed CEC to take the lead in developing a long-term plan to increase alternative fuel use.

A performance-based goal of AB 2076 was to reduce petroleum demand to 15 percent below 2003 demand.

### **Integrated Energy Policy Report (IEPR)**

Senate Bill (SB) 1389 (Chapter 568, Statutes of 2002) required CEC to conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The CEC shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety.

CEC adopts an IEPR every two years and an update every other year. The 2021 IEPR, updated in 2022, provides a summary of priority energy issues currently facing the State, outlining strategies and recommendations to further the State's goal of ensuring reliable, affordable, and environmentally responsible energy sources. Energy topics covered in the report include electricity resource and supply plans; electricity and natural gas demand forecasts; natural gas outlooks; transportation energy demand forecasts; energy efficiency savings; integrated resource planning; a barriers study; climate adaptation and resilience; renewable gas; southern California energy reliability; distributed energy resources; strategic transmission investment plans; and existing power plan reliability issues.

### **Senate Bill 1078: California Renewables Portfolio Standard Program.**

SB 1078 (Chapter 516, Statutes of 2002), as expanded under SB 2, 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. SB 2 expanded this law and required procurement from eligible renewable energy resources to 33 percent by 2020. In addition, electricity providers subject to the RPS must increase their renewable share by at least one percent each year. The outcomes of this legislation will impact regional transportation powered by electricity.

### **California Renewables Portfolio Standard**

Early legislation established California's renewables portfolio standard (RPS). The program sets continuously escalating renewable energy procurement requirements for the state's load-serving

entities. Generation must be procured from RPS-certified facilities. SB 2 (1X) of 2011 obligated all California electricity providers to obtain at least 33 percent of their energy from renewable resources by 2020. The California Public Utilities Commission (CPUC) and CEC are jointly responsible for implementing the program.

SB 350 (Chapter 547, Statutes of 2015) requires the following by 2030: an RPS of 50 percent, and a doubling of efficiency for existing buildings. SB 100 (Chapter 312, Statutes of 2018) establishes a new RPS target of 50 percent by 2026, increases the RPS target in 2030 from 50 to 60 percent, and establishes a goal of 100 percent zero-carbon energy sources by 2045.

### **Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015**

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030. This act also requires doubling of the energy efficiency savings in electricity and natural gas for retail customers, through energy efficiency and conservation by December 31, 2030.

### **Assembly Bill 1493: Reduction of Greenhouse Gas Emissions**

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

Implementation of new regulations prescribed by AB 1493 required that the State of California apply for a waiver under the federal Clean Air Act. Although EPA initially denied the waiver in 2008, EPA approved a waiver in June 2009, and in September 2009, CARB approved amendments to its initially adopted regulations to apply the Pavley standards that reduce GHG emissions to new passenger vehicles in model years 2009 through 2016. According to CARB, implementation of the Pavley regulations is expected to reduce fuel consumption while also reducing GHG emissions (CARB 2017a).

### **Assembly Bill 1007: State Alternative Fuels Plan**

AB 1007 (Chapter 371, Statutes of 2005) required CEC to prepare a State plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan (SAF Plan) in partnership with the ARB and in consultation with other State, federal, and local agencies. The SAF Plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The SAF Plan assessed various alternative fuels and developed fuel portfolios to meet California’s goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

### **Bioenergy Action Plan, Executive Order #S-06-06**

Executive Order (EO) S-06-06, April 25, 2006, 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 EO establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel

fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. EO S-06-06 also calls for the State to meet a target for use of biomass electricity. The 2011 Bioenergy Action Plan identifies those barriers and recommends actions to address them so that the State can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan updates the 2011 Plan and provides a more detailed action plan to achieve the following goals:

- Increase environmentally and economically sustainable energy production from organic waste;
- Encourage development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications;
- Create jobs and stimulate economic development, especially in rural regions of the state; and
- Reduce fire danger, improve air and water quality, and reduce waste.

## **Title 24, California Code of Regulations**

California Code of Regulations, Title 24, Part 6, is California's Energy Efficiency Standards for Residential and Non-residential Buildings. Title 24 was established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. The standards are updated on an approximately three-year cycle to allow consideration and possible incorporation of new efficient technologies and methods. In 2019, CEC updated Title 24 standards with more stringent requirements effective January 1, 2020. All buildings for which an application for a building permit is submitted on or after January 1, 2017, must follow the 2016 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The CEC Impact Analysis for California's 2016 Building Energy Efficiency Standards estimates that the 2016 Standards are 28 percent more efficient than the previous 2013 standards for residential buildings and 5 percent more efficient for non-residential buildings. The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary due to local climatologic, geologic, or topographic conditions, provided that these standards exceed those provided in Title 24.

## **California Green Building Standards Code, California Code of Regulations Title 24, Part 11**

California's green building code, referred to as CalGreen, was developed to provide a consistent approach to green building within the State. Having taken effect in January 2019, the most recent version of the Code lays out the minimum requirements for newly constructed residential and nonresidential buildings to reduce GHG emissions through improved efficiency and process improvements. It also includes voluntary tiers to further encourage building practices that improve public health, safety, and general welfare by promoting a more sustainable design.

## c. Local Laws, Regulations, and Policies

### Kings County General Plan

The Kings County 2035 General Plan Resource Conservation Element includes objectives and policies designed to promote efficient use of energy. The following policies are provided within the Resource Conservation Element (Kings County 2010):

- **RC Objective G1.2** Promote the development of sustainable and renewable alternative energy sources, including wind, solar, hydroelectric and biomass energy.
  - **RC Policy G1.2.2** Encourage and support efforts to develop commercial alternative energy sources in lower priority agricultural lands within Kings County, when appropriately sited.
  - **RC Policy G1.2.3** Support the development and use of small-scale alternative energy sources that provide energy for individual homeowners and businesses.
- **RC Objective G1.3 Conserve energy to lower energy costs and improve air quality.**
  - **RC Policy G1.3.1** Encourage developers to be innovative in providing landscaping that modified microclimates, thus reducing energy consumption.
  - **RC Policy G1.3.2** Require new urban development to provide and maintain shade trees and other landscaping along streets and within parking areas to reduce radiation heating. However, solar access for solar panel shall not be blocked.
  - **RC Policy G1.3.3** Participate to the extent feasible, in local and State programs that strive to reduce the consumption of energy.
  - **RC Policy G1.3.** The County shall coordinate with local utility providers to provide public education on energy conservation programs.

### City General Plans

#### *City of Avenal General Plan*

The City of Avenal General Plan 2035 contains policies and actions that intend to ensure energy efficiency in buildings, promote clean energy alternatives, and promote energy efficient design. Policies and actions include (City of Avenal 2018):

- **Policy LU-5.3** Promote energy efficiency retrofits as a part of all home rehabilitation activities .
  - **Action LU-5.3A** Encourage increased use of Energy Upgrade California, PACE programs, and other mechanisms to provide financing for energy efficiency retrofits.
  - **Action LU-5.3B** Identify and implement low-cost strategies to increase energy efficiency in existing homes
  - **Action LU-5.3C** Ensure that the energy efficiency requirements in the California Building Standards Code are enforced as part as all home retrofits, and encourage property owners to exceed minimum standards
  - **Action LU-5.3D** Support the use of green leases to encourage shared responsibility of energy efficient retrofits in leased homes and nonresidential spaces
- **Policy AQ-1.5:** Encourage energy efficient building designs in order to conserve energy and reduce air emissions, including:
  - The use of passive solar design techniques.

- Insulation, appliances, and lighting that meet California minimum standards.
  - Highly insulated doors and windows to minimize drafts.
  - Building siting to maximize natural heating and cooling, and landscaping to aid passive cooling and to protect from winter winds.
  - Appropriate landscaping materials to provide shade in the summer and protection from the weather in winter;
  - Eaves, canopies, awnings, along south and west elevations; and
  - Use of space heaters, air conditioning units, and water heaters that are more efficient than state minimum standards.
- **Policy AQ-1.6:** Encourage new buildings to work toward achieving Zero Net Energy status in advance of state deadlines
    - **Action AQ-1.6A:** Provide information about Zero Net Energy and other emerging green building technologies and practices to project applicants.
  - **Policy AQ-1.7** Encourage new projects to incorporate as many clean alternative energy features as possible to promote energy self-sufficiency. Examples include (but are not limited to): photovoltaic cells, solar thermal electricity systems, small wind turbines, etc.

#### *City of Corcoran General Plan*

The City of Corcoran General Plan 2025 Air Quality Element contains objectives and policies designed to minimize air emissions and potential climate change impacts related to energy consumption. Objectives and policies include (City of Corcoran 2014):

- **AQ Objective 4.A** Increase the use of energy conservation features, renewable sources of energy and low-emission equipment in new and existing development projects within the City of Corcoran
  - **AQ Policy 4.A.1** Initiate and sustain ongoing efforts with local water and energy utilities and developers to establish and implement voluntary incentive based programs to encourage the use of energy efficient designs and equipment in new and existing development projects within the City of Corcoran.
  - **AQ Policy 4.A.2** Initiate and sustain ongoing efforts with agriculture, the building industry, water and energy utilities and the SJVAPCD to promote enhanced energy conservation and sustainable building standards for new construction.
  - **AQ Policy 4.A.3** Work with local water and energy utilities and the building industry to develop or revise City of Corcoran design standards relating to solar orientation of building occupancies, water use, landscaping, reduction in impervious surfaces, parking lot shading and such other measures oriented towards reducing energy demand.
  - **AQ Policy 4.A.4** Actively promote the more efficient location of industries within the City of Corcoran which are labor intensive, utilize cogeneration or renewable sources of energy, support and enhance agricultural activities, and are consistent with other policies of the General Plan
  - **AQ Policy 4.A.5** City staff will proactively work with the Cooperative Agricultural Extension office, USDA, California Energy Commission, local water and energy utilities, the agricultural industry, and other potential partners to seek funding sources and implement programs which reduce water and energy use, reduce air emissions and reduce the creation of GHGs

### *City of Hanford General Plan*

The City of Hanford 2035 General Plan contains goals and policies that promote energy conservation and work to achieve efficient use of energy resources and the use of renewable energy. Goals and policies include (City of Hanford 2017):

- **Goal O2** Conservation of non-renewable energy resources and the maximization of the use of renewable energy resources.
  - **Policy O13** Support and encourage solar generation facilities that support residential, commercial, and industrial uses.
  - **Policy O14** Promote and encourage the use of alternative fuels and renewable energy.
  - **Policy O15** Require that new development incorporate energy-efficient design features for HVAC, lighting systems, and insulation that meet or exceed California Code of Regulations Title 24
  - **Policy O16** Encourage the use of native and drought tolerant shade trees and vines on southern and western exposure buildings walls as an energy conservation technique.
  - **Policy O17** Prepare and implement a comprehensive plan to improve energy efficiency of Hanford's municipal facilities.
  - **Policy O18** Encourage the retrofitting of existing buildings to be energy efficient.

### *City of Lemoore General Plan*

The City of Lemoore 2030 General Plan contains implementing policies that require energy conservation and energy management. Such implementing policies include (City of Lemoore 2008):

- **COS-I-38** Compile and update an inventory of greenhouse gas emissions from City operations and track related solid waste, energy, economic, and environmental data.
- **COS-I-39** Support State efforts to reduce greenhouse gases and emissions through local action that will reduce motor vehicle use, support alternative forms of transportation, require energy conservation in new construction, and energy management in public buildings. *By proposing compact development, mixed use centers, walkable neighborhoods, green building technology, and jobs-housing balance, the City will be helping to implement many of the strategies and programs in the San Joaquin Valley 2007 Ozone Plan.*

## 4.6.3 Impact Analysis

### **a. Methodology and Significance Thresholds**

Appendix G of the *CEQA Guidelines* identifies the following criteria for determining whether a project's impacts would have a significant impact to energy resources. Because the RTP/SCS is a regional plan and not a specific and single construction project, KCAG has chosen to address energy consumption at a regional level rather than project level. This is consistent with the programmatic nature of the EIR. For the purposes of this EIR, implementation of the RTP/SCS would have a significant impact if it would:

1. Result overall in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation:
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency

## b. Project Impacts and Mitigation Measures

The following section discusses potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2022 RTP/SCS. Section 4.6.3.c summarizes the impacts associated with capital improvement projects in the proposed 2022 RTP/SCS. Due to the programmatic nature of the proposed 2022 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement projects and future projects under the land use scenario envisioned by the proposed 2022 RTP/SCS could result in the impacts as described in the following section:

**Threshold 1:** Result in significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation

**Impact E-1** TRANSPORTATION IMPROVEMENT PROJECTS AND THE LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD NOT RESULT IN AN WASTEFUL, INEFFICIENT OR UNNECESSARY CONSUMPTION OF ENERGY RESOURCES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Construction and maintenance of the proposed 2022 RTP/SCS projects would result in short-term consumption of energy resulting from the use of construction equipment and processes. In addition, roadway and transit construction materials, such as asphalt, concrete, surface treatments, steel, rail ballast, as well as building materials, require energy to be produced, and would likely be used in projects that involve new construction or replacement of older materials, as well as construction of future infill and projects envisioned by the proposed 2022 RTP/SCS. The California Green Building Standards Code (CALGreen Code) includes specific requirements related to recycling, construction materials, and energy efficiency standards, which would apply to construction of roadway and transit improvement projects, as well as future infill envisioned by the proposed 2022 RTP/SCS and would help to minimize waste and energy consumption. All construction and maintenance conducted pursuant to the proposed 2022 RTP/SCS, or as a result of improvements made by the proposed 2022 RTP/SCS, would be required to comply with the CALGreen Code. As a result, construction would not result in the wasteful, inefficient, or unnecessary consumption of energy resource or increased reliance on fossil fuels.

SCE, PG&E, and SoCalGas are the utility providers for the KCAG region, and pursuant to CPUC regulations, utilities such as SCE and PG&E must utilize a long-term planning process to plan for increased energy demand in the future with its publication of ten-year integrated resource plans. The most recent SCE plan, titled Integrated Resource Plan of Southern California Edison Company, details projects that aim to ensure compliance with emissions targets identified in SCE's *Pathway 2045* whitepaper, procure renewable energy resources, and improve transmission system access (SCE 2020). The most recent PG&E plan, titled PG&E's 2020 Integrated Resource Plan, details planned projects between 2020 and 2030 that aim to ensure compliance with North American Electric Reliability Corporation standards, improve transmission system access for renewable generation to meet Renewable Portfolio Standard (RPS) goals and targets, improve service reliability for end users and coordinate long-term plans for PG&E's transmission system (PG&E 2020). SoCalGas' Energy Efficiency Business Plan includes strategies for offering efficient energy solutions that contributes to the State energy efficiency policies, including a doubling of energy efficiency by 2030. In 2021, SoCalGas had exceeded energy efficiency goals set by the CPUC and saved its customers approximately 43.7 million net therms worth of natural gas. Renewable energy options

would be incorporated in the proposed 2022 RTP/SCS projects as future transportation improvements and implementation of the land use scenario envisioned by proposed 2022 RTP/SCS rely on the aforementioned service providers which have integrated a reduction in reliance on fossil fuels and energy efficiency as part of their standards and goals.

## Land Use Changes

The proposed 2022 RTP/SCS envisions a regional land use scenario that promotes infill development in existing commercial corridors in combination with increased funding for transit service and improved bicycle and pedestrian infrastructure. Infill projects would reduce VMT and energy use because they would locate people closer to existing goods and services, thereby resulting in shorter vehicle trips and/or promoting walking or biking, and they would locate people closer to existing transportation hubs, thereby encouraging the use of alternative modes of transit (e.g., buses) and resulting in fewer vehicle trips. Operation of future infill projects would increase overall demand for energy beyond existing demand; however, such development would not require unusual, unnecessary, or wasteful amounts of energy. Future infill projects are anticipated to be constructed using standard building practices. These projects would also be subject to the CalGreen Code and Title 24 of the California Energy Code, which set forth specific energy efficiency requirements related to design, construction methods and materials. Therefore, the land use scenario envisioned under the proposed 2022 RTP/SCS would not use energy in a wasteful, inefficient, or unnecessary manner.

## Transportation Improvement Projects

Region-wide VMT and total energy use would increase over time as the result of regional socioeconomic (population and employment) growth. Daily operation of the KCAG region's transportation system uses energy in the form of fuel consumed by propulsion of passenger vehicles (automobiles, vans, and trucks) and transit vehicles (buses and trains). Some highway and roadway improvements included in the proposed 2022 RTP/SCS would increase vehicle capacity, allowing a greater number of vehicles to use County facilities. However, increasing capacity and improving roadways and intersections does not necessarily result in an increase in motor vehicle trips. Increases in motor vehicle trips are primarily a combined function of population growth and employment growth. It should be noted that population growth and an increase in VMT would occur within the region regardless of whether the proposed 2022 RTP/SCS is implemented. As a result, energy consumption as it relates to vehicles would increase beyond the 2015 baseline in any scenario. The 2022 RTP/SCS would help to minimize energy consumption by improving the overall efficiency of the transportation system. In addition, many proposed 2022 RTP/SCS projects (e.g., bikes lanes, investments in electric-powered buses) as well as the continued encouragement of an infill land use pattern would improve the availability of alternative transportation modes, help reduce congestion, and resultant harmful air quality emissions in the County. Generally, the availability of these alternative modes would be expected to reduce overall motor vehicular trips, VMT, and associated energy consumption.

The transportation improvements proposed under the proposed 2022 RTP/SCS would result in a more efficient transit system. The proposed 2022 RTP/SCS also would result in greater availability of public transit and other alternative modes of transportation, such as bicycling, which does not consume fuel energy and also reduces traffic congestion. For instance, there are projects planned by the proposed 2022 RTP/SCS in Hanford which would construct Class II and Class III bicycle paths and pedestrian facilities. Other projects within the proposed 2022 RTP/SCS would involve the



construction of bicycle and pedestrian paths. These specific projects support alternative energy use by providing County residents with non-motorized transportation options. The reduction in overall congestion resulting from these service level improvements would reduce fuel consumption and promote fuel efficiency. As mentioned previously, improvements to State fuel efficiency standards for vehicles and State mandated increases in the supply and use of alternative transportation fuels would further reduce fuel consumption, such as implementation of an electric vehicle charging station plan. In addition, the proposed 2022 RTP/SCS includes other transportation projects which are subject to the State's Alternative Fuels Plan, thereby encouraging alternative energy use.

New transportation facilities that require energy for operation, such as signal lighting, roadway or parking lot lighting, and electronic equipment would increase energy demand. New landscaping irrigation would also increase energy demand through water pumping and treatment. However, energy consumption would not be unnecessary or wasteful, as all lighting, signage and irrigation systems would comply with applicable energy efficiency requirements within the California Building Code. Therefore, the transportation improvements projects included in the proposed 2022 RTP/SCS would not result in inefficient, unnecessary, or wasteful consumption of energy resources. This impact would be less than significant.

## Mitigation Measures

No mitigation necessary.

**Threshold 2:** Conflict with or obstruct a State or local plan for renewable energy or energy efficiency

**Impact E-2** THE PROPOSED 2022 RTP/SCS WOULD NOT CONFLICT WITH OR OBSTRUCT A STATE OR LOCAL PLAN FOR RENEWABLE ENERGY OR ENERGY EFFICIENCY. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

As discussed in Section 4.6.2, *Regulatory Setting*, several State plans, the Kings County General Plan, and city general plans include energy conservation and energy efficiency strategies intended to enable the State and the County to achieve GHG reduction and energy conservation goals. A full discussion of the 2022 RTP/SCS's consistency with GHG reduction plans is included in Section 4.8, *Greenhouse Gas Emissions and Climate Change*.

KCAG monitors regulations related to fuel efficiency standards and alternative fuel vehicles. The proposed 2022 RTP/SCS would not conflict with such regulations (e.g., Energy Policy and Conservation Act and CAFE Standards, EPAct, Energy Independence and Security Act of 2007, AB 1493: Reduction of Greenhouse Gas Emissions, AB 1007: State Alternative Fuels Plan). The 1975 Warren-Alquist Act established the California Energy Resource Conservation and Development Commission, now known as the California Energy Commission (CEC), and established a State policy to reduce wasteful, uneconomical, and unnecessary uses of energy. As explained under Impact E-1, the proposed 2022 RTP/SCS would not result in wasteful, inefficient, or unnecessary use of energy resources. Therefore, the proposed 2022 RTP/SCS is consistent with the Warren-Alquist Act policies.

The 2017 Integrated Energy Policy Report (IEPR) includes a set of strategies to address California's future energy needs. Key topics covered in the report include electricity resource and supply plans; electricity and natural gas demand forecasts; natural gas outlooks; transportation energy demand forecasts; energy efficiency savings; integrated resource planning; a barriers study; climate adaptation and resilience; renewable gas; distributed energy resources; strategic transmission investment plans; and existing power plan reliability issues. The 2022 RTP/SCS would not conflict

with these policies. Refer to Section 4.8, *Greenhouse Gas Emissions and Climate Change*, for a discussion of greenhouse gas emissions reductions related to the proposed 2022 RTP/SCS.

Locally, the proposed 2022 RTP/SCS would be consistent with the Kings County 2035 General Plan and city general plans that include goals and policies that encourage energy conservation and energy efficiency. The proposed 2022 RTP/SCS encourages the use of renewable energy, energy conservation and energy efficiency techniques in all new building design, orientation, construction, and support of alternative transportation and fuels. The proposed 2022 RTP/SCS aims to develop a transportation system that would minimize transportation-related fuel consumption and greenhouse gas emissions and achieves this by implementing numerous strategies to facilitate active transportation, public transportation, carpool, and other means of transportation that would reduce energy consumption. Therefore, the proposed 2022 RTP/SCS would be consistent with State energy efficiency plans, the County's adopted energy conservation and efficiency strategies contained in its 2035 General Plan, and local general plans' energy efficiency policies. As described under Impact E-1, construction, and operation of the proposed 2022 RTP/SCS would be required to comply with relevant provisions of CALGreen and Title 24 of the California Energy Code which would ensure energy efficient features are included in all new buildings developed under the proposed 2022 RTP/SCS land use scenario. Therefore, this impact would be less than significant.

## Mitigation Measures

No mitigation measures are required.

### c. Specific 2022 RTP/SCS Project That May Result in Impacts

The analysis within this section discusses the potential energy related impacts associated with the proposed 2022 RTP/SCS. The transportation projects within the proposed 2022 RTP/SCS are evaluated herein in their entirety and are intended to promote energy efficient, environmentally sound modes of travel and facilities and services rather than cause adverse impacts. However, as described above, the proposed 2022 RTP/SCS would decrease per-household and per-capita energy usage associated with transportation projects in the region. These effects have been found to be less than significant, as described above. Taken separately, even if any specific of the proposed 2022 RTP/SCS projects increases energy use, those impacts would be less than significant. For example, any project that required construction equipment or lighting improvements would increase energy usage, but based on the above, the overall impacts of the totality of the proposed 2022 RTP/SCS are less than significant. Thus, no specific projects are listed in this section related to the adverse impacts on energy in the KCAG region.

## 4.6.4 Cumulative Impacts

The cumulative impact analysis area for energy consists of the KCAG region and adjoining counties. Information regarding these adjoining counties can be found in Section 3.3.3, *Approach for Cumulative Analysis*. Future development in this region that could impact energy use is considered in the analysis. This cumulative extent is used to evaluate potential wasteful or inefficient use of energy resulting in an increase overall per-capita energy consumption or result in increased reliance on fossil fuels and decreased reliance on renewable energy sources or conflict with state or local plans for renewable energy or energy efficiency across the cumulative impact area.

Future development in the cumulative impact analysis area would result in short term consumption of energy resulting from construction equipment and use of fuel for vehicles. Operation of future developments would also require energy but would be subject to CalGreen and California Building

Energy Efficiency Standards. Furthermore, pursuant to the California Public Utilities Commission, utility companies must utilize a long-term planning process to plan for increased energy demand in the area and would account for increased development and an increase in population. As such, growth in the cumulative impact analysis area and increased energy demand would be accounted for and would not result in the inefficient, unnecessary, or wasteful use of energy.

Demand for energy resources such as natural gas, electricity, and transportation fuels would increase as the population of the KCAG region grows. However, proposed transportation improvements and land use projects envisioned under the proposed 2022 RTP/SCS would conserve transportation energy by relieving congestion and contributing towards other transportation efficiencies such as transit and active transportation. In addition, renewable energy sources steadily constitute a larger proportion of California's energy supply makeup, resulting in a trend of decreased dependency on fossil fuels and increased dependency on renewable energy sources. As a result, the proposed 2022 RTP/SCS would not contribute to significant cumulative impacts related to wasteful or inefficient use of energy resources and services.

In addition, adherence to existing applicable policies and regulations, such as CalGreen, California Building Energy Efficiency Standards, and the Low Carbon Fuel Standard, would ensure the incorporation of energy efficiency measures in the design and operation of future projects facilitated by the proposed 2022 RTP/SCS and other cumulative projects. As such, the proposed 2022 RTP/SCS would not contribute to a cumulative impact that conflicts with existing renewable energy or energy efficiency plans. As such, the proposed 2022 RTP/SCS impact on wasteful, inefficient, or unnecessary energy use, or conflicts with plans for renewable energy or energy efficiency, would not be cumulatively considerable.

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## 4.7 Geology and Soils

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This section evaluates potential impacts to geology and soils from development facilitated by the proposed 2022 RTP/SCS.

### 4.7.1 Setting

#### **a. Geology and Soils**

The KCAG region is located in the west-central portion of the San Joaquin Valley, the southern section of the Great Valley Geomorphic Province of California. The Central Valley is a large, asymmetrical, northwestwardly-trending structural trough formed between the uplands of the California Coast Ranges to the west and the Sierra Nevada mountain range to the east. The Great Valley is over 400 miles long and approximately 50 to 60 miles wide in the project area. The Valley is subdivided into the Sacramento Valley (north of the Sacramento-San Joaquin Delta) and the San Joaquin Valley (south of the Delta). The southern part of the Valley (including most of the KCAG region) is internally draining, with the distributaries of the Kings and Tule rivers and Cross Creek flowing into the Tulare Lake Bed. North of the Kings River, runoff is directed into the San Joaquin River, which flows northward (Kings County 2010).

The southern San Joaquin Valley is bounded by the low mountains of the Coast Ranges to the west, the San Emigdio and Tehachapi Ranges to the south, and the foothills of the Sierra Nevada to the east. The valley is filled with up to six vertical miles of sediment. The sediments include marine, alluvial, and lacustrine (lake) deposits. The valley is asymmetric with its axis located to the west of the geographic center of the valley. In general, the rivers lie along the axis and the thickest accumulation of sediments is also located along the axis. The geologic structure in the subsurface produced by folding and faulting and the presence of significant petroleum source rocks and suitable reservoir rocks has resulted in the development of numerous oil and gas fields within the southern San Joaquin Valley, including the Kettleman Hills. This sedimentary sequence is underlain in the west by granitic and metamorphic rocks of the Sierran structural block and by mafic and ultramafic bedrock in the east (Kings County 2010).

The alluvial sediments include relatively coarse-grained deposits along river channels and alluvial fans on the margin of the valley. These sediments include the Tulare and San Joaquin Formations, which outcrop along the western margin of the valley and dip toward the center of the valley. These formations are relatively resistant to erosion and form low hills, including the Kettleman Hills in the southwestern KCAG region (Kings County 2010).

During the wetter climatic periods of the Pleistocene Epoch (1.8 million to 11,000 years ago), a series of lakes formed in the western, lowest portions of the valley floor. These lakes included, from north to south, Tulare, Buena Vista, and Kern lakes. During the relatively warmer and drier climatic conditions of the Holocene Epoch (the last 11,000 years), the water levels in the lakes receded and the lakes became seasonal lakes or playas. Fine-grained lake deposits are enduring evidence of the presence of the former lakes. During the late nineteenth and early twentieth centuries, much of the area of the lakes were drained and put into agricultural production. The central portion of the KCAG region occupies a portion of Tulare Lake, the largest of the Pleistocene lakes. The Kings, Kaweah (Cross Creek), and Tule River Canal, as well as other distributaries, terminate within the former Tulare Lake Bed, which partially and temporarily fills during periods of high runoff (Kings County 2010).

Finer-grained lacustrine and flood basin deposits related to the Pleistocene lakes are found in the central portion of the valley. The Tulare, Kern, and Buena Vista Lake Beds were sediment deposition centers located within structural depressions on the valley floor. Tectonic subsidence of the surface is caused by down-warping of the earth's crust. The fine-grained sediments underlying the Tulare Lake Bed are more than 3,600 feet thick. These deposits include the E clay, a diatomaceous clay deposited over a very large area of the San Joaquin Valley. The E clay is considered equivalent to the Corcoran Clay Member of the Tulare Formation. Within the KCAG region the top of the E clay occurs at depths of approximately 250 to 900 feet and the layer is up to 160 feet thick (Kings County 2010).

In addition to the E clay, other younger, less extensive but similar clay deposits have been recognized. These deposits are found along the topographic axis of the valley, including the area of the project site. The C clay is mapped from near the town of Mendota in northern Fresno County to the Kern Lake Bed. This unit ranges in depth from about 100 to 330 feet below the ground surface and is 5 to 45 feet thick. The A clay is the youngest of the clay deposits and is also found underlying the axis of the valley. This unit is typically encountered at depths of less than 10 to 70 feet and is generally 5 to 70 feet thick. The presence of the A clay usually results in perching of groundwater at shallow depths (Kings County 2010).

### *Geomorphology and Topography*

The most prominent topographic feature in the KCAG region is the Tulare Lake Bed. The lake bed is a broad, shallow depression covering the central and southern portions of the County. The land surface within the basin is nearly flat but has been modified significantly by agricultural grading. The lowest elevation of the lake bed is approximately 175 National Geodetic Vertical Datum (NGVD). The northern portion of the County is typified by alluvial fan surfaces formed along the Kings and Tule rivers and Cross Creek. The alluvial fan surface slopes gently toward the Tulare Lake Bed (Kings County 2010).

The Kettleman Hills region, located in the southwestern portion of the county, forms a distinct geomorphic setting. The region of the county is characterized by northwest-southeast trending ridges (i.e., Kettleman Hills, Pyramid Hills, Keryenhagen Hills, and Avenal Ridge) and intervening valleys (i.e., Kettleman Plains and Sunflower Valley). The topography is developed on folded and faulted Pleistocene and Pliocene sedimentary rocks. The ridges rise to a maximum elevation of 3,473 feet NGVD at Table Mountain at the western boundary of the KCAG region. The slopes are moderately steep to steep (Kings County 2010).

The topography of most of the County is relatively flat. However, elevation ranges are at the lowest point at 175 feet above sea level in the Tulare Lake lakebed, and range up to 3,500 feet above sea level in the southwest along the Coast Range (Kings County 2010).

### *Earthquake Ground-Shaking and Fault Rupture*

Faults generally produce damage in two ways: ground-shaking and surface rupture. Seismically induced ground-shaking covers a wide area and is greatly influenced by the distance of a site to the seismic source, soil conditions, and depth to groundwater. Surface rupture is limited to very near the fault. The KCAG region has no known major fault systems within its boundaries. The greatest potential for seismic activity in the KCAG region is posed by the San Andreas Fault, which is located approximately four miles west of the KCAG region boundary. Another large fault that may pose potential geologic hazards for the KCAG region is the White Wolf fault located south of the KCAG region near Arvin and Bakersfield (Kings County 2010).

Over the past 200 years, the KCAG region has not experienced any damaging earthquake equal to or greater than a Mercalli Index (M) 6.0. However, several more significant earthquakes have occurred within close vicinity of the KCAG region's boundary. The largest and most forceful earthquake was the 1857 Fort Tejon earthquake (M 7.9) with an epicenter that occurred in Monterey County approximately seven miles west of the KCAG region boundary in the community of Parkfield. During this event the San Andreas Fault ruptured for a length of approximately 225 miles between Parkfield and San Bernardino. The largest earthquake in Southern California since the Fort Tejon earthquake was the 1952 Kern County earthquake (M 7.5) which occurred on the White Wolf fault. The epicenter for this quake occurred approximately 38 miles southeast of the KCAG region boundary near Bakersfield and produced ground shaking felt over 200 miles away. The most recent earthquakes to affect the KCAG region occurred during the 1980's. The 1982 New Idria earthquake (M 5.4) and the 1983 Coalinga (M6.5) earthquakes both occurred approximately 20 miles from the western border of the KCAG region. The 1985 Kettleman Hills earthquake (M 6.1) followed these two earthquakes with an epicenter located four miles west of the KCAG region border just north of the City of Avenal. All three of these earthquake incidents produced low-level ground shaking and low local magnitude in the KCAG region (Kings County 2010).

As opposed to surface rupture which effects are generally limited to the trace of the fault, ground-shaking propagates into surrounding areas during an earthquake and can affect an area around the fault. Although the intensity of the ground-shaking is depending on the distance from the source of the earthquake/fault, ground shaking can be amplified locally, or prolonged depending on the types of substrate/materials. The potential for ground shaking is discussed in terms of the percent probability of exceeding peak ground acceleration (percent g) in the next 50 years. It varies from 20-30 percent g in the northeast third of the County, including the cities of Hanford, Lemoore, Corcoran, and the Santa Rosa Rancheria to 30-40 percent g in the central part of the County, which is primarily agricultural. Earthquake hazards are more severe in the southwest third of the County and the City of Avenal. The potential for ground shaking in this area ranges from 40-50 percent g to 70-80 percent g at the southwestern KCAG boundary (Kings County 2010).

The primary hazard due to seismic activity in the KCAG region would come from ground shaking. The potential for extensive surface rupture is considered to be minimal, since the KCAG region does not contain a major fault system. Minor surface rupture could be expected in areas of minor faulting, primarily in the southwestern portion of the KCAG region along the Kettleman Hills or west of the KCAG region along the Nunez Fault located near Coalinga (Kings County 2010). Research coordinated by the Southern California Earthquake Center in 1995 concluded that there is an 80 to 90 percent probability that an earthquake of M 7.0 or greater will hit Southern California along the San Andreas fault before 2024 (CA-SHMP 2013). The southern San Andreas Fault section near the Fort Tejon earthquake of 1857, is considered a likely location for an earthquake within the next few decades. Earthquake recurrence on the southern San Andreas Fault varies greatly from under 20 years at Parkfield to more than 200 years in other sections (Kings County 2010).

Additional technical data is also derived from the 1974 Five County Seismic Safety Element, which is still valid and is the basis for the Kings County Seismic Zone Description (Table 4.7-1) (Kings County 2010). Seismic Zones are categorized by the intensity of ground motion that could be reasonably anticipated if an earthquake affected the KCAG region. The KCAG region is divided between two Seismic Zone groups that correspond to general groundshaking characteristics. Valley Zones (V1 through V4) represents areas along the valley floor with highest near-surface amplification identified along the west and decreasing towards the east due to the damping of thick alluvial sediments. Coast Ranges Zones (C1 and C2) represent the Kettleman Hills and Coast Range areas

that are closest to the San Andreas Fault and anticipated to experience moderately high ground shaking levels. The safest zones correspond generally to the areas of greatest population within the County. Zone V1, the area of least expected seismic shaking, encompasses the cities of Hanford and Lemoore, communities of Armona, Home Garden and Stratford, and Naval Air Station Lemoore residential areas and Santa Rosa Rancheria. Zone V2 contains the City of Corcoran. Kettleman City and Avenal, however, are located within Zone V4 and adjacent to more critical Coast Range Zones (Kings County 2010).

**Table 4.7-1 Seismic Zone Description**

Seismic Zone	Generalized Geologic Formations	Amplification of Shaking
*V1	Moderately thick section of marine and continental sedimentary deposits overlying the granitic basement complex	Amplification of shaking that would affect low to medium- rise structures is relatively high but the distance to either of the fault systems that are expected sources of the shaking is sufficiently great that the effect should be minimal
*V2	Moderately thick section of marine and continental sedimentary deposits overlying the granitic basement complex	Amplification of shaking that would affect low to medium- rise structures is low and the distance to the San Andreas fault zone is moderate. The combined effect is that shaking is expected to be minimal
*V3	Thick section of marine and continental sedimentary deposits	Amplification of shaking is reduced by the damping effect of the thick sedimentary section, but the moderate proximity of the San Andreas fault zone results in a moderate increase in expected shaking over that for the east side of the valley
*V4	Thick section of consolidated sedimentary units overlain by thick unconsolidated alluvial fan deposits	Amplification of shaking is reduced by the damping effect of the thick sedimentary section, but its moderately close proximity to the San Andreas fault zone results in the expectation of moderately high shaking characteristics
**C1	Thick section of consolidated sedimentary units, with a high frequency of exposure	Amplification of shaking is low because of the firm nature of the surface in this area. But, because of its close proximity to the San Andreas fault zone, the combination results in moderate to moderately high shaking characteristics
**C2	Moderately thick section of marine sedimentary rock unit with a high frequency of exposure throughout the area, with some metamorphics locally, which are of minor importance	Amplification is low, but the close proximity of the San Andreas fault zone should result in moderately high to high shaking characteristics
* Valley Floor Seismic Zone		
** Coastal Range Seismic Zone Source: 1974 Five County Seismic Safety Element		

### *Subsidence and Liquefaction*

Ground settlement and soil compaction may occur as a result of seismic ground shaking. When unconsolidated valley sediments are saturated with water, water is forced to the ground surface, where it emerges in the form of mud spouts or sand boils. If soil liquefies in this manner (liquefaction), it loses its supporting capacity, which can result in the minor displacement to total collapse of structures. These types of unconsolidated sediments represent the poorest kind of soil condition for resisting seismic shock waves. The potential for liquefaction is recognized throughout the San Joaquin Valley where unconsolidated sediments and a high water table coincide. However,



the risk and danger of liquefaction and subsidence occurring within the county is considered to be minimal (Kings County 2010).

Most of the KCAG region east of Interstate 5 (I-5) and west of the State Route (SR) 43 is mapped as having liquefaction potential according to the Five County Seismic Safety Element. The Five County Seismic Safety Element shows various seismic zones and areas where landslides, subsidence, or liquefaction could possibly occur. As detailed, unincorporated land between Corcoran and Kettleman City, as well as some land west of Kettleman City, including Avenal, would likely experience the greatest ground shaking.

### *Landslides*

Landslides may be triggered by both natural and human induced changes in the environment resulting in slope instability. Precipitation, topography, and geology affect landslides and debris flows. Human activities, such as mining, road construction, and changes to surface drainage areas, also affect the landslide potential. Landslides often accompany other natural hazard events, such as floods, wildfires, or earthquakes. They can also occur slowly or very suddenly and damage and destroy structures, roads, utilities, and forested areas and cause injuries and death. Although landslides are primarily associated with steep slopes (i.e., greater than 15 percent), they may also occur in areas of generally low relief and as cut-and-fill failures, river bluff failures, lateral spreading landslides, collapse of mine waste piles, and failures associated with quarries and open-pit mines (Kings County 2010).

The CGS Susceptibility to Deep-Seated Landslides in California (CGS 2011) and the USGS Landslide Hazards map were reviewed to identify possible landslide hazards. Areas having high landslide susceptibility are located southwest of I-5 in the southwestern portion of the County, and include the Kettleman Hills and land within the Coast Ranges. The majority of the remainder of the County, east of I-5, is mapped with no landslide susceptibility and limited areas with low susceptibility.

### *Expansive Soils*

Soils with relatively high clay content are expansive due to the capacity of clay minerals to take in water and swell (expand) to greater volumes. Collapsible and compressible soils occur in areas where fine-grained soils have accumulated relatively rapidly and not been buried with associated consolidation. Soils with a high shrink-swell potential exist along alluvial fans that border the northeastern and southeastern margins of the Tulare Lake Basin, on alluvial deposits within the Tulare Lake Basin, and on alluvium along the southwestern uplands of the County, including Kettleman Hills, Pyramid Hills, Keryenhagen Hills, and the Diablo Range (Kings County 2010).

## **b. Paleontological Resources**

Paleontological resources, or fossils, are the evidence of once-living organisms preserved in the rock record. They include both the fossilized remains of ancient plants and animals and the traces thereof (e.g., trackways, imprints, burrows, etc.). Paleontological resources are not found in “soil” but are contained within the geologic deposits or bedrock that underlies the soil layer. Typically, fossils are greater than 5,000 years old (i.e., older than middle Holocene in age) and are typically preserved in sedimentary rocks. Although rare, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks under certain conditions (Society of Vertebrate Paleontology [SVP] 2010). Fossils occur in a non-continuous and often unpredictable distribution within some sedimentary units, and the potential for fossils to occur within sedimentary units depends on several factors. It is possible to evaluate the potential for geologic units to contain scientifically

important paleontological resources, and therefore evaluate the potential for impacts to those resources and provide mitigation for paleontological resources if they are discovered during construction of a development project.

Paleontological sensitivity refers to the potential for a geologic unit to produce scientifically significant fossils. Direct impacts to paleontological resources occur when earthwork activities, such as grading or trenching, cut into the geologic deposits within which fossils are buried and physically destroy the fossils. Since fossils are the remains of prehistoric animal and plant life, they are considered to be nonrenewable. Such impacts have the potential to be significant and, under the *CEQA Guidelines*, may require mitigation. Sensitivity is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey.

The discovery of a vertebrate fossil locality is of greater significance than that of an invertebrate fossil locality, especially if it contains a microvertebrate assemblage. The recognition of new vertebrate fossil locations could provide important information on the geographical range of the taxa, their radiometric age, evolutionary characteristics, depositional environment, and other important scientific research questions. Vertebrate fossils are almost always significant because they occur more rarely than invertebrates or plants. Thus, geological units having the potential to contain vertebrate fossils are considered the most sensitive.

The SVP outlines in its Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (2010) guidelines for categorizing paleontological sensitivity of geologic units within a project area. The SVP (2010) describes sedimentary rock units as having a high, low, undetermined, or no potential for containing significant nonrenewable paleontological resources. This criterion is based on rock units within which vertebrates or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. Significant paleontological resources are fossils or assemblages of fossils, which are unique, unusual, rare, uncommon, diagnostically, stratigraphically, taxonomically, or regionally. The paleontological sensitivity of the project site has been evaluated according to the following SVP (2010) categories:

- **High Potential (Sensitivity).** Rock units from which significant vertebrate or significant invertebrate fossils or significant suites of plant fossils have been recovered are considered to have a high potential for containing significant non-renewable fossiliferous resources. These units include but are not limited to, sedimentary formations and some volcanic formations which contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Areas which contain potentially datable organic remains older than recent, including deposits associated with nests or middens, and areas that may contain new vertebrate deposits, traces, or trackways are also classified as significant. Full-time monitoring is typically recommended during any project-related ground disturbance in geologic units with high sensitivity.
- **Low Potential (Sensitivity).** Sedimentary rock units that are potentially fossiliferous but have not yielded fossils in the past or contain common and/or widespread invertebrate fossils of well documented and understood taphonomic (processes affecting an organism following death, burial, and removal from the ground), phylogenetic species (evolutionary relationships among

organisms), and habitat ecology. Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils prior to the start of construction. Generally, these units will be poorly represented by specimens in institutional collections and will not require protection or salvage operations.

- **Undetermined Potential (Sensitivity).** Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials. Field surveys by a qualified vertebrate paleontologist to specifically determine the potentials of the rock units are required before programs of impact mitigation for such areas may be developed.
- **No Potential.** Rock units of metamorphic or igneous origin are commonly classified as having no potential for containing significant paleontological resources

#### 4.7.2 Regulatory Setting

##### a. Federal Laws, Regulations, and Policies

###### **Earthquake Hazards Reduction Act**

The Earthquake Hazards Reduction Act was enacted in 1977 to “reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program.” To accomplish this, the act established the National Earthquake Hazard Reduction Program (NEHRP). NEHRP’s mission includes improved understanding and characterization of hazards and vulnerabilities, improvement of building codes and land use practices, risk reduction through post-earthquake investigations and education, development and improvement of design and construction techniques, improvement of mitigation capacity, development of alternative performance objectives to advance functional recovery, and accelerated application of research results. The NEHRP designates the National Institute of Standards and Technology as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under the NEHRP help inform and guide planning and building code requirements, such as emergency preparedness responsibilities and seismic code standards.

###### **Disaster Recovery Reform Act of 2018**

The Disaster Recovery Reform Act was signed into law in 2018. The reforms acknowledge the shared responsibility for disaster response and recovery, are intended to reduce the complexity of the Federal Emergency Management Agency (FEMA), and build the nation’s capacity for the next catastrophic event. The law, which amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act, contains 56 distinct provisions that require FEMA policy or regulation changes for full implementation. Examples of the provisions include expanding eligible hazard mitigation activities including the replacement of electric utility poles resilient to extreme winds (Section 1204) and earthquake early warning technology (Section 1233).

###### **Archaeological and Paleontological Salvage (23 USC 305)**

Statute 23 United States Code (USC) 305 amends the Antiquities Act of 1906. Specifically, it states:

“Funds authorized to be appropriated to carry out this title to the extent approved as necessary, by the highway department of any State, may be used for archaeological and paleontological salvage in that state in compliance with the Act entitled "An Act for the preservation of American Antiquities," approved June 8, 1906 (Public Law [PL] 59-209; 16 USC 431-433), and State laws where applicable.”

This statute allows funding for mitigation of paleontological resources recovered pursuant to federal aid highway projects, provided that "excavated objects and information are to be used for public purposes without private gain to any individual or organization" (Federal Register [FR] 46(19): 9570).

### **Paleontological Preservation Act**

The Paleontological Resources Preservation Act (PRPA) was signed into law in 2009. It directs the Department of Agriculture and the Department of the Interior to implement comprehensive paleontological resource management programs on federal lands. The PRPA protects scientifically significant fossils on federal lands and provides a permitting system where researchers can collect and study scientifically significant fossils which will remain in the public trust. The act also allows for the collection of common plant and invertebrate fossils for personal, non-commercial use on federal lands. The PRPA requires the Secretaries of the Interior and Agriculture to manage and protect paleontological resources on federal land. The PRPA furthers the protection of fossils on federal lands by criminalizing the unauthorized removal of fossils.

## **b. State Laws, Regulations, and Policies**

### **Alquist-Priolo Earthquake Fault Zoning Act**

The Alquist-Priolo Earthquake Fault Zoning Act, California’s Alquist-Priolo Act (PRC 2621 et seq.), 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. Under the Alquist-Priolo Act, faults are zoned, and construction along or across them is strictly regulated if they are “sufficiently active” and “well-defined.” A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined as within the last 11,000 years). A fault is considered well-defined if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface, using standard professional techniques, criteria and judgment.

### **Seismic Hazards Mapping Act of 1990**

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (PRC 2690–2699.6) is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground-shaking, liquefaction and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act: the State is charged with identifying and mapping areas at risk of strong ground-shaking, liquefaction, landslides and other corollary hazards, and cities and counties are required to regulate development within mapped Seismic Hazard Zones.

## **California Building Standards Code**

The California Building Code (CBC) appear in the CCR as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The 2019 CBC is based on the 2018 IBC published by the International Code Council. In addition, the CBC contains necessary California amendments, which are based on reference standards obtained from various technical committees and organizations, such as the American Society of Civil Engineers (ASCE), the American Institute of Steel Construction, and the American Concrete Institute. ASCE Minimum Design Standard 7-05 (ASCE 7-05) provides requirements for general structural design and includes means for determining earthquake loads, as well as other loads (e.g., flood, snow, wind), for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements consider the occupancy category of the structure, site class, soil classifications, and various seismic coefficients that are used to determine a Seismic Design Category (SDC) for a project as described in Chapter 16 of the CBC. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E (very high seismic vulnerability and near a major fault) and SDC F (hospitals, police stations, emergency control centers in areas near major active faults). Design specifications are then determined according to the SDC in accordance with Chapter 16 of the CBC. Chapter 16, Section 1613 provides earthquake loading specifications for design and construction to resist the effects of earthquake motions in accordance with ASCE 7-05.

Chapter 18 of the CBC covers the requirements of geotechnical investigations (Section 1803); excavation, grading, and fills (Section 1804); load-bearing of soils (1806); foundations (Section 1808); shallow foundations (Section 1809); and deep foundations (Section 1810). Chapter 18 also describes analysis of expansive soils and the determination of the depth to groundwater table. For SDC D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses mitigation measures to be considered in structural design, which may include ground stabilization, selection of appropriate foundation type and depths, selection of appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

Specifically, Section 1803.7 of the CBC requires geologic and earthquake engineering reports for all proposed construction. The purpose of the engineering report is to identify geologic and seismic conditions that may require mitigation. The reports, which are prepared by a California certified engineering geologist in consultation with a California-registered geotechnical engineer, assess the nature of the site and potential for earthquake damage based on appropriate investigations of the regional and site geology, project foundation conditions, and potential seismic shaking at the site. These reports must consider the most recent CGS Note 48 (Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services

Buildings), CGS Special Publication 42: Fault Rupture Hazard Zones in California (for project sites proposed within an Alquist-Priolo Zone), and the most recent version of CGS Special Publication 117: Guidelines for Evaluating and Mitigating Seismic Hazard in California (for project sites proposed within a Seismic Hazard Zone). All conclusions must be fully supported by satisfactory data and analysis.

The geotechnical report required by Section 1803 provides completed evaluations of the foundation conditions of the site and the potential geologic and seismic hazards. It includes site specific evaluations of design criteria related to the nature and extent of foundation materials, groundwater conditions, liquefaction potential, and settlement potential and slope stability, as well as the results of the analysis of problem areas identified in the engineering geologic report. The geotechnical report incorporates estimates of the characteristics of site ground motion provided in the engineering geologic report. The geotechnical report must be prepared by a geotechnical engineer registered in the State of California with the advice of the certified engineering geologist and other technical experts, as necessary. The approved engineering geologic report is submitted with, or as part of, the geotechnical report. Local jurisdictions in the KCAG region typically regulate construction activities through a process that requires the preparation of a site-specific geotechnical investigation, consistent with Title 24, Part 2, Chapter 18 of the CBC.

### **California Construction General Permit Order 2009-0009-DWQ**

The California Construction General Permit Order 2009-0009-DWQ (Order) requires projects that would disturb one or more acres of soil, or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, to obtain coverage under the Order. As such, applicable projects are required to implement a Storm Water Pollution Prevention Plan (SWPPP) developed by a certified Qualified SWPPP Developer. The SWPPP includes Best Management Practices (BMPs) for erosion and sediment control.

### **California Department of Transportation Regulations and Seismic Design Criteria**

The California Department of Transportation (Caltrans) has Seismic Design Criteria (SDC) which contain new and currently practiced seismic design and analysis methodologies for the design of new bridges in California. The SDC adopts a performance-based approach specifying minimum levels of structural system performance, component performance, analysis and design practices for ordinary standard bridges. The SDC has been developed with input from the Caltrans Offices of Structure Design, Earthquake Engineering and Design Support and Materials and Foundations. Memo 20-1 outlines the bridge category and classification, seismic performance criteria, seismic design philosophy and approach, seismic demands and capacities on structural components and seismic design practices that collectively comprise Caltrans' seismic design methodology (Caltrans 2010).

### **California Assembly Bill 885 (2000)**

AB 885 (Chapter 781, Statutes of 2000) required SWRCB to draft and implement regulations for siting, installation, operation, and maintenance of on-site wastewater treatment systems. Proposed regulations were issued in 2009 and adopted in June 2012.

## **California Public Resources Code**

Section 5097.5 of the Public Resources Code states:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

Here “public lands” means those owned by, or under the jurisdiction of, the state or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, public agencies are required to comply with Public Resources Code Section 5097.5 for their own activities, including construction and maintenance, and for permit actions (e.g., encroachment permits) undertaken by others.

### **c. Regional and Local Laws, Regulations, and Policies**

#### **Kings County General Plan**

The Health and Safety Element of the Kings County General Plan, adopted in 2010, guides land use planning by providing pertinent data regarding geologic, soil, seismic, fire, and flood hazards. HS Objective A2 would regulate new construction to achieve acceptable levels of risk posted by geologic hazards. Policies within HS Objective A2 require the enforcement of current building codes, prohibiting new construction along known fault zones, and determination of whether geotechnical reports are required for new construction should a project be within a geologic hazard. HS Objective A2 and associated implementation measures would minimize the potential effects of geologic, soil, and seismic hazards through the regulation of new construction (Kings County 2010).

#### **Kings County Multi-Jurisdictional Multi-Hazard Mitigation Plan**

The Kings County region has an adopted Kings County Multi-Jurisdictional Multi-Hazard Mitigation Plan (HMP), which is integrated into the County’s Health and Safety Element of the 2035 Kings County General Plan and integrated into the four incorporated city general plans (Avenal, Corcoran, Hanford, and Lemoore). All jurisdictions also implement the California Building Code that includes measures to protect lives, health, property and public welfare. The health and safety elements are intended to relate land use policies to local safety planning and contain policies for determining acceptable levels of public risk imposed by these land uses, as well as policies for mitigating the effects of natural or manmade catastrophes. The County Health and Safety Element incorporates the HMP and implements the policy recommendations for the County’s area of responsibility as guiding policies in dealing with natural disasters.

To offset the devastating effects of natural hazards, the HMP was developed under the guidance of the Kings County Fire Department/Kings County Emergency Operations Department. The overall purpose of the HMP was to reduce natural hazard vulnerability and make the communities of Kings County more disaster resistant and sustainable. Development of the HMP involved Kings County, the four incorporated cities of Avenal, Corcoran, Hanford, and Lemoore, and several special districts (Kings County 2007).

## **City General Plans and Regulations**

### *City of Avenal General Plan 2035*

The Conservation, Natural Resources, & Recreation Element of the City of Avenal General Plan 2035 addresses paleontological resources with Goal NR-5 “Preserve and protect Avenal’s historic and cultural resources.” (City of Avenal 2018). Policy NR-5.2 implements this goal for paleontological resources. It states:

Require construction to stop immediately if cultural resources, including tribal, archaeological or paleontological resources, human bone or bone of unknown origin are uncovered during grading or other on-site excavation activities, until appropriate mitigation is implemented, including contacting the County Coroner and, if appropriate, the Native American Heritage Commission.

### *City of Corcoran*

The Safety Element of the City of Corcoran 2005-2025 General Plan requires the continuous implementation of seismic safety requirements of the latest adopted building codes as they apply to new construction, remodeling, and retrofitting (City of Corcoran 2014).

### *City of Hanford 2035 General Plan Update*

The City of Hanford 2035 General Plan Update, adopted in 2017, contains Policies H-15-H17 which require the enforcement of building codes, policy development to assist upgrading seismically hazardous buildings, and requires geologic and soils studies to identify potential hazards as part of the approval process for all new development prior to grading activities if a potential for geologic hazards exist (City of Hanford 2017).

### *City of Lemoore General Plan*

The City of Lemoore Safety and Noise Chapter of their General Plan contains Guiding Policy SN-G-1 which focuses to minimize risks of property damage and personal injury posed by geologic and seismic hazards. Implementing Policies SN-I-1 through SN-I-7 require the City of Lemoore to review locate potential geologic hazards for all development, facilitate strictures safety provision for critical-sue structures, implementation of mitigation for masonry buildings that are not reinforced, use of erosion control measures, and ensures utilities are designed to withstand seismic forces (City of Lemoore 2008a).

The Conservation and Open Space Element of the City of Lemoore 2030 General Plan addresses paleontological resources with Implementing Policy COS-I-33 (City of Lemoore 2008b). It states:

Require that new development analyze and avoid potential impacts to archaeological, paleontological, and historic resources by:

- Requiring a records review for development proposed in areas that are considered archaeologically or paleontologically sensitive;
- Determining the potential effects of development and construction on archeological or paleontological resources (as required by CEQA);
- Requiring pre-construction surveys and monitoring during any ground disturbance for all development in areas of historical and archaeological sensitivity; and



- Implementing appropriate measures to avoid the identified impacts, as conditions of project approval.

In the event that historical, archaeological, or paleontological resources are accidentally discovered during construction, grading activity in the immediate area shall cease and materials and their surroundings shall not be altered or collected. A qualified archaeologist or paleontologist must make an immediate evaluation and avoidance measures or appropriate mitigation should be completed, according to CEQA Guidelines. The State Office of Historic Preservation has issued recommendations for the preparation of Archeological Resource Management Reports that will be used as guidelines.

### 4.7.3 Impact Analysis

#### **a. Methodology and Significance Thresholds**

Appendix G of the State CEQA Guidelines identifies the following criteria for determining whether development facilitated by the proposed 2022 RTP/SCS would have a significant impact on geology and soils, namely an analysis of whether or not the 2022 RTP/SCS would:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides;
2. Result in substantial soil erosion or the loss of topsoil;
3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property; and/or
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;
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Impacts related to septic tanks and mineral resources are less than significant and are discussed in Section 4.16, *Less than Significant Environmental Factors*.

Because the location of each of the proposed improvements is different in geologic character, determination of significance is based on an individual study at the time of the project permit application and environmental review. Therefore, for the purposes of this EIR, proposed transportation modifications that are located in areas of moderate to high geologic or soil hazard shall be considered significant.

#### **b. Project Impacts and Mitigation Measures**

This section describes generalized impacts associated with some of the projects anticipated under the 2022 RTP/SCS. Due to the programmatic nature of the 2022 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible. Because the location of each proposed improvement can be different in geologic character, the ultimate determination of impact significance and identification of mitigation

measures will be based on site-specific analysis at the time of the project design and environmental review. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2022 RTP/SCS could result in impacts related to geology and soils as described in the following section.

**Threshold 1:** Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides

**IMPACT GEO-1      PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2022 RTP/SCS WOULD DIRECTLY OR INDIRECTLY CAUSE POTENTIAL SUBSTANTIAL ADVERSE EFFECTS, INCLUDING THE RISK OF LOSS, INJURY, OR DEATH INVOLVING RUPTURE OF A KNOWN EARTHQUAKE FAULT, STRONG SEISMIC GROUND SHAKING, SEISMIC-RELATED GROUND FAILURE, INCLUDING LIQUEFACTION, OR LANDSLIDES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

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Fault rupture can occur along or immediately adjacent to faults during an earthquake. Fault rupture is characterized by ground cracks and displacement which could endanger life and property. Damage is typically limited to areas close to the moving fault.

Ground shaking effects are also the result of an earthquake, but impacts can be widespread. Although a function of earthquake intensity, ground shaking effects can be magnified by the underlying soils and geology, which may amplify shaking at great distances. It is difficult to predict the magnitude of ground shaking following an earthquake, as shaking can vary widely within a relatively small area.

Transportation projects across the KCAG region would not be vulnerable to fault rupture as none of the roadway projects for the proposed 2022 RTP/SCS are located within or near an active fault system. Land use growth envisioned under the proposed 2022 RTP/SCS includes a variety of land uses that could potentially be exposed to hazards as a result of surface fault rupture. The land use growth envisioned under the proposed 2022 RTP/SCS would neither fully nor partially intersect any earthquake faults as growth would be created within cities that are not within or near an active fault system. Any potential structural damage and the exposure of people to the risk of injury or death from structural failure would be minimized by compliance with California Building Code engineering design and construction measures reviewed in the regulatory setting section. Foundations and other structural support features would be designed to resist or absorb damaging forces from strong ground shaking.

Although a function of earthquake intensity, ground-shaking effects can be magnified by the underlying soils and geology, which may amplify shaking at great distances. It is difficult to predict the magnitude of ground-shaking following an earthquake, as shaking can vary widely within a relatively small area. The types of transportation and land use projects proposed under the proposed 2022 RTP/SCS are unlikely to exacerbate seismic activity, fault rupture, or increases in ground shaking due to the nature of the project's effects, including construction, being near or on the ground surface. Footings and pilings that could extend below the surface would be localized to the project site and require geological testing for specific impacts. The potential to directly or indirectly cause adverse impacts due to rupture of a known earthquake fault related to planned transportation improvements from implementation of the proposed 2022 RTP/SCS would be less than significant. The land use growth envisioned under the proposed 2022 RTP/SCS would concentrate growth in cities which would be not located within or near earthquake fault zones and would not include features that would exacerbate ground shaking.

Seismic related ground failure such as liquefaction and landslides may result from an earthquake in the KCAG region. However, the risk of and danger associated with liquefaction occurring within the KCAG region is considered to be minimal. Detailed, site-specific geotechnical engineering investigations would be necessary to evaluate liquefaction potential more accurately in specific project areas. Projects southwest of I-5 in the southwestern portion of the KCAG region would be susceptible to landslides. This would include projects that are within and near Kettleman City. However, projects are proposed to be concentrated within city centers in more transit-oriented areas where landslide occurrence is low. The potential to directly or indirectly cause adverse impacts due to seismic-related liquefaction or landslide from the projected land use development and planned transportation improvements from implementation of the proposed 2022 RTP/SCS would be less than significant.

All projects are required to adhere to design standards described in the CBC and all standard geotechnical investigation, design, grading, and construction practices to avoid or reduce impacts from earthquakes, ground shaking, ground failure, and landslides. These requirements would partially reduce seismic impacts. Moreover, construction within seismic zones as identified by the Alquist-Priolo Act and the Seismic Hazards Mapping Act of 1990 (PRC 2690 -2699.6) is required by the CBC to follow more stringent regulations to withstand fault ruptures and ground shaking effects from seismic activities. The CBC provides standards for various aspects of construction, including but not limited to: excavation, grading and earthwork construction; fills and embankments; expansive soils; foundation investigations; liquefaction potential; and soil strength loss. In accordance with California law and regulation, proponents of specific projects are required to comply with all provisions of the CBC for certain aspects of design and construction.

The types of transportation and land use projects planned under the proposed 2022 RTP/SCS are unlikely to exacerbate seismic activity, fault rupture, or increases in ground shaking due to the nature of the project's effects, including construction, being near or on the ground surface. Footings and pilings that could extend below the surface would be localized to the project site and require geological testing for specific impacts. The proposed 2022 RTP/SCS would not have the potential to exacerbate risks related to seismic activity. Compliance with the CBC, including the preparation of a site-specific geotechnical investigation, would reduce the potential for seismic damage to occur as a result of implementation of proposed 2022 RTP/SCS projects. Based on the above analysis, impacts would be less than significant

## **Mitigation Measures**

None required.

<b>Threshold 2:</b> Result in substantial soil erosion or the loss of topsoil
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**IMPACT GEO-2      PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2022 RTP/SCS WOULD NOT RESULT IN SUBSTANTIAL SOIL EROSION OR THE LOSS OF TOPSOIL. IMPACTS WOULD BE LESS THAN SIGNIFICANT**

Typically, erosion and loss of topsoil resulting from grading and development occur on a very small scale and do not present a quantifiable threat to a community. However, erosion and grading also have the potential to create unstable slopes and significant loss of topsoil can occur for projects where excavations require off-site soil disposal. Erosion control can be accomplished on critical slopes being affected by natural agents. Buildout under 2022 RTP/SCS would occur in conformance with Chapter 21 of the Kings County Code of Ordinances for grading and erosion standards, and

other regulatory requirements, such as the CBC. These ordinances would require the appropriate measures to prevent erosion as a result of implementation of transportation and land use projects under 2022 RTP/SCS, thus reducing erosion impacts.

Construction and buildout under the proposed 2022 RTP/SCS would occur in conformance with regulatory requirements and local ordinances pertaining to erosion control. In addition, the Regional Water Quality Control Board would require a project-specific SWPPP to be prepared for each project that disturbs an area one acre or larger. The SWPPPs would include project-specific BMPs designed to control drainage and erosion. Project BMPs to control erosion may include, but would not be limited to: silt fencing, fiber rolls, slope stabilization and sand bags. These BMPs would be required as part of each individual project permit and would minimize impacts related to soil erosion and loss of topsoil as a result of construction or grading.

Adherence to the applicable ordinance codes and other local, State and regulatory programs, as discussed above, would ensure that project-specific erosion and topsoil loss would be minimized. Because such effects would not be substantial, impacts related to erosion and loss of topsoil would be less than significant.

### **Mitigation Measures**

No mitigation is required.

<b>Threshold 3:</b>	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
<b>Threshold 4:</b>	Be located on expansive soil, creating substantial direct or indirect risks to life or property

#### **Impact GEO-1 IMPLEMENTATION OF TRANSPORTATION IMPROVEMENTS AND FUTURE PROJECTS INCLUDED IN THE LAND USE SCENARIO ENVISIONED IN THE PROPOSED 2022 RTP/SCS COULD BE LOCATED ON POTENTIALLY UNSTABLE SOILS, IN AREAS OF LATERAL SPREADING, SUBSIDENCE, OR HIGH LIQUEFACTION POTENTIAL, OR AREAS OF EXPANSIVE SOIL. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

Implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2022 RTP/SCS could be prone to slope instability, liquefaction, and other soil-related hazards.

Ground failure, including liquefaction, lateral spreading, and subsidence could occur in the KCAG region depending on the underlying conditions including ground water level, relative size of soil particles, and density of subsurface materials within 50 feet of ground surface. Damage from ground failure associated with liquefaction, lateral spreading, and subsidence could be high in buildings with foundations not properly constructed for such hazards. Areas that are exposed to liquefaction hazard may also have lateral spreading or differential settlement and subsidence concerns. Areas not at risk of liquefaction do not have lateral spreading potential. Ground failure associated with liquefaction would result in damage to transportation projects if not engineered appropriately. The southwestern foothill areas of the KCAG region are more likely to experience landslides than the flat Valley floor. Susceptible areas include areas where fractured and steep slopes are present or where inadequate ground cover accelerates erosion. However, no proposed 2022 RTP/SCS transportation projects would include features or be improperly engineered such that they exacerbate the risk of a landslide.

As previously discussed, the risk and danger of liquefaction and subsidence occurring within the County is considered to be minimal (Kings County 2010). However, there is potential for liquefaction and subsidence to occur. Impacts related to these types of geological hazards are site specific.

New land use development and transportation projects constructed on expansive soils could be subject to damage or could become unstable when the underlying soil shrinks or swells. Soils with high clay content have the highest potential for shrink-swell. Within the KCAG region, expansive soils are more common along alluvial fans that border the northeastern and southeastern margins of the Tulare lake Basin, on alluvial deposits within the Tulare Lake Basin, and on alluvium along the southwestern uplands of the County, including Kettleman Hills, Pyramid Hills, Keryenhagen Hills, and the Diablo Range (Kings County 2010). Any proposed 2022 RTP/SCS projects located on expansive soils, this can be remediated, as structures and foundations would be engineered to withstand the forces of expansive soil to ensure compliance with the California Building Code (CBC).

The preparation of site-specific geotechnical studies prepared in accordance with requirements as set forth by the CBC, the Seismic Hazards Mapping Act, and standard industry practices would reduce impacts related to slope instability, liquefaction, soil expansion, and ground failure. Future projects under the proposed 2022 RTP/SCS would also be required to comply with local general plans and local building code requirements that contain seismic safety policies to resist ground failure through construction techniques, including structural design. Potential structural damage and the exposure of people to the risk of injury or death from structural failure would be minimized by compliance with California Building Code engineering design and construction measures. Foundations and other structural support features would be designed to resist or absorb damaging forces from expansive soils, liquefaction, or landslides. Land use and transportation projects implementing the proposed 2022 RTP/SCS would be required to comply with the CBC, and local building standards including the implementation of geotechnical practices such as ground treatments or replacing existing soils with engineered fill. Transportation projects that would involve the construction or improvements of bridge or overpass design would also be required to comply with Caltrans seismic design criteria which would reduce potential ground failure hazards. The proposed 2022 RTP/SCS would not have the potential to exacerbate risks related to ground failure.

Based on the above analysis, impacts related to ground failure hazards, including liquefaction, lateral spreading, and subsidence, and impacts related to expansive soils, would be less than significant with compliance with the CBC, local general plans and building standards, and Caltrans design criteria for transportation projects where applicable.

## **Mitigation Measures**

No mitigation is required.

<b>Threshold 6:</b> Directly or indirectly destroy a unique paleontological resources or site or unique geologic feature.
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**IMPACT GEO-4 PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2022 RTP/SCS COULD CAUSE A SUBSTANTIAL ADVERSE CHANGE IN OR DISTURB KNOWN AND UNKNOWN PALEONTOLOGICAL RESOURCES AS DEFINED IN CEQA UNDER GUIDELINES SECTION 15064.5. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

Paleontological resources are present throughout the KCAG region (Paleobiology Database 2021a). Therefore, it is possible to encounter known and unknown paleontological resources as a result of implementation of transportation improvement projects pursuant to the proposed 2022 RTP/SCS.

The *State CEQA Guidelines* provide no definition to the term “unique geologic feature.” This phrase also has no common definition. However, a geologic unit could be considered unique if it is a stratotype, contributes to scientific research, or is exclusive to the region.

Many of the land use and transportation projects proposed under the proposed 2022 RTP/SCS consist of minor expansions of existing facilities that would not involve construction in previously undisturbed areas. However, depending on the location and extent of the proposed improvement and ground disturbance, paleontological resources or unique geologic features could be impacted. There are mapped areas with a higher occurrence of paleontological features (Paleobiology Database 2021b), but it should be noted that any project overlying a geologic unit with high paleontological sensitivity could result in impacts, regardless of location relative to existing development. It is also possible that construction activities associated with some of the proposed roadway widening or extension projects could adversely impact paleontological resources by exposing them to potential vandalism or causing displacement from the original context and integrity. Project-specific analysis would be required as individual projects are proposed.

In addition, the proposed 2022 RTP/SCS contains a future land use scenario that emphasizes infill near transit and within existing urbanized areas, but with development still allowed in more suburban and rural areas. It is possible that paleontological resources or unique geologic features could be located on or near future infill sites, or other development sites. Project grading and excavation for land development may disturb these known or undiscovered resources. Impacts to paleontological resources or unique geologic features would therefore be significant. The following mitigation measures would reduce this impact.

## **Mitigation Measures**

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the proposed 2022 RTP/SCS where applicable for transportation projects that would result in impacts to paleontological resources. Cities and the County can and should implement these measures, where relevant to land use projects implementing the proposed 2022 RTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

### *GEO-4 Paleontological Resources Impact Minimization*

Prior to any ground disturbance, the implementing agency of a 2022 RTP/SCS project involving ground disturbing activities (including grading, trenching, foundation work and other excavations) within intact (previously undisturbed) deposits shall retain a qualified paleontologist, defined as a paleontologist who meets the SVP standards for Qualified Professional Paleontologist (SVP 2010), to

conduct a Paleontological Resources Assessment (PRA). The PRA shall determine the age and paleontological sensitivity of geologic formations underlying the proposed disturbance area, consistent with SVP Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (SVP 2010) guidelines for categorizing paleontological sensitivity of geologic units within a project area. If underlying formations are found to have a high potential (sensitivity) for paleontological resources, the following measures shall apply:

- **Avoidance.** Avoid routes and project designs that would permanently alter unique paleontological and geological features. If avoidance practices cannot be implemented, the following measures shall apply.
- **Paleontological Mitigation and Monitoring Program.** A qualified paleontologist shall prepare a Paleontological Mitigation and Monitoring Program to be implemented during ground disturbance activity. This program shall outline the procedures for construction staff Worker Environmental Awareness Program (WEAP) training, paleontological monitoring extent and duration (i.e., in what locations and at what depths paleontological monitoring shall be required), salvage and preparation of fossils, the final mitigation and monitoring report and paleontological staff qualifications.
- **Paleontological Worker Environmental Awareness Program (WEAP).** Prior to the start of ground disturbance activity greater than two feet below existing grade, construction personnel shall be informed on the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff.
- **Paleontological Monitoring.** Ground disturbing activity with the potential to disturbed geologic units with high paleontological sensitivity shall be monitored on a full-time basis by a qualified paleontological monitor. Should no fossils be observed during the first 50 percent of such excavations, paleontological monitoring could be reduced to weekly spot-checking under the discretion of the qualified paleontologist. Monitoring shall be conducted by a qualified paleontological monitor, who is defined as an individual who has experience with collection and salvage of paleontological resources.
- **Salvage of Fossils.** If fossils are discovered, the implementing agency shall be notified immediately, and the qualified paleontologist (or paleontological monitor) shall recover them. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case, the paleontologist should have the authority to temporarily direct, divert or halt construction activity to ensure that the fossil(s) can be removed in a safe and timely manner.
- **Preparation and Curation of Recovered Fossils.** Once salvaged, fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition and curated in a scientific institution with a permanent paleontological collection, along with all pertinent field notes, photos, data and maps.
- **Final Paleontological Mitigation and Monitoring Report.** Upon completion of ground disturbing activity (and curation of fossils if necessary) the qualified paleontologist shall prepare a final mitigation and monitoring report outlining the results of the mitigation and monitoring program. The report shall include discussion of the location, duration and methods of the monitoring, stratigraphic sections, any recovered fossils, and the scientific significance of those fossils, and where fossils were curated. The report shall be submitted to the sponsor agency. If the monitoring efforts produced fossils, then a copy of the report shall also be submitted to the designated museum repository.

## IMPLEMENTING AGENCIES AND TIMING

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

## Significance After Mitigation

Implementation of the above mitigation measure would reduce impacts to paleontological resources and unique geologic features by requiring a Paleontological Resources Assessment for any projects under the proposed 2022 RTP/SCS that may impact sensitive paleontological resources. While implementation of Mitigation Measure would reduce impacts to the extent feasible, some project-specific impacts may be unavoidable. Therefore, this impact is significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

### a. Specific 2022 RTP/SCS Projects That May Result in Impacts

Table 4.7-2 identifies proposed 2022 RTP/SCS projects that may result in geology and soils, or minerals impacts as discussed above. Given the large number of projects envisioned across the KCAG region in the proposed 2022 RTP/SCS, the table shows a representative rather than comprehensive list of projects that would generate these impacts. Listed projects are representative of the types of impacts and the types of projects that could be affected in different localities. Additional site-specific analysis would be conducted as the individual projects are proposed in order to determine the project-specific magnitude of impact. Mitigation measures discussed above would apply to these specific projects as well as any other proposed 2022 RTP/SCS projects that would result geology and soils-related impacts.

While some geologic units are known to have higher paleontological sensitivities than others, unknown paleontological resources may be encountered at all proposed 2022 RTP/SCS project sites. While additional site-specific paleontological studies could determine the sensitivity of site-specific underlying geologic units, it is impossible to accurately account for the existence of all paleontological resources prior to ground-disturbing activities. Therefore, due to the potential for any proposed 2022 RTP/SCS project to encounter paleontological resources, Impact GEO-4 is not included within Table 4.7-2.

**Table 4.7-2 Proposed 2022 RTP/SCS Projects That May Result in Impacts**

Agency	Project Location	Project Scope	Impact
Kings County	Kettleman City	Sidewalks along the major roads in the residential area	GEO-1
Kings County	Kettleman City	Multi-use path south of Ninth Street between the residential and highway commercial areas	GEO-1
Avenal	7 <sup>th</sup> Avenue	Reconstruct and improve curb/ramps	GEO-1
Avenal	Central Avenue	Reconstruct and improve curb/ramps	GEO-1
Avenal	Stanislaus Street	Reconstruct and improve curb/ramps	GEO-1
Avenal	Merced Street	Reconstruct and improve curb/ramps	GEO-1



#### 4.7.4 Cumulative Impacts

The cumulative impact analysis area for geology and soils consists of the KCAG region and adjoining counties. Information regarding these adjoining counties can be found in Section 3.1, *Environmental Setting*. Future development in this region that could impact geology and soils is considered in the analysis. This cumulative extent is used to evaluate potential direct and indirect, permanent and temporary impacts to increased exposure to seismic hazards, increased erosion and/or loss of topsoil, the presence of unstable or expansive soils, and the presence of paleontological resource or unique geologic features within the context of the cumulative impact analysis area.

Geology and soils impacts may be related to increased exposure to seismic hazards, increased erosion and/or loss of topsoil, the presence of unstable/expansive soils and alternative waste disposal or septic systems. Individual projects and developments in the cumulative impacts analysis area would be subject to geologic hazards based on site-specific conditions and project design. These effects occur independently of one another and are caused by site specific and project specific characteristics and conditions. In addition, existing regulations, such as the California Building Code, specify mandatory actions that must occur during project development, which would minimize effects from construction and operation of projects related to geology, soils, and seismicity as discussed above. Cumulative impacts related to geology, soils and seismicity would therefore be less than significant.

While projects envisioned under the 2022 RTP/SCS may be subject to seismic hazards, including fault rupture, ground-shaking, liquefaction, and landslides, compliance with applicable requirements would reduce impacts. Future development envisioned under the 2022 RTP/SCS would be required to comply with the California Building Code, Seismic Hazards Mapping Act, Alquist Priolo Act, and local building codes, general plan goals and policies. Furthermore, geology and soils impacts are site specific by nature and would not result in cumulative impacts to the surrounding area. The 2022 RTP/SCS would not have a cumulatively considerable contribution to significant cumulative impacts related to geology, soils and seismicity.

Development and construction in the cumulative impacts analysis area would require excavation and ground disturbance. Excavation and ground disturbance could encounter and damage or destroy subsurface paleontological resources, depending on underlying geologic units and soils. While most paleontological resources and unique geologic features are typically site specific, with impacts that are project specific, others may have regional significance. For example, fossils may capture a particular type of organism that was endemic to a region and therefore have regional significance. Due to the potential for a fossil of regional significance to be uncovered during excavation and ground disturbing activities of projects in the cumulative impact analysis area, cumulative impacts would be significant.

The 2022 RTP/SCS could cause a substantial adverse change in or disturb paleontological resources or unique geologic features and would therefore result in a cumulatively considerable contribution to the significant impact. Mitigation measures outlined above, would reduce paleontological resource impacts associated with 2022 RTP/SCS projects. However, as discussed in Impact GEO-4, it cannot be guaranteed that all future project-level impacts can be mitigated to a less than significant level. As such, the 2022 RTP/SCS contribution to cumulative impacts to paleontological resources would be cumulatively considerable.

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## 4.8 Greenhouse Gas Emissions and Climate Change

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This section evaluates potential impacts related to greenhouse gas (GHG) emissions and climate change facilitated by the proposed 2022 RTP/SCS. Air quality impacts are discussed in Section 4.3, *Air Quality*.

### 4.8.1 Setting

#### a. Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. The term "climate change" is often used interchangeably with the term "global warming," but "climate change" is preferred to "global warming" because it helps convey other changes in addition to rising temperatures. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate changes continuously, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed substantial acceleration in the rate of warming during the past 150 years. The United Nations Intergovernmental Panel on Climate Change (IPCC) expressed that the rise and continued growth of atmospheric carbon dioxide (CO<sub>2</sub>) concentrations is unequivocally due to human activities in the IPCC's Sixth Assessment Report (2021). Human influence has warmed the atmosphere, ocean, and land, which has led the climate to warm at an unprecedented rate in the last 2,000 years. It is estimated that between the period of 1850 through 2019, that a total of 2,390 gigatonnes of anthropogenic CO<sub>2</sub> was emitted. It is likely that anthropogenic activities have increased the global surface temperature by approximately 1.07 degrees Celsius between the years 2010 through 2019 (IPCC 2021). Furthermore, since the late 1700s, estimated concentrations of CO<sub>2</sub>, methane, and nitrous oxide in the atmosphere have increased by over 43 percent, 156 percent, and 17 percent, respectively, primarily due to human activity (United States Environmental Protection Agency [U.S. EPA] 2021a). Emissions resulting from human activities are thereby contributing to an average increase in Earth's temperature.

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs. The gases widely seen as the principal contributors to human-induced climate change include CO<sub>2</sub>, methane (CH<sub>4</sub>), nitrous oxides (N<sub>2</sub>O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere, and natural processes, such as oceanic evaporation, largely determine its atmospheric concentrations.

GHGs are emitted by natural processes and human activities. Of these gases, CO<sub>2</sub> and CH<sub>4</sub> are emitted in the greatest quantities from human activities. Emissions of CO<sub>2</sub> are usually by-products of fossil fuel combustion, and CH<sub>4</sub> results from off-gassing associated with agricultural practices and landfills. Human-made GHGs, many of which have greater heat-absorption potential than CO<sub>2</sub>, include fluorinated gases and SF<sub>6</sub> (U.S. EPA 2021b).

Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO<sub>2</sub>) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as “carbon dioxide equivalent” (CO<sub>2</sub>e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 30, meaning its global warming effect is 30 times greater than CO<sub>2</sub> on a molecule per molecule basis (IPCC 2021).<sup>1</sup>

The accumulation of GHGs in the atmosphere regulates the earth’s temperature. Without the natural heat-trapping effect of GHGs, the earth’s surface would be about 33 degrees Celsius (°C) cooler (World Meteorological Organization 2020). However, since 1750, estimated concentrations of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O in the atmosphere have increased by 36 percent, 148 percent, and 18 percent, respectively, primarily due to human activity (Forster et al. 2007). GHG emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, are believed to have elevated the concentration of these gases in the atmosphere beyond the level of concentrations that occur naturally.

## **b. Greenhouse Gas Emissions Inventories**

### **United States Emissions Inventory**

Total U.S. GHG emissions were 6,558 MMT of CO<sub>2</sub>e in 2019.<sup>2</sup> Emissions decreased by 1.7 percent from 2018 to 2019; since 1990, total U.S. emissions have increased by an average annual rate of 0.06 percent for a total increase of 1.8 percent between 1990 and 2019. The decrease from 2018 to 2019 reflects the combined influences of several long-term trends, including population changes, economic growth, energy market shifts, technological changes such as improvements in energy efficiency, and decrease carbon intensity of energy fuel choices. In 2019, the industrial and transportation end-use sectors accounted for 30 percent and 29 percent, respectively, of nationwide GHG emissions while the commercial and residential end-use sectors accounted for 16 percent and 15 percent of nationwide GHG emissions, respectively, with electricity emissions distributed among the various sectors (U.S. EPA 2021b).

### **California Emissions Inventory**

Based on the California Air Resources Board (CARB) California GHG Inventory for 2000-2019, California produced 418.2 MMT CO<sub>2</sub>e in 2019 (CARB 2021a). The largest single source of GHG in California is transportation, contributing 40 percent of the State’s total GHG emissions. Industrial sources are the second-largest source of the state’s GHG emissions, contributing 21 percent of the State’s GHG emissions (CARB 2021a). The magnitude of California’s total GHG emissions is due in part to its large size and large population compared to other states. However, a factor that reduces California’s per capita fuel use and GHG emissions as compared to other states is its relatively mild climate. In 2016, the State of California achieved its 2020 GHG emission reduction target of reducing emissions to 1990 levels as emissions fell below 431 MMT of CO<sub>2</sub>e (CARB 2021a). The annual 2030 statewide target emissions level is 260 MMT of CO<sub>2</sub>e (CARB 2017).

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<sup>1</sup> The Intergovernmental Panel on Climate Change’s (2021) *Sixth Assessment Report* determined that methane has a GWP of 30. However, the 2017 Climate Change Scoping Plan published by the California Air Resources Board uses a GWP of 25 for methane, consistent with the Intergovernmental Panel on Climate Change’s (2007) *Fourth Assessment Report*. Therefore, this analysis utilizes a GWP of 25.

<sup>2</sup> The 2020 Total U.S. GHG Emissions Inventory is available; however, it is not discussed in this analysis because 2020 emissions were substantially influenced by the COVID-19 pandemic and therefore not characteristic of “normal” conditions.

### c. Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21<sup>st</sup> century than were observed during the 20<sup>th</sup> century. Long-term trends have found that each of the past four decades has been warmer than all the previous decades in the instrumental record and the decade from 2011 through 2020 has been the warmest. The observed global mean surface temperature (GMST) for the decade from 2011 to 2020 was approximately 1.09°C (0.95°C to 1.20°C) higher than the average GMST over the period from 1850 to 1900. Due to past and current activities, anthropogenic GHG emissions are increasing global mean surface temperature at a rate of 0.2°C per decade. In addition to these findings, the latest IPCC report states that “human-induced climate change is already affecting many weather and climate extremes in every region across the globe” (IPCC 2021). These climate change impacts include climate change sea level rise, increased weather extremes, and substantial ice loss in the Arctic over the past three decades.

According to *California’s Fourth Climate Change Assessment*, statewide temperatures from 1986 to 2016 were approximately 0.6 to 1.1°C higher than those recorded from 1901 to 1960. Potential impacts of climate change in California may include reduced water supply from snowpack, sea level rise, more extreme heat days per year, more large forest fires, and more drought years (State of California 2018). In addition to statewide projections, *California’s Fourth Climate Change Assessment* includes regional reports that summarize climate impacts and adaptation solutions for nine regions of the state and regionally specific climate change case studies (State of California 2018). However, while there is growing scientific consensus about the possible effects of climate change at a global and statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. A summary follows of some of the potential effects that could be experienced in California and the KCAG region as a result of climate change.

#### Public Health

Climate change is expected to cause a number of impacts which could negatively affect public health in the KCAG region. As temperatures increase, the Central Valley is set to experience an increased number of extreme heat days, which may lead to increases in the number of heat-related deaths and illnesses (State of California 2018). An increase in the frequency and severity of wildfires may contribute to worsening air quality and cause additional illnesses such as asthma. Higher temperatures could also lead to increased air pollution formation and potentially accelerate the spread of certain diseases and pests. These adverse impacts may also disproportionately burden vulnerable populations.

#### Air Quality

Scientists project that the annual average maximum daily temperatures in California could rise by 2.4 to 3.2°C in the next 50 years and by 3.1 to 4.9°C in the next century (State of California 2018). Higher temperatures are conducive to air pollution formation, and rising temperatures could therefore result in worsened air quality in California. As a result, climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. In addition, as temperatures have increased in recent years, the area burned by wildfires throughout the state has increased, and wildfires have occurred at higher elevations in

the Sierra Nevada Mountains (State of California 2018). If higher temperatures continue to be accompanied by an increase in the incidence and extent of large wildfires, air quality could worsen. Severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state.

## **Water Supply**

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future precipitation trends and water supplies in California. Year-to-year variability in statewide precipitation levels has increased since 1980, meaning that wet and dry precipitation extremes have become more common (California Department of Water Resources 2018). This uncertainty regarding future precipitation trends complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The average early spring snowpack in the western U.S., including the Sierra Nevada Mountains, decreased by about 10 percent during the last century. During the same period, sea level rose over 0.15 meter along the central and southern California coasts (State of California 2018). The Sierra snowpack provides the majority of California's water supply as snow that accumulates during wet winters is released slowly during the dry months of spring and summer. A warmer climate is predicted to reduce the fraction of precipitation that falls as snow and the amount of snowfall at lower elevations, thereby reducing the total snowpack (State of California 2018). Projections indicate that average spring snowpack in the Sierra Nevada and other mountain catchments in central and northern California will decline by approximately 66 percent from its historical average by 2050 (State of California 2018).

## **Agriculture**

California has a roughly \$49 billion annual agricultural industry that produces nearly a third of the country's vegetables and over half of the country's fruits and nuts (California Department of Food and Agriculture 2021). Higher CO<sub>2</sub> levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent, which would increase water demand as hotter conditions lead to the loss of soil moisture. In addition, crop yield could be threatened by water-induced stress and extreme heat waves, and plants may be susceptible to new and changing pest and disease outbreaks (State of California 2018). Temperature increases could also change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (California Climate Change Center 2006).

## **Ecosystems and Wildlife**

Climate change and the potential resultant changes in weather patterns could have ecological effects at the global and local scale. Rising temperatures could have four major impacts on plants and animals: timing of ecological events; geographic distribution and range of species; species composition and the incidence of nonnative species within communities; and ecosystem processes, such as carbon cycling and storage (Parmesan 2006; State of California 2018).

### **4.8.2 Regulatory Setting**

The following regulations address both climate change and GHG emissions.

## **a. Federal Laws, Regulations, and Policies**

### **Clean Air Act**

The U.S. Supreme Court determined in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) that the U.S. EPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act. The U.S. EPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. In 2012, the U.S. EPA issued a Final Rule that established the GHG permitting thresholds that determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

In *Utility Air Regulatory Group v. Environmental Protection Agency* (134 S. Ct. 2427 [2014]), the U.S. Supreme Court held the U.S. EPA may not treat GHGs as an air pollutant for purposes of determining whether a source can be considered a major source required to obtain a PSD or Title V permit. The Court also held that PSD permits otherwise required based on emissions of other pollutants, may continue to require limitations on GHG emissions based on the application of Best Available Control Technology.

### **Corporate Average Fuel Economy Standards**

The Energy Policy and Conservation Act in 1975 established the Corporate Average Fuel Economy Standards (CAFE standards). The CAFE standards are Federal rules established by the National Highway Traffic Safety Administration (NHTSA) that set fuel economy standards for all new passenger cars and light trucks sold in the United States. The CAFE standards become more stringent each year, reaching an estimated 38.3 miles per gallon for the combined industry-wide fleet for model year 2020 (77 Federal Register 62624 et seq. [October 15, 2012, Table I-1]).

In September 2019, U.S. EPA and the National Highway Traffic Safety Administration issued the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule. Part One, “One National Program” (84 FR 51310), revokes a waiver granted by U.S. EPA to the State of California under Section 209 of the CAA to enforce more stringent emission standards for motor vehicles than those required by U.S. EPA for the explicit purpose of GHG reduction, and indirectly, criteria air pollutants and ozone precursor emission reduction. This revocation became effective on November 26, 2019 and could have restricted the ability of CARB to enforce more stringent GHG emission standards for new vehicles and set zero emission vehicle mandates in California. However, on December 21, 2021, the National Highway NHTSA published its Corporate Average Fuel Economy (CAFE) Preemption rule, which finalizes its repeal of 2019’s SAFE Rule Part One.

Part Two addresses CAFE standards for passenger cars and light trucks for model years 2021 to 2026. This rulemaking proposes new CAFE standards for model years 2022 through 2026 and would amend existing CAFE standards for model year 2021. The proposal would retain the model year 2020 standards (specifically, the footprint target curves for passenger cars and light trucks) through model year 2026. The proposal addressing CAFE standards was jointly developed by NHTSA and U.S. EPA, with U.S. EPA simultaneously proposing tailpipe CO<sub>2</sub> standards for the same vehicles covered by the same model years. However, on March 31, 2022, the NHTSA finalized new CAFE Standards for model years 2024 through 2026 that would increase federal CAFE standards compared to the SAFE Rule Part Two (NHTSA 2022).

## **b. State Laws, Regulations, and Policies**

CARB is responsible for the coordination and oversight of state and regional GHG emissions reduction programs in California. There are numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below.

### **California Advanced Clean Cars Program**

Assembly Bill (AB) 1493 (2002), California's Advanced Clean Cars program (referred to as "Pavley"), requires CARB to develop and adopt regulations to achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles." On June 30, 2009, U.S. EPA granted the waiver of Clean Air Act preemption to California for its GHG emission standards for motor vehicles, beginning with the 2009 model year, which allows California to implement more stringent vehicle emission standards than those promulgated by the U.S. EPA. Pavley I regulates model years from 2009 to 2016 and Pavley II, now referred to as "LEV (Low Emission Vehicle) III GHG," regulates model years from 2017 to 2025. The Advanced Clean Cars program coordinates the goals of the LEV, Zero Emissions Vehicles (ZEV), and Clean Fuels Outlet programs, and would provide major reductions in GHG emissions.

### **Executive Order S-3-05**

Executive Order (EO) S-3-05, among other things, established the following GHG emission reduction goals for California: reduction to 2000 levels by 2010; to 1990 levels by 2020; and to 80 percent below 1990 levels by 2050.

### **California Global Warming Solutions Act of 2006 (Assembly Bill 32 and Senate Bill 32)**

The "California Global Warming Solutions Act of 2006," AB 32, outlines California's major legislative initiative for reducing GHG emissions (Chapter 488, Statutes of 2006). AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 target of 431 MMT of CO<sub>2</sub>e. CARB approved the Scoping Plan on December 11, 2008, and the Plan included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among others (CARB 2008). Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since the Plan's approval.

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

On September 8, 2016, the governor signed Senate Bill (SB) 32 into law (Chapter 429, Statutes of 2016), extending the California Global Warming Solutions Act of 2006 by requiring the State to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). SB 32 became effective on January 1, 2017 and codifies the 2030 goal set in



EO B-30-15. On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation, such as SB 1383 (see below). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with statewide per capita goals of six MT of CO<sub>2</sub>e by 2030 and two MT of CO<sub>2</sub>e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, sub-regional, or regional level), but not for specific individual projects because they include all emissions sectors in the state (CARB 2017).

### **Executive Order S-01-07 (Low Carbon Fuel Standard)**

EO S-01-07 (17 California Code of Regulations 95480 et seq.) requires the state to achieve a 10 percent or greater reduction by 2020 in the average fuel carbon intensity for transportation fuels in California regulated by CARB. CARB identified the Low Carbon Fuel Standard (LCFS) as a discrete early action item under AB 32.

In 2018, CARB approved amendments to the LCFS regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

### **Senate Bill 375**

SB 375, signed in August 2008, enhances the State's ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPOs) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO's Regional Transportation Plan (RTP). KCAG was assigned targets of a 5 percent reduction in GHG emissions from per capita passenger vehicles by 2020 and a 13 percent reduction in GHG emissions from per capita passenger vehicles by 2035, relative to 2005 emission levels (CARB 2020b). However, the proposed 2022 RTP/SCS cannot influence the achievement of target year 2020 GHG emissions. Therefore, KCAG will report on meeting 2035 goals with submittal of this SCS for review by CARB.

### **Executive Order B-16-12**

EO B-16-12 orders State entities under the direction of the Governor including CARB, the California Energy Commission, and the California Public Utilities Commission to support the rapid commercialization of zero emission vehicles (ZEVs). It directs these entities to achieve various benchmarks related to zero emission vehicles, including:

- Infrastructure to support up to one million ZEVs by 2020,
- Widespread use of ZEVs for public transportation and freight transport by 2020,
- Over 1.5 million ZEVs on California roads by 2025,
- Annual displacement of at least 1.5 billion gallons of petroleum fuels by 2025, and

- A reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels by 2050.

### **AB 197**

AB 197 of 2016 (Chapter 250, Statutes of 2016) expands CARB membership to include two nonvoting members from the Legislature; creates a Joint Legislative Committee on Climate Change Policies to make recommendations to the Legislature concerning climate change policies; provides for annual reporting of GHG emissions from sectors covered by the AB 32 Scoping Plan as well as evaluations of regulatory requirements and other programs that may affect GHG emissions trends; and specifies that the adoption of GHG emissions reduction rules and regulations shall consider the social costs. In addition, Scoping Plan updates are required to identify the range of potential GHG emissions reductions and the cost-effectiveness for each emissions reduction measure, compliance mechanism and incentive.

### **Senate Bill 1383**

Adopted in September 2016, SB 1383 requires CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants (Chapter 395, Statutes of 2016). SB 1383 requires the strategy to achieve the following reduction targets by 2030:

- Methane – 40 percent below 2013 levels
- Hydrofluorocarbons – 40 percent below 2013 levels
- Anthropogenic black carbon – 50 percent below 2013 levels

SB 1383 also requires the California Department of Resources Recycling and Recovery, in consultation with CARB, to adopt regulations that achieve specified targets for reducing organic waste in landfills. In addition, SB 1383 requires CARB to adopt regulations to be implemented on or after January 1, 2024 specific to the dairy and livestock industry, requiring a 40 percent reduction in methane emissions below 2013 levels by 2030, if certain conditions are met.

### **Senate Bill 100**

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the State's Renewables Portfolio Standard Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

### **Executive Order B-55-18**

On September 10, 2018, the former Governor Brown issued Executive Order (EO) B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction goals established by SB 375, SB 32, SB 1383, and SB 100. The 2022 Scoping Plan Update will assess progress towards achieving the SB 32 target and layout out a path to achieve carbon neutrality (CARB 2022).

## **Executive Order N-19-19**

EO N-19-19 was signed on September 20, 2019 and is intended to require a redoubling of the State's efforts to reduce GHG emissions and mitigate the impacts of climate change while building a sustainable, inclusive economy. This EO includes four main directives which include investment, transportation, state buildings and operations, and zero-emissions vehicles.

## **Senate Bill 391**

The California Transportation Plan Act requires the California Department of Transportation (Caltrans) to prepare a statewide plan that addresses how the state will achieve maximum feasible emissions reductions to attain a statewide reduction of GHG emissions to 1990 levels by 2020 and 80 percent below 1990 levels by 2050. Caltrans prepared the original California Transportation Plan in June 2016 and released an update of the plan in February 2021 (Caltrans 2021).

As EO B-55-18 establishes a goal of achieving economy-wide carbon neutrality in California by 2045, the plan establishes policies and strategies to move toward a carbon-neutral transportation system. However, current trends do not indicate the state will achieve carbon neutrality. The statewide strategy has not been developed to achieve carbon neutrality and regional targets do not require any Metropolitan Planning Organization's RTP to achieve carbon neutrality over the current planning horizon.

## **Executive Order N-79-20**

EO N-79-20 established a statewide goal that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035 and that 100 percent of medium- and heavy-duty vehicles in the state be zero-emission by 2035 for drayage trucks and by 2045 for all operations where feasible.

## **Executive Order N-82-20**

EO N-82-20 established a goal of conserving at least 30 percent of California's lands and coastal waters by 2030 and directed state agencies to create a Natural and Working Lands Climate Smart Strategy to advance the State's carbon neutrality goal and build climate resilience.

## **California Building Standards Code**

The California Code of Regulations (CCR) Title 24 is referred to as the California Building Code, or CBC. It consists of a compilation of several distinct standards and codes related to building construction including plumbing, electrical, interior acoustics, energy efficiency, and handicap accessibility for persons with physical and sensory disabilities. The CBC's energy-efficiency and green building standards are outlined below. The 2019 Title 24 standards are currently in effect. However, at the time of this EIR, the 2022 Title 24 standards have been adopted and will go into effect on January 1, 2023.

### *Part 6 – Building Energy Efficiency Standards/Energy Code*

California Code of Regulations Title 24, Part 6 is the Building Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy demand. The Energy Code is updated periodically to incorporate and consider new energy-efficiency technologies and methodologies as they become available. New construction and major renovations

must demonstrate their compliance with the current Energy Code through submittal and approval of a Title 24 Compliance Report to the local building permit review authority and the California Energy Commission. The 2019 Title 24 standards are the latest iteration of the statewide building energy efficiency standards because they became effective on January 1, 2020. All buildings for which an application for a building permit is submitted on or after January 1, 2020, must follow the 2019 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The CEC Impact Analysis estimates that nonresidential buildings will be 30 percent more energy efficient compared to buildings built consistent with 2016 Building Energy Efficiency Standards, and single-family homes will be 7 percent more energy efficient (CEC 2018). Due to the solar requirement for all new homes, the CEC also estimates that the 2019 standards will cut energy demand from grid electricity in new homes by more than 50 percent (CEC 2018). The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary due to local climatologic, geologic, or topographic conditions, provided that these standards exceed those provided in Title 24.

#### *Part 11 – California Green Building Standards/CALGreen*

The California Green Building Standards Code, referred to as CALGreen, was added to Title 24 as Part 11, first in 2009 as a voluntary code, which then became mandatory effective January 1, 2011 (as part of the 2010 California Building Standards Code). The 2019 CALGreen includes mandatory minimum environmental performance standards for all ground-up new construction of residential and non-residential structures. It also includes voluntary tiers (Tiers I and II) with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory CALGreen standards and may adopt additional amendments for stricter requirements.

The mandatory standards require:

- 20 percent reduction in indoor water use relative to specified baseline levels;<sup>3</sup>
- 65 percent construction/demolition waste diverted from landfills;
- Inspections of energy systems to ensure optimal working efficiency;
- Low-pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particleboards;
- Dedicated circuitry to facilitate installation of electric vehicle charging stations for certain land uses; and
- Installation of electric vehicle charging stations for certain land uses.

The voluntary standards require:

- **Tier I:** stricter energy efficiency requirements, stricter water conservation requirements for specific fixtures, 65 percent reduction in construction waste with third-party verification, 10 percent recycled content for building materials, 20 percent permeable paving, 20 percent cement reduction, and cool/solar reflective roof; and

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<sup>3</sup> Similar to the compliance reporting procedure for demonstrating Energy Code compliance in new buildings and major renovations, compliance with the CALGreen water-reduction requirements must be demonstrated through completion of water use reporting forms. Buildings must demonstrate a 20 percent reduction in indoor water use by either showing a 20 percent reduction in the overall baseline water use as identified in CALGreen or a reduced per-plumbing-fixture water use rate.

- **Tier II:** stricter energy efficiency requirements, stricter water conservation requirements for specific fixtures, 75 percent reduction in construction waste with third-party verification, 15 percent recycled content for building materials, 30 percent permeable paving, 25 percent cement reduction, and cool/solar reflective roof.

## California State Transportation Agency (CalSTA) Climate Action Plan for Transportation Infrastructure (CAPTI)

Adopted in July 2021, the Climate Action Plan for Transportation Infrastructure (CAPTI) details how the State recommends investing billions of discretionary transportation dollars annually to aggressively combat and adapt to climate change while supporting public health, safety and equity (CalSTA 2021). CAPTI builds on EOs signed by Governor Gavin Newsom in 2019 and 2020 targeted at reducing GHG emissions in transportation, which account for more than 40 percent of all emissions, to reach the State's ambitious climate goals. The CAPTI provides investment strategies that focuses on expanding travel options in California and ensuring said investments also prioritize advancing equity and climate priorities in the State.

### c. Local Laws, Regulations, and Policies

The City of Hanford and the City of Avenal have participated in the development of a regional Climate Action Plan (CAP). The 2014 Regional Climate Action Plan sets goals and targets for the reduction of GHG emissions and outlines policies to help achieve those goals. The CAP includes a regional emissions inventory as well as GHG reduction targets and reduction measures to meet those targets. To date, no other jurisdictions in the KCAG region have adopted CAPs or participated in the development of a regional CAP. Baseline and projected business-as-usual GHG emissions from the regional CAP is shown in Table 4.8-1. Projections beyond 2020 are not available. The inventories and projections below include emissions produced by transportation, electricity consumption, fuel combustion, and waste management.

**Table 4.8-1 GHG Emissions Inventories for KCAG Member Jurisdictions**

Jurisdiction	Baseline		Projected Business-as-Usual	
	Year	Emissions (MT of CO <sub>2</sub> e/year)	Year	Emissions (MT of CO <sub>2</sub> e/year)
Countywide	2005	1,046,804	2020	1,187,184

Sources: City of Hanford 2014

The types and quantity of emissions produced in the KCAG region vary among jurisdictional boundaries. However, for most jurisdictions, transportation and energy consumption are responsible for the majority of GHG emissions. To address these emissions, policies included in the regional CAP establish a framework for improved circulation networks and energy conservation. Transportation policies aim to reduce vehicle miles traveled (VMT) by offering more opportunities for alternative transportation modes, such as bicycling and transit use. In addition, the CAP includes policies to promote transit-oriented (TOD) development. In order to reduce emissions produced by energy usage, the cities of Hanford and Avenal have established policies that will facilitate and encourage energy efficiency for both residential and commercial land uses along with programs to improve energy efficiencies in old and new buildings and decrease the use of fossil fuels by providing incentives for use of renewable energy.

### 4.8.3 Impact Analysis

#### a. Methodology and Significance Thresholds

##### Significance Thresholds

Appendix G of the State CEQA Guidelines identifies the following two general criteria for determining whether a project's impacts would have a significant impact related to GHG emissions. Specific criteria under each general criterion have been developed for this EIR.

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. An increase that exceeds the following threshold would be considered a significant impact:
  - a. A net increase in GHG emissions by 2046 compared to existing baseline conditions.
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Any conflict with the following thresholds would be considered a significant impact:
  - a. Conflict with regional SB 375 per capita passenger vehicle CO<sub>2</sub> emission reduction targets of 13 percent by 2035 from 2005 levels;
  - b. Conflict with state's ability to achieve SB 32 GHG reduction target, which aims to reduce statewide emissions to 40 percent below 1990 levels by 2030;
  - c. Conflict with state's ability to achieve EO B-55-18 carbon neutrality goal by 2045 or EO S-3-05 GHG reduction 2050 goal, which aims to reduce statewide emissions to 80 percent below 1990 levels by 2050; or
  - d. Conflict with applicable local GHG emission reduction plans.

The San Joaquin Valley Air Pollution Control District (SJVAPCD) has not adopted GHG significance thresholds that are applicable to evaluating the impacts of the proposed 2022 RTP/SCS in light of the State's post-2020 GHG emission reduction targets. In the absence of applicable SJVAPCD-adopted thresholds, this section uses the project-specific thresholds of significance listed above for each GHG impact criterion in Appendix G.

##### Methodology

###### *Mobile Source Emissions Modeling*

GHG emissions from on-road mobile sources were calculated using the emission factors, fleet mix, and vehicle trip and population estimates from CARB's EMFAC2021 model and Total Daily VMT from KCAG's Regional Travel Demand Model (as further described in Section 4.13, *Transportation*), shown in Table 4.8-2. Detailed calculations are available in Appendix A.

**Table 4.8-2 Proposed 2022 RTP/SCS Total Daily VMT**

Year	Total Daily VMT
2005 Baseline	3,687,000
2020 Baseline	4,095,140
2030 with Proposed 2022 RTP/SCS <sup>1</sup>	4,598,354
2046 with Proposed 2022 RTP/SCS	5,467,919

<sup>1</sup> In the absence of specific VMT data for year 2030, regional VMT for year 2030 was calculated via linear interpolation of VMT for years 2020 and 2035.

Source: Appendix A

EMFAC2021 emission factors are established by CARB and incorporate mobility assumptions (e.g., vehicle fleets, speed, delay times, average trip lengths, time of day and total travel time) and socioeconomic growth projections based on data from sources including the Bureau of Automotive Repair, Caltrans, the California Household Travel Survey, the University of California Riverside College of Engineering-Center for Environmental Research and Technology, the UCLA Anderson Forecast, California Department of Finance, California Board of Equalization, California Energy Commission, and U.S. Department of Energy - Energy Information Administration. EMFAC2021 accounts for updated fleet characterization, vehicle activity profile, and socio-econometric forecasting data; new vehicle testing data for emission rates; updated assumptions on the Advanced Clean Truck regulation and Innovative Clean Transit regulation; and implementation of new regulations and policies including the SAFE Vehicles Rule. Projected emissions from all vehicle types on the KCAG transportation network for the year 2046 under proposed 2022 RTP/SCS conditions were compared with emissions estimated for baseline year 2020.

Total transportation related GHG emissions were evaluated using the Total Daily VMT (see Section 4.3, *Air Quality*) with emissions reported in terms of CO<sub>2</sub>e. For the purposes of evaluating consistency with the SB 32 target, 2005 VMT data from KCAG's Transportation Demand Model was used to back-calculate estimated 1990 emissions levels pursuant to CARB's guidance to assume 1990 emissions levels are roughly equivalent to a 15 percent reduction from baseline 2005 emissions levels (CARB 2008). In addition, for the SB 32 consistency analysis, emissions were calculated in terms of CO<sub>2</sub>, which was used as a proxy to indicate the estimated percent change in GHG emissions levels between 1990 and 2030.

#### *SB 375 Analysis*

To determine whether the proposed 2022 RTP/SCS would allow KCAG to meet its SB 375 reduction targets, per capita CO<sub>2</sub> emissions were calculated by multiplying the emission factors by the VMT from passenger vehicles and dividing by the region's population. For the purposes of this analysis, the year 2005 is used as the baseline year per the requirements of SB 375. In accordance with CARB guidance, EMFAC2014 was utilized for SB 375 modeling for the proposed 2022 RTP/SCS to provide a consistent comparison of per capita CO<sub>2</sub> emissions with the SB 375 targets (CARB 2019). Furthermore, per CARB guidance, off-model adjustment factors related to the SAFE Rule were not applied in the SB375 analysis because EMFAC2014 does not account for the impact of light duty ZEV and GHG emissions standards when used in SB 375 mode (CARB 2020a).

The EMFAC model generates an output of CO<sub>2</sub> emissions, which were used as the overall indicator of GHG emissions associated with passenger vehicles. The CO<sub>2</sub> emissions associated with vehicle

starts are accounted for in the EMFAC model based on the distribution of vehicle starts by vehicle classification, vehicle technology class, and operating mode. EMFAC adds these vehicle starts to the running emissions to compute total on-road mobile source emissions.

*Consistency with SB 32, the 2017 Scoping Plan, EO S-3-05, and EO B-55-18*

Meeting the goals of SB 375 does not guarantee consistency with SB 32 and the 2017 Scoping Plan. To determine that a project would not conflict with the State's ability to achieve the SB 32 target and its associated 2017 Scoping Plan, the proposed 2022 RTP/SCS would need to achieve substantial progress toward achieving the reduction target. Mobile source emissions were calculated to determine regionwide GHG emissions with implementation of the proposed 2022 RTP/SCS. If implementation of the proposed 2022 RTP/SCS would achieve substantial progress toward the emissions reduction targets established by SB 32, then impacts related to consistency with SB 32 would not be considered significant.

At this time, the State Legislature has codified a target of reducing emissions to 40 percent below 1990 emissions levels by 2030 (SB 32) and has developed the 2017 Scoping Plan to demonstrate how the State will achieve the 2030 target and make substantial progress toward the 2050 goal of an 80 percent reduction in 1990 GHG emission levels set by EO S-3-05. In EO B-55-18, which identifies a new goal of carbon neutrality by 2045, CARB has been tasked with including a pathway toward the EO B-55-18 carbon neutrality goal in the next Scoping Plan update. While state and regional regulators of energy and transportation systems, along with the State's Cap-and-Trade program, are designed to be set at limits to achieve most of the reductions needed to attain the State's long-term targets, local governments can do their fair share toward meeting the State's targets by siting and approving projects that accommodate planned population growth and projects that are GHG-efficient. At this time, CARB has not adopted a plan that establishes a pathway to achieving the State's long-term targets under EO S-3-05 and EO B-55-18; therefore, these targets are not used as thresholds of significance in this analysis.

Instead, the Association of Environmental Professionals (AEP) Climate Change Committee recommends that CEQA GHG analyses evaluate project emissions in light of the trajectory of state climate change legislation and assess their "substantial progress" toward achieving long-term reduction targets identified in available plans, legislation, or EOs (AEP 2016). Consistent with AEP Climate Change Committee recommendations, GHG impacts are analyzed using a threshold based on the State's 2030 target, which evaluates whether the project would impede "substantial progress" toward meeting the reduction goals identified in SB 32, EO S-3-05, and EO B-55-18. Because SB 32 is considered an interim target toward meeting the 2045 and 2050 State goals, consistency with SB 32 is considered to be contributing substantial progress toward meeting the State's long-term 2045 and 2050 goals. Avoiding interference with, and making substantial progress toward, these long-term State targets is important because these targets have been set at levels that achieve California's share of international emissions reduction targets that will stabilize global climate change effects and avoid the adverse environmental consequences of climate change (EO B-55-18). Furthermore, these targets will depend on substantial technological innovation in GHG emission reduction measures and changes in legislation and regulations that will need to occur over the next 25 to 30 years as have occurred over the past 16 years to meet the 2020 target set by AB 32. Therefore, if the proposed 2022 RTP/SCS is consistent with the SB 32 target, the proposed 2022 RTP/SCS would also achieve substantial progress toward climate-stabilizing targets set forth by EOs S-3-05 and B-55-18 and would be consistent with these long-term goals.



## b. Project Impacts and Mitigation Measures

The following section discusses impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2022 RTP/SCS. Section 4.8.3(c) summarizes the impacts associated with capital improvement projects in the proposed 2022 RTP/SCS. Due to the programmatic nature of the proposed 2022 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement projects and future projects under the land use scenario envisioned by the proposed 2022 RTP/SCS could result in the impacts as described in the following section.

<b>Threshold 1:</b>	Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. An increase that exceeds the following threshold would be considered a significant impact: <ul style="list-style-type: none"><li>a. A net increase in GHG emissions by 2046 compared to existing baseline conditions</li></ul>
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### **Impact GHG-1 CONSTRUCTION OF THE TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD GENERATE GHG EMISSIONS THAT MAY HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

Construction activities associated with transportation improvement projects and future land use projects envisioned by the proposed 2022 RTP/SCS would generate temporary short-term GHG emissions primarily due to the operation of construction equipment and truck trips. GHG emissions from construction can vary depending on the level of activity, the specific operations taking place, the equipment being operated and other factors. However, because such emissions are dependent on the characteristics of individual development projects, construction-related emissions are speculative at the RTP/SCS level. At the program-level of analysis, it is not feasible to quantify the amount of emissions expected from implementation of the proposed 2022 RTP/SCS. This is due to the variability in the extent of construction based on site conditions throughout the KCAG region and the lack of project details needed to conduct such an analysis. Therefore, this analysis includes a qualitative analysis of potential GHG emissions from construction activity associated with projected land use development and proposed transportation projects.

Construction activity tends to be temporary in nature and would be expected to occur throughout the planning period of the proposed 2022 RTP/SCS. During construction activities, GHG emissions would be emitted from vehicular travel to and from the worksites and the operation of construction equipment such as graders, backhoes, and generators. Site preparation and grading typically generate the greatest amount of emissions due to the intensive use of grading equipment and soil hauling. The level of GHG emissions from the construction of any one project or of all projects combined would be primarily dependent on the particular type, size, quantity, engine type, fuel type, and fuel efficiency of the equipment and the duration of their operation at the construction site or in the region. Construction activities generally result in annual GHG emissions that represent a small proportion of total annual GHG emissions from operational sources such as transportation and land use emissions. For example, the Southern California Association of Governments (SCAG) noted in their 2020-2045 RTP/SCS PEIR that total construction-related emissions typically account for less than 0.3 percent of total GHG emissions for the entire SCAG region (SCAG 2020).

Construction activities generally result in annual GHG emissions that represent a small proportion of total annual GHG emissions, and implementation of the proposed 2022 RTP/SCS would result in an overall net reduction in long-term transportation-related GHG emissions in 2046 when compared to baseline 2020 conditions (refer to Impact GHG-2). Nonetheless, construction activities would still result in GHG emissions exceeding the 2020 baseline, which would constitute a significant impact. Therefore, this analysis identifies the following mitigation measures that should be implemented for individual construction projects to reduce impacts related to GHG emissions.

## **Mitigation Measures**

For all transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measure developed for the proposed 2022 RTP/SCS where applicable for transportation projects generating construction-related GHG emissions. Cities and the County can and should implement this measure, where relevant to land use projects implementing the proposed 2022 RTP/SCS. Project-specific environmental documents may adjust this mitigation measure as necessary to respond to site-specific conditions.

### *GHG-1 Construction GHG Reduction Measures*

The project sponsor shall incorporate the most recent GHG emission reduction measures for off-road construction vehicles during construction. The measures shall be noted on all construction plans, and the implementing agency shall perform periodic site inspections. Current GHG-reducing measures include the following:

- Use of diesel construction equipment meeting CARB's Tier 4 certified engines wherever feasible for off-road heavy-duty diesel engines and comply with the State Off-Road Regulation. Where the use of Tier 4 engines is not feasible, Tier 3 certified engines shall be used; where the use of Tier 3 engines are not feasible, Tier 2 certified engines shall be used;
- Use of on-road heavy-duty trucks that meet CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation;
- Minimizing idling time (e.g., five-minute maximum). Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the five-minute idling limit;
- Use of electric-powered equipment in place of diesel-powered equipment when feasible;
- Use of alternatively fueled or catalyst-equipped diesel construction equipment when feasible, to the extent electric powered equipment is not feasible;
- Substitution of gasoline-powered in place of diesel-powered equipment, when neither electric-powered equipment or alternatively fueled or catalyst-equipped diesel equipment is feasible; and,
- Incentives for construction workers to carpool and/or use electric vehicles to commute to and from the project site.

## **IMPLEMENTING AGENCIES AND TIMING**

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

## Significance After Mitigation

Implementation of Mitigation Measure GHG-1 would reduce short-term construction emissions from individual projects and thus reduce the severity of impacts by requiring best practices for exhaust emissions via readily available, lower-emitting diesel equipment, and/or equipment powered by alternative cleaner fuels (e.g., propane) or electricity, as well as on-road trucks using particulate exhaust filters. Implementation of Mitigation Measures AQ-2(b) and AQ-2(c) would also reduce GHG emissions from the proposed 2022 RTP/SCS. However, these mitigation measure may not be feasible or effective for all projects. Therefore, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

<b>Threshold 1:</b>	Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. An increase that exceeds the following threshold would be considered a significant impact: <ul style="list-style-type: none"><li>a. A net increase in GHG emissions by 2046 compared to existing baseline conditions</li></ul>
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**Impact GHG-2 PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD RESULT IN A NET INCREASE IN GHG EMISSIONS BY 2046 COMPARED TO THE EXISTING BASELINE CONDITIONS AND WOULD THEREFORE HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

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## Transportation-Related Emissions

Table 4.8-3 compares the total transportation-related emissions from all vehicle classes for baseline (2020) conditions and with implementation of the proposed 2022 RTP/SCS. As presented in Table 4.8-3, implementation of the proposed 2022 RTP/SCS would result in a net reduction in per capita emissions of 1.27 MT of CO<sub>2</sub>e per person per year and a net reduction in total emissions of 48,779 MT of CO<sub>2</sub>e per year, compared to baseline (2020) conditions. The estimated reduction in total mobile source emissions is primarily due to stricter fuel efficiency and vehicle emissions standards such as the CAFE standards that will phase in over the planning period as reflected in EMFAC2021 emission factors. In addition, improved circulation networks and multimodal transportation initiatives outlined in the proposed 2022 RTP/SCS would reduce per capita VMT.

Because the proposed 2022 RTP/SCS would result in a net decrease in overall transportation-related emissions in the KCAG region, operational activities under the plan would not generate GHG emissions that may have a significant impact on the environment, and impacts would be less than significant.

**Table 4.8-3 Proposed 2022 RTP/SCS Net Change in Transportation-Related Emissions (2020-2046)**

Scenario	Total Emissions (MT of CO <sub>2</sub> e/year)	Per Capita Emissions (MT of CO <sub>2</sub> e/person/year) <sup>1</sup>
2020 Baseline	915,097	6.00
2046 with Proposed 2022 RTP/SCS	863,817	4.73
<b>Net Change from Baseline</b>	<b>(48,779)</b>	<b>(1.27)</b>
Threshold of Significance	> 0	> 0
Threshold Exceeded?	No	No

( ) denotes a negative number.

MT = metric tons; CO<sub>2</sub>e = carbon dioxide equivalent

<sup>1</sup> The baseline (2020) population of the KCAG region is 152,486 persons, and the future (2046) population is forecast to be 182,661 persons (DOF 2022).

Source: Appendix A

## Other Land Use Development Emissions

In addition to the transportation-related GHG emissions shown in Table 4.8-3, land use projects envisioned by the land use scenario in the proposed 2022 RTP/SCS would also result in GHG emissions due to sources such as electricity and natural gas consumption. Residential, commercial, agricultural, and other land uses would result in GHG emissions; however, data is not available to quantify impacts from such sources. For instance, agricultural machinery and processes have unique emission factors, and GHG emissions must be calculated using precise information regarding specific processes. Furthermore, emissions from land use projects cannot be feasibly quantified at this time because details about future land use projects and their timing are unknown at this time. Therefore, because future land use projects would represent new sources of GHG emissions, it can be conservatively estimated that total GHG emissions from the land use scenario envisioned by the proposed 2022 RTP/SCS would increase over the planning period. Although per capita emissions associated with electricity and natural gas consumption, water and wastewater conveyance and treatment, and solid waste disposal are anticipated to decline, primarily as a result of increasingly stringent iterations of State building code standards (specifically, the California Energy Code and the California Green Building Standards Code), total emissions may increase due to population growth and future land use projects. As a result, impacts of land use projects implementing the proposed 2022 RTP/SCS would be significant.

## Mitigation Measures

Cities and the County can and should implement the following mitigation measure, where relevant to land use projects implementing the proposed 2022 RTP/SCS. Project-specific environmental documents may adjust this mitigation measure as necessary to respond to site-specific conditions.

### *GHG-2 Land Use Project Energy Consumption and Water Use Reduction Measures*

For land use projects under their jurisdiction, cities and the County can and should implement measures to reduce energy consumption, water use, solid waste generation, and VMT, all of which contribute to GHG emissions. Project-specific environmental documents may adjust these

mitigation measures as necessary to respond to site-specific conditions. These measures include, but are not limited to:

- Require new residential and commercial construction to install solar energy systems or be solar-ready
- Require new residential and commercial development to install low flow water fixtures
- Require new residential and commercial development to install water-efficient drought-tolerant landscaping, including the use of compost and mulch
- Require new development to exceed the applicable Title 24 energy-efficiency requirements
- Require new development to be fully electric
- Require new residential and commercial development to offer information on recycling, composting, and disposal of household hazardous waste and e-waste
- Require new development to implement circulation design elements in parking lots for non-residential uses to reduce vehicle queuing and improve the pedestrian environment

#### **IMPLEMENTING AGENCIES AND TIMING**

Implementing agencies for land use projects are cities and the County. This mitigation measure can and should be applied during project permitting and environmental review and implemented during project operation, as applicable.

#### **Significance After Mitigation**

If implementing agencies adopt and require the mitigation described above, impacts would be reduced because energy, water use, solid waste generation, and VMT-related GHG emissions from land use projects would be reduced. However, implementation of project-level GHG-reducing measures may not be feasible and cannot be guaranteed on a project-by-project basis. Therefore, this impact would remain significant and unavoidable. No additional feasible mitigation measures are available that would ensure no net increase in GHG emissions compared to existing baseline conditions.

**Threshold 2:** Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Any conflict with the following thresholds would be considered a significant impact:

- a. Conflict with regional SB 375 per capita passenger vehicle CO<sub>2</sub> emission reduction targets of 13 percent by 2035 from 2005 levels

**Impact GHG-3 THE TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD NOT CONFLICT WITH REGIONAL SB 375 PER CAPITA PASSENGER VEHICLE CO<sub>2</sub> EMISSION REDUCTION TARGETS OF 13 PERCENT BY 2035 FROM 2005 LEVELS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

One of the goals of SB 375 is to reach the per capita GHG emissions reduction targets for passenger vehicles set by CARB through an integrated land use, transportation, and housing plan. Achievement of this goal is an objective of the proposed 2022 RTP/SCS. The target from CARB, analyzed in this EIR, is identified as a 13 percent reduction in per capita passenger vehicle emissions from 2005 levels by 2035.<sup>4</sup> Table 4.8-4 presents per capita passenger vehicle emissions for 2035 as compared to the 2005 baseline. The per capita transportation-related emissions from passenger vehicles include off-model adjustments that represent a reasonable level effect of the transportation programs included in the proposed 2022 RTP/SCS.

**Table 4.8-4 Per Capita Passenger Vehicle CO<sub>2</sub> Emissions Comparison**

	Percent Change in Per Capita CO <sub>2</sub> Emissions (lbs/day)	
	2005 Baseline (per SB 375)	2035
Per Capita Passenger Vehicle Emissions <sup>1</sup>	10.5	9.4
Percent Change from in Per Capita GHG Emissions from 2005		13.1%
SB 375 Target		-13%
SB 375 Target Met?		Yes

CO<sub>2</sub> = carbon dioxide; lbs = pounds; SB = Senate Bill

Source: Appendix A

<sup>1</sup>Per capita passenger vehicle emissions for 2035 derived from KCAG Transportation Demand Model.

<sup>2</sup>SB 375 targets have not been adopted for post-2035 years.

As shown in Table 4.8-4, implementation of the proposed 2022 RTP/SCS in the year 2035 would result in a decrease of per capita passenger vehicle CO<sub>2</sub> emissions by 13.1 percent compared to 2005 levels. Therefore, implementation of the proposed 2022 RTP/SCS would achieve the SB 375 GHG reduction target for KCAG of 13 percent by 2035, and the proposed 2022 RTP/SCS would therefore be consistent with SB 375. Impacts would be less than significant.

## Mitigation Measures

No mitigation measures are required.

<sup>4</sup> The SB 375 target for 2020 is not utilized herein as a threshold of significance because the 2022 RTP/SCS would apply only to future transportation and land use planning from the year of adoption (anticipated to be 2022) forward.

**Threshold 3:** Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Any conflict with the following thresholds would be considered a significant impact:

- b. Conflict with state's ability to achieve SB 32 GHG reduction target, which aims to reduce statewide emissions to 40 percent below 1990 levels by 2030
- c. Conflict with state's ability to achieve EO S-3-05 GHG reduction 2050 goal, which aims to reduce statewide emissions to 80 percent below 1990 levels by 2050 and EO B-55-18; or
- d. Conflict with applicable local GHG reduction plans

**IMPACT GHG-4 IMPLEMENTATION OF THE PROPOSED 2022 RTP/SCS WOULD CONFLICT WITH THE STATE'S ABILITY TO ACHIEVE SB 32, EOs S-3-05 AND B-55-18, AND APPLICABLE LOCAL GHG REDUCTION PLAN TARGETS AND GOALS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

## 2017 Scoping Plan

The proposed 2022 RTP/SCS would implement a suite of transportation improvement projects and facilitate a land use scenario that is consistent with the transportation sustainability goals of the 2017 Scoping Plan. The land use scenario envisioned by the proposed 2022 RTP/SCS concentrates the forecasted growth in population and employment in established neighborhoods, job centers, urban arterials, and transit areas in an effort to reduce VMT. Active transportation projects would implement design policies that prioritize transit, biking, and walking throughout the KCAG region including but not limited to the cities of Avenal, Corcoran, Hanford, and Lemoore. Active Transportation projects would increase the number, safety, and connectivity, and attractiveness of biking and walking facilities by adding sidewalks, trails, bike lanes, crosswalks, intersection improvements, and signage throughout the KCAG region. Furthermore, the proposed 2022 RTP/SCS includes transit projects designed to maintain, enhance, and expand transit services offered by agencies in the KCAG region, including, but not limited to, the Kings Area Regional Transit (KART) and Corcoran Area Transit (CAT). Proposed 2022 RTP/SCS projects include electric bus procurement by CAT and KART, enhanced Dial-A-Ride operations, EV Charging Station expansion by the County of Kings, and other transit projects. Transit projects would increase the availability of low carbon mobility options in the region, thereby contributing to the 2017 Scoping Plan's goals of increasing the penetration of zero emission vehicles in non-light-duty sectors and electrifying the transportation sector. Therefore, the proposed 2022 RTP/SCS is consistent with the goals and strategies of the 2017 Scoping Plan.

## SB 32

The SB 375 targets are a key element of CARB's 2017 Scoping Plan. However, the 2017 Scoping Plan states, "Stronger SB 375 GHG reduction targets [adopted in 2018] will enable the State to make significant progress toward this goal, but alone will not provide all of the VMT growth reductions that will be needed. There is a gap between what SB 375 can provide and what is needed to meet the State's 2030 and 2050 goals" (CARB 2017). Therefore, consistency with the SB 375 target does not necessarily equate to consistency with SB 32 and the 2017 Scoping Plan. This analysis hypothetically assumes that the proposed 2022 RTP/SCS would be required to achieve the same proportional GHG reductions as the state by the year 2030 (i.e., a 40 percent reduction in GHG emissions below 1990 levels). Although transportation related GHG emissions would decrease over

the planning period, the reduction would not be sufficient to achieve the 2030 target of a 40 percent reduction below 1990 levels. As shown in Table 4.8-5, per capita transportation-related emissions would also decrease.

**Table 4.8-5 Per Capita Transportation-Related Emissions (All Vehicle Classes) Compared to 1990 Levels**

Scenario	Per Capita CO <sub>2</sub> Emissions (lbs/day)	
	Vehicle Emissions	% Change in Emissions Compared to 1990 Baseline
1990 Baseline <sup>1</sup>	30.5	–
2005 Baseline	35.9	–
2020 Baseline	34.4	12.8%
2030 with proposed 2022 RTP/SCS	27.6	-9.7%
2046 with proposed 2022 RTP/SCS	27.5	-10.0%

<sup>1</sup> Actual 1990 emissions are unknown but are generally assumed to be 15% below 2005 levels (CARB 2008).

Source: Appendix A

As discussed in Impact GHG-2, per capita land use emissions associated with electricity and natural gas consumption, water and wastewater conveyance and treatment, and solid waste disposal are anticipated to decline over the planning period, primarily as a result of increasingly stringent iterations of State building code standards. However, it cannot be feasibly determined that reductions in land use emissions would achieve the SB 32 target.

Therefore, although the policies, transportations projects, and land use scenario identified in the proposed 2022 RTP/SCS are designed to align transportation and land use planning to reduce transportation related GHG emissions, the proposed 2022 RTP/SCS would conflict with the State’s ability to achieve the SB 32 GHG emissions reduction target, assuming that the proposed 2022 RTP/SCS is required to achieve the same proportional Statewide GHG reductions. Implementation of Mitigation Measure GHG-4 below would reduce this impact to the extent feasible.

### **EOs S-3-05 and B-55-18**

Because the plan would conflict with the State’s ability to achieve the SB 32 GHG reduction target, it would also impede “substantial progress” toward meeting the reduction goals identified in EO S-3-05 and EO B-55-18. Implementation of Mitigation Measure GHG-4 below would reduce this impact to the extent feasible.

### **Local Climate Action Plans**

Two of KCAG’s member jurisdictions (the cities of Hanford and Avenal) have adopted a CAP that sets goals and targets for the reduction of GHG emissions, and outlines policies to help achieve those goals (City of Hanford 2014; City of Avenal 2014). The regional CAP had been adopted prior to enactment of SB 32 and thus presents strategies intended to comply with the GHG emissions reduction goals recommended for local governments in the AB 32 Scoping Plan, which was aimed at reducing GHG emissions to 1990 levels by 2020 in accordance with AB 32. This CAP is also intended to make progress toward the State’s 2030 target of reducing GHG emissions by 40 percent below 1990 levels, as first set forth in EO S-3-05 in 2005 and later codified by SB 32 in 2017. As discussed previously, the proposed 2022 RTP/SCS was determined to be inconsistent with the SB 32 target and



EO S-3-05 and B-55-18 goals. Therefore, it would also conflict with the goals of the regional CAP, which is designed to meet the same State goals, and impacts would be significant. The following mitigation measures would reduce this impact to the extent feasible.

## **Mitigation Measures**

For all transportation projects under their jurisdiction, implementing agencies shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the proposed 2022 RTP/SCS where applicable for transportation projects generating construction GHG emissions. The County of Kings and cities in the KCAG region can and should implement these measures, where relevant to land use projects implementing the proposed 2022 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

Implementation of Mitigation Measure GHG-2 would also reduce GHG emission from land use projects. Implementation of Mitigation Measures T-2(a) in Section 4.13, *Transportation*, would further reduce GHG emissions from the proposed 2022 RTP/SCS.

### *GHG-4 Transportation-Related GHG Reduction Measures*

The implementing agency shall incorporate the most recent GHG emission reduction measures and/or technologies for reducing VMT and associated transportation related GHG emissions. Current GHG-reducing measures include the following:

- Installation of electric vehicle charging stations beyond those required by State and local codes
- Utilization of electric vehicles and/or alternatively fueled vehicles in company fleet
- Provision of dedicated parking for carpools, vanpool, and clean air vehicles
- Provision of vanpool and/or shuttle service for employees
- Implementation of reduced parking minimum requirements
- Implementation of maximum parking limits
- Provision of bicycle parking facilities beyond those required by State and local codes
- Provision of a bicycle-share program
- Expansion of bicycle routes/lanes along the project site frontage
- Provision of new or improved transit amenities (e.g., covered turnouts, bicycle racks, covered benches, signage, lighting) if project site is located along an existing transit route
- Expansion of existing transit routes
- Provision of transit subsidies
- Expansion of sidewalk infrastructure along the project site frontage
- Provision of safe, pedestrian-friendly, and interconnected sidewalks and streetscapes
- Provision of employee lockers and showers
- Provision of on-site services that reduce the need for off-site travel (e.g., childcare facilities, automatic teller machines, postal machines, food services)
- Provision of alternative work schedule options, such as telework or reduced schedule (e.g., 9/80 or 10/40 schedules), for employees

- Implementation of transportation demand management programs to educate and incentivize residents and/or employees to use transit, smart commute, and alternative transportation options

#### **IMPLEMENTING AGENCIES AND TIMING**

Implementing agencies for transportation projects are KCAG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during project operation, as applicable.

#### **Significance After Mitigation**

If implementing agencies adopt and require the mitigation described above, impacts would be reduced because transportation related GHG emissions from transportation and land use projects would be reduced. However, implementation of project-level GHG-reducing measures may not be feasible and cannot be guaranteed on a project-by-project basis. Additionally, it is speculative at this time to forecast whether project-level GHG emission reductions would be sufficient to achieve a countywide reduction in GHG emissions of 40 percent below 1990 levels by 2030. Therefore, this impact would remain significant and unavoidable. No additional feasible mitigation measures are available that would reduce emissions to trajectories consistent with SB 32, EO S-3-05, and EO B-55-18 GHG reduction targets and goals.

#### **c. Specific Projects that May Result in Impacts**

The analysis within this section discusses the potential GHG related impacts associated with the proposed 2022 RTP/SCS. The transportation projects within the proposed 2022 RTP/SCS are evaluated herein in their entirety and are intended to improve circulation rather than cause adverse impacts. However, as described above, the proposed 2022 RTP/SCS would increase GHG emissions as a result of project construction and/or operation. These effects have been found to be significant, as described above. Any number of the proposed 2022 RTP/SCS projects that require construction equipment or include transportation improvement would presumably increase GHG emissions. Thus, no specific projects are listed in this section related to the adverse impacts on GHG emissions in the KCAG region.

#### **4.8.4 Cumulative Impacts**

The impacts of GHG emissions are, by definition, cumulative impacts, as they add to the global accumulation of greenhouse gases in the atmosphere. The cumulative impact analysis area for GHG emissions consists of the KCAG region, adjoining counties, and the entire State of California. The entire state is included in the analysis area because GHG emissions from the KCAG region and adjoining counties would influence the ability for the State to achieve its GHG reduction targets. The analysis presented in Section 4.8.3, *Impact Analysis*, evaluates both plan-level impacts as well as the contribution of the proposed 2022 RTP/SCS to the existing cumulative impact related to GHG emissions, the effects of which are outlined in Section 4.8.1(c), *Potential Effects of Climate Change*.

As discussed under Impact GHG-1, construction activities associated with transportation improvement projects and future land use projects envisioned by the proposed 2022 RTP/SCS would generate temporary GHG emissions. The temporary construction GHG emissions would occur concurrent with ongoing GHG emissions in the cumulative impact analysis area, such as GHG emissions ongoing agricultural activities in surrounding Valley counties such as Fresno County and

Tulare County. As described under Impact GHG-1, construction-related GHG emissions associated with buildout under the proposed 2022 RTP/SCS would be significant even after implementation of Mitigation Measure GHG-1. Therefore, the contribution of the proposed 2022 RTP/SCS construction emissions to the cumulative impact of total GHG emissions would be cumulatively considerable, pre- and post-mitigation.

As discussed under Impacts GHG-2 through GHG-4, the transportation projects and land use scenario envisioned in the proposed 2022 RTP/SCS would also generate operational GHG emissions. Overall, implementation of the proposed 2022 RTP/SCS would reduce total statewide mobile emissions; however, land use emissions may increase compared to existing conditions. Implementation of Mitigation Measure GHG-2 would reduce GHG emissions from land use projects, but impacts would remain significant and unavoidable. Therefore, the contribution of land use project emissions to the cumulative impact of total GHG emissions would be cumulatively considerable, pre- and post-mitigation.

The proposed 2022 RTP/SCS would not conflict with SB 375 because per capita emissions reductions would meet and exceed the regional target of a 13 percent reduction by 2035 compared to 2005 levels. However, reductions achieved by the proposed 2022 RTP/SCS would not be sufficient to achieve the 2030 target of a 40 percent reduction in overall emissions set forth by SB 32 and therefore would also be inconsistent with EO S-3-05 and B-55-18 goals. Other ongoing land uses and operation of future development in the cumulative impact analysis area would also generate GHG emissions. Implementation of Mitigation Measures GHG-2 and GHG-4 would reduce the proposed 2022 RTP/SCS impacts related to consistency with state GHG reduction targets and goals; however, emissions would remain in exceedance of applicable significance thresholds. Therefore, the proposed 2022 RTP/SCS would have a cumulatively considerable contribution to the cumulative impact of inconsistency with state GHG reduction targets and goals, both pre- and post- mitigation.

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## 4.9 Hazards and Hazardous Materials

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This section analyzes impacts related to hazardous materials and airport safety hazards in the KCAG region. Impacts related to impairment or interference of emergency response or evacuation plans are discussed in detail in Section 4.13, *Transportation*. Impacts related to wildfire are discussed in Section 4.15, *Wildfire*.

### 4.9.1 Setting

#### a. Physical Setting

##### Hazardous Materials and Waste

The term “hazardous material” is defined in the State of California’s Health and Safety Code (HSC), Chapter 6.95, Section 25501(o) as:

Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. “Hazardous materials” include, but are not limited to, hazardous substances, hazardous waste and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Hazardous waste is hazardous material generated, intentionally or unintentionally, as a byproduct of some process or condition. Hazardous wastes are defined in California HSC Section 25141(b) as wastes that:

...because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness [or] pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

According to the U.S. Environmental Protection Agency (USEPA) waste may be considered hazardous if it is specifically listed as known hazardous waste or if it meets the one or more of the following characteristics of a hazardous waste:

- **Toxicity.** Poisonous, harmful when ingested or absorbed.
- **Ignitability.** Capable of being ignited by open flame, liquids with flash points<sup>1</sup> below 60 degrees Celsius.
- **Corrosivity.** Capable of corroding other materials, aqueous wastes with a pH of 2 or less or greater than or equal to 12.5.
- **Reactivity.** May be unstable under normal conditions, may react with water, may give off toxic gases or may be capable of detonation or explosion under normal conditions or when heated.

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<sup>1</sup> Flash point is the lowest temperature at which the vapors of a volatile combustible substance ignite in the air when exposed to flame.

## **Generation and Disposal of Hazardous Materials and Waste**

Many chemicals used in household cleaning, construction, light and heavy industry, dry cleaning, landscaping, and automotive maintenance, and repair are considered to generate hazardous materials and waste. Additionally, in some cases, past industrial or commercial uses on a site may have resulted in spills or leaks of hazardous materials and petroleum that have caused contamination of the underlying soil and groundwater. Federal and state laws require that soils and groundwater having concentrations of contaminants that are higher than certain acceptable levels are handled and disposed as hazardous waste during excavation, transportation, and disposal. The California Code of Regulations (CCR), Title 22, Sections 66261.20-24 contains technical descriptions of characteristics that would cause a soil to be classified as a hazardous waste. Hazardous materials require special methods of disposal, storage, and treatment, and the release of hazardous materials requires an immediate response to protect human health and safety, and the environment. Improper disposal can harm the environment and people who work in the waste management industry.

Businesses that handle or generate hazardous materials in the KCAG region are monitored by USEPA; California Department of Toxic Substances Control (CDTSC); Central Valley Regional Water Quality Control Board (CVRWQCB); Kings County Department of Public Health (KCDP); San Joaquin Valley Air Pollution District (SJCAPD); and the California Department of Resources Recycling and Recovery (CalRecycle) (DTSC 2022a). Generators of hazardous waste fall into two categories: large-quantity generators (LQG) and small-quantity generators (SQG). An LQG is defined as a person or facility generating more than 2,200 pounds of hazardous waste per month. An SQG is defined as generating greater than 100 kilograms (kg) and less than 1,000 kg (2,200 pounds) of hazardous waste per month. LQGs include industrial and commercial facilities, such as manufacturing companies, petroleum refining facilities and other heavy industrial businesses.

LQGs must comply with federal and state requirements for managing hazardous waste. LQGs need an USEPA identification number that is used to monitor and track hazardous waste activities. SQGs include facilities such as service stations, automotive repair, dry cleaners, and medical offices. The regulatory requirements for SQGs are less stringent than the requirements for LQGs; however, SQGs must also obtain an USEPA identification number, which must be used for traceability on all hazardous waste documentation. Pursuant to federal law (40 CFR 262.41-43), all such generators must register with USEPA for record-keeping and reporting.

## **Transportation of Hazardous Materials and Waste**

Hazardous materials, hazardous wastes, medical waste, and petroleum products are a subset of the goods routinely shipped along the transportation corridors in the KCAG region. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by the California Environmental Protection Agency (CalEPA) Department of Toxic Substances Control (DTSC). The DTSC maintains a list of active registered hazardous waste transporters throughout California, and the California Department of Public Health regulates the haulers of hazardous waste. There are 15 active registered hazardous waste transporters in the KCAG region (DTSC 2022b). Transportation of hazardous materials and wastes in the KCAG region occurs through a variety of modes, such as, but not limited to truck, rail, air, and pipeline, which are described further below.

Transportation of hazardous materials by truck is regulated by the DOT. The DOT's Federal Motor Carrier Safety Administration identifies Grangeville Blvd from State 41 (SR 41) to Lemoore Naval Air

Station in the KCAG region as a Hazardous Materials Route in its National Hazardous Materials Route Registry (DOT 2020). The Chemical Waste Management Inc. near Kettleman (CWM Kettleman facility) in the KCAG region receives imports of hazardous waste for treatment, storage, and disposal (DTSC 2022a). Access to the Kettleman Hills facility is provided by an interchange at Interstate 5 (I-5)/SR41 and with turn lanes into the facility from SR 41. The heaviest traveled highways and roads that have been identified as Hazardous Materials Routes include sections of State Highway 41, from Grangeville Blvd to the Lemoore Naval Air Station (DOT 2020).

According to the U.S. DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) and Office of Hazardous Materials Safety (OHMS), hazardous materials traffic in the U.S. now exceeds 800,000 shipments per day and results in more than 3.1 billion tons of hazardous materials annually (FHWA 2021). Considering the primary use of roads compared to rail and pipelines in the KCAG region, trucks are likely responsible for transporting most hazardous materials. According to the DOT (2022), truck transport consistently accounts for the largest share of reportable incidents each year. For example, in 2021, there were 22,146 highway reportable incidents in the State, mostly from by truck transportation, while rail and air transport accounted for 383 and 971 incidents, respectively. While hazardous waste incidents account for a small percentage of overall highway incidents, the impact of these incidents can be more severe due to the nature of the material(s) involved.

The transport of hazardous materials by rail is also regulated by DOT. Freight railroads have employee safety training requirements and operating procedures that govern the handling and movement of hazardous goods, including crude oil. Federal regulations and self-imposed safety practices dictate train speeds, equipment and infrastructure inspections, and procedures for how to handle and secure trains carrying hazardous materials. The freight rail industry provides instruction to local public safety officials at the Transportation Technology Center's Security and Emergency Response Training Center, a 52 square mile training facility where cargo trucks and freight trains are routinely used in large-scale hazardous response trainings. Individual railroads conduct additional local training for first responders. Freight railroads also work with State emergency planning committees and local first responders to develop municipal emergency response plans. In accordance with a February 2014 agreement between the DOT and Association of American Railroads (AAR), railroads have developed an inventory of emergency response resources and provided the DOT with information on the deployment of those resources. This information is available upon request to appropriate emergency responders. A discussion of various types of rail transit projects in the KCAG region is provided in Section 4.12, *Noise*.

Pipelines, primarily underground, are used to transport a variety of potentially hazardous substances, including natural gas, crude oil, and other petroleum products throughout the KCAG region. For example, Pacific Gas & Electric maintains and operates a natural gas pipeline that is roughly parallel to Interstate 5 through most of the State, and. Pipelines in the KCAG region run through both urban areas and agricultural areas. The majority of pipelines are either sections of larger lines or lie within the south-west portion of the KCAG region (NPMS 2022). The American Petroleum Institute recommends setbacks of 50 feet from petroleum and hazardous liquids lines for new homes, businesses, and places of public assembly. It also recommends 25 feet for garden sheds, septic tanks, and water wells; and 10 feet for mailboxes and yard lights (Transportation Research Board 2004). The Transportation Research Board (2004) encourages the use of zoning regulations to minimize casualties in the event of a catastrophic pipeline rupture. Possible land use techniques include, for example, establishing setbacks; regulating or prohibiting certain types of structures and uses near transmission pipelines; and encouraging, through site and community

planning, other types of activities and facilities, such as mini-storage businesses, linear parks, and recreational paths, within or in the vicinity of pipeline rights-of-way.

There are no major shipping ports or marine oil terminals in the KCAG region.

### **Potential for Hazardous Materials and Hazardous Materials Sites**

Many activities in the KCAG region involve the use of hazardous materials. The use of hazardous materials is commonplace in commercial, industrial, and manufacturing activities, and many businesses within the KCAG region are permitted to handle and transport hazardous materials. There are historic and existing land uses that have generated hazardous waste as part of daily business operations. LQGs and SQGs include such commercial uses as painters, dry cleaners and photographers, and industrial uses such as automotive service stations, sheet metal works, metal scrap yards, truck yards, cement and lime warehouses, and Pacific Gas & Electric and Southern California Edison substations. In addition, older structures may contain building materials that are considered hazardous, such as asbestos and lead-based paint. In general, these historic and current uses and building materials are located throughout the KCAG region.

California Government Code Section 65962.5 requires the California Environmental Protection Agency (CalEPA) to prepare an annual Hazardous Waste and Substances List, commonly referred to as the Cortese List. The addition or inclusion of a site on the Cortese List has bearing on the local permitting process and compliance with CEQA. For example, projects proposed at a site on the Cortese List are not eligible for categorical exemptions to CEQA per Section 15300.2(e) of the *State CEQA Guidelines*. The Cortese List is not maintained as a centralized list, however, and a variety of governmental data sources identify sites where hazardous substances may have been released or may have created a hazardous condition on-site. These include:

- DTSC Active Transporter County Search Report (2022b);
- DTSC EnviroStor database (DTSC 2022c) (Cortese List) for tracking hazardous waste facilities and site with known contamination or sites where there may be reasons to investigate further;
- State Water Resources Control Board's (SWRCB) GeoTracker database (SWRCB 2022) of records for sites that require cleanup, such as leaking underground storage tank (UST) sites, Department of Defense sites, landfill sites and Cleanup Program sites;
- California Department of Resources Recycling and Recovery's (CalRecycle) Solid Waste Inventory System database (CalRecycle 2022) of active and closed solid waste sites;
- The USEPA Envirofacts database (USUSEPA 2022) of Resource Conservation and Recovery Act (RCRA) sites, as well as other hazardous sites, such as superfund and brownfield sites; and
- The USACE list of Formerly Used Defense Sites for California (USACE 2019).

All of the databases listed above have identified sites within the KCAG region. Five sites in the KCAG region are identified on the USACE list of Formerly Used Defense Sites for California (USACE 2019). According to CalRecycle's Solid Waste Inventory System database (2022), there is one active hazardous waste facility (CWM Kettleman), one active landfill site (Avenal Regional Landfill), 6 other recycling, chemical waste, and compost sites, and an additional 12 sites that are closed or inactive. None are currently on the list of sites that are violating minimum standards, as all active sites are permitted (CalRecycle 2022).

For some databases, such as the USEPA Envirofacts database, the list of identified sites is too exhaustive to provide in its entirety for purposes of this EIR because it is not necessary for programmatic impact analysis. The USEPA Envirofacts database also identifies hundreds of RCRA



sites in the region. Examples of some of the RCRA sites identified in the region include gas stations, dry cleaners, automotive repair shops, pharmacies, automobile dealerships, paint stores, trucking companies, agricultural operations, and heavy industrial sites (USUSEPA 2022). The SWRCB GeoTracker database also identifies many leaking UST sites, some have been which remediated and cleaned, and some of which have yet to be cleaned. For purposes of this EIR, it is more important to note that many sites on the Cortese list exist throughout the KCAG region, typically within proximity to the transportation network and more densely populated areas in the region.

To address the potential for documented and undocumented hazards on a site, the American Society for Testing and Materials has developed widely accepted practice standards for the preliminary evaluation of site hazards (E-1527-13) (ASTM 2013). Phase I Environmental Site Assessments (ESAs) include an on-site visit to determine current conditions; an evaluation of possible risks posed by neighboring properties; interviews with persons knowledgeable about the site's history; an examination of local planning files to check prior land uses and permits granted; file searches with appropriate agencies having oversight authority relative to water quality and/or soil contamination; examination of historic aerial photography of the site and adjacent properties; a review of current topographic maps to determine drainage patterns; and an examination of chain-of-title for environmental lines and/or activity and land use limitations. If a Phase I ESA indicates the presence, or potential presence of contamination, a site-specific Phase II ESA is generally conducted to test soil and/or groundwater. Based on the outcome of a Phase II ESA, remediation of contaminated sites under federal and state regulations may be required prior to development. Phase I ESAs can also be used to identify the potential for presence of hazardous building materials in situations where older structures intended for demolition could contain lead-based paint, asbestos containing materials, mercury, or polychlorinated biphenyls.

## **Naturally Occurring Asbestos**

Asbestos is not a formal mineralogical term, but rather a commercial and industrial term historically applied to a group of silica-containing minerals that form long, very thin mineral fibers (termed amphiboles), which generally form in bundles, that were once widely used in commercial products. Naturally occurring asbestos includes minerals in their natural state, such as in bedrock or soils. Naturally occurring asbestos, which was identified as a toxic air contaminant by CARB in 1986, is of concern due to potential exposures to the tiny fibers that can become airborne if asbestos-bearing rocks are disturbed by natural erosion or human activities, such as road building, excavations, and other ground-disturbing activities. Once disturbed, microscopic fibers can become lodged in the lungs, which can potentially lead to serious health problems. There are four naturally occurring asbestos sites within the KCAG region and none are active (USGS 2022). In general, naturally occurring asbestos fibers do not pose a threat unless disturbed and introduced into the air as fugitive dust.

## **Schools**

Children are particularly susceptible to long-term effects from emissions of hazardous materials. Therefore, locations where children spend extended periods of time, such as schools, are particularly sensitive to hazardous air emissions and accidental release associated with the handling of extremely hazardous materials, substances, or wastes. The Kings County Office of Education (KCOE) oversees 13 school districts, and two schools are separately overseen by the Kings County Board of Education (KCOE 2022). There are approximately 28,000 students enrolled in KCOE districts, and school districts range from small to large.

## **Airports**

Potential hazards in relationship to airport operations are generally regulated by the Federal Aviation Administration (FAA), with local planning and evaluation of proposed projects (in terms of a proposed project's compatibility in relationship to air and ground operations and the safety of the public) under the authority of the applicable airport land use commission (ALUC) through an airport land use compatibility plan (ALUCP). The ALUC with authority in the KCAG region is the Kings County Airport Land Use Commission and the applicable ALUCP in the KCAG region is discussed in Section 4.9.2 below.

There are two public-use airports in the KCAG region: Corcoran Airport that is privately owned by J. G. Boswell but open to public use with permission; and Hanford Municipal Airport, which is public-use. There are also two private-use airports in the region: the Lemoore Naval Air Station; and the Avenal Airport. The Corcoran Airport's activity is primarily used for agricultural aircrafts (Kings County 1994). A table of the KCAG region's aviation facilities is provided in Section 4.12, *Noise*.

### **4.9.2 Regulatory Setting**

#### **a. Federal Laws, Regulations, Policies**

The USEPA is the lead agency responsible for enforcing federal regulations that affect public health or the environment. The primary federal laws and regulations include the RCRA of 1976 and the Hazardous and Solid Waste Amendments enacted in 1984, the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), and the Superfund Act and Reauthorization Act of 1986 (SARA). Federal statutes pertaining to hazardous materials and wastes are contained in the CFR Title 40 - Protection of the Environment.

#### **Toxic Substances Control Act**

The Toxic Substances Control Act of 1976 (15 U.S. Code Section 2601 et seq.) grants USEPA the authority to develop reporting, record-keeping, and testing requirements for, as well as restrictions on, the manufacture, use, and sale of chemical substances. Pursuant to Title II of the Toxic Substances Control Act, the USEPA/USEPA adopted the Asbestos Model Accreditation Plan in 1994. The Model Accreditation Plan requires that all persons who inspect for asbestos-containing materials or design or conduct response actions with respect to friable asbestos obtain accreditation by completing a prescribed training course and passing an exam. Section 403 of the Toxic Substances Act establishes standards for lead-based paint hazards in paint, dust, and soil.

#### **Resource Conservation and Recovery Act**

RCRA Subtitle C regulates the generation, transportation, treatment, storage, and disposal of hazardous waste by LQGs (1,000 kilograms per month or more) through comprehensive life cycle or "cradle to grave" tracking requirements. The requirements include maintaining inspection logs of hazardous waste storage locations, records of quantities being generated and stored, and manifests of pick-ups and deliveries to licensed treatment/storage/disposal facilities. RCRA also identifies standards for treatment, storage, and disposal, which is codified in 40 CFR 260.

#### **Comprehensive Environmental Response Compensation and Liability Act**

Congress enacted CERCLA, setting up what has become known as the Superfund program, in 1980 to establish prohibitions and requirements concerning closed and abandoned hazardous waste

sites; provide for liability of persons responsible for releases of hazardous waste at these sites; and establish a trust fund to provide for cleanup when no responsible party can be identified. Generally, CERCLA authorizes two kinds of response actions:

- Short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response.
- Long-term remedial response actions that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening.

### **Superfund Amendments and Reauthorization Act**

SARA amended the CERCLA in 1986, emphasizing the importance of permanent remedies and innovative treatment technologies to clean up hazardous waste sites; requiring Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations; providing new enforcement authorities and settlement tools; increasing involvement of the states in every phase of the Superfund program; increasing the focus on human health problems posed by hazardous waste sites; encouraging greater citizen participation in making decisions on how sites should be cleaned up; and increasing the size of the trust fund to \$8.5 billion.

### **Hazardous Materials Transportation Act**

The transportation of hazardous materials is regulated by the Hazardous Materials Transportation Act (49 CFR § 101 et seq.), which is administered by the Research and Special Programs Administration of U.S. DOT. The Hazardous Materials Transportation Act governs the safe transportation of hazardous materials by all modes. The DOT regulations that govern the transportation of hazardous materials are applicable to any person who transports, ships, causes to be transported or shipped, or who is involved in any way with the manufacture or testing of hazardous materials packaging or containers. The DOT regulations govern every aspect of the movement, including packaging, handling, labeling, marking, placarding, operational standards, and highway routing.

### **Emergency Planning Community Right-to-Know Act**

The Emergency Planning Community Right-to-Know Act (EPCRA), or SARA Title III, was enacted in October 1986. SARA Title III requires any infrastructure at the State and local levels to plan for chemical emergencies, including identifying potential chemical threats. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. EPCRA Sections 301–312 are administered by USEPA's Office of Emergency Management. USEPA's Office of Information Analysis and Access implements EPCRA's Section 313 program. In California, SARA Title III is implemented through the California Accidental Release Prevention Program (CalARP).

### **Federal Disaster Mitigation Act**

The Disaster Mitigation Act of 2000 provided a new set of mitigation plan requirements that encourage state and local jurisdictions to coordinate disaster mitigation planning and implementation. States are encouraged to complete a "Standard" or an "Enhanced" Natural Mitigation Plan. "Enhanced" plans demonstrate increased coordination of mitigation activities at the

state level and, if completed and approved, increase the amount of funding through the Hazard Mitigation Grant Program.

## **FAA Regulations**

The primary role of the FAA is to promote aviation safety and control the use of airspace. Public use airports that are subject to the FAA's grant assurances must comply with specific FAA design criteria, standards, and regulations. Land use safety compatibility guidance from the FAA is limited to the immediate vicinity of the runway, the runway protection zones at each end of the runway, and the protection of navigable airspace.

14 CFR 77, *Safe Efficient Use and Preservation of the Navigable Airspace*, establishes the federal review process for determining whether proposed development activities in the vicinity of an airport have the potential to result in a hazard to air navigation. 14 CFR Part 77 identifies standards for determining whether a proposed project would represent an obstruction "that may affect safe and efficient use of navigable airspace and the operation of planned or existing air navigation and communication facilities." Objects that are identified as obstructions based on these standards are presumed to be hazards until an aeronautical study conducted by the FAA determines otherwise.

## **b. State Laws, Regulations, and Policies**

### **California Asbestos Regulations**

In 1990, CARB issued an Airborne Toxic Control Measure (ATCM), which prohibited the use of serpentine aggregate for surfacing if the asbestos content was 5 percent or more. In July 2000, CARB adopted amendments to the existing 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. In July 2001, CARB adopted a new ATCM for construction, grading, quarrying, and surface mining operations in areas with serpentine or ultramafic rocks. These regulations are codified in Title 17, Section 93105 of the CCR. The regulations require preparation and implementation of an Asbestos Dust Mitigation Plan for construction or grading activities on sites greater than 1 acre in size with known NOA soils. The air districts enforce this regulation. In October 2000, the Governor's Office of Planning and Research issued a memorandum providing guidance to lead agencies in analyzing the impacts of NOA on the environment through the CEQA review process. In November 2000, the California Department of Real Estate added a section to subdivision forms that includes questions related to NOA on property proposed for development. In 2004, as part of its school-site review program, DTSC's School Property Evaluation and Cleanup Division released interim guidance on evaluating NOA at school sites. In addition, California Health and Safety Code Section 19827.5 prohibits issuance of demolition permits by local and State agencies without assessment of the potential for the structure to contain asbestos.

### **Lead Regulations**

The California Division of Occupational Safety and Health Administration (Cal/OSHA) lead standard for construction activities is implemented under Title 8 of the CCR. The standard applies to any construction activity that may release lead dust or fumes, including, but not limited to, manual scraping, manual sanding, heat gun applications, power tool cleaning, rivet busting, abrasive blasting, welding, cutting, or torch burning of lead-based coatings. Unless otherwise determined by

approved testing methods, all paints and other surface coatings are assumed to contain lead at prescribed concentrations, depending on the application date of the paint or coating.

### **California Fire Code**

The California Fire Code is Chapter 9 of CCR Title 24. 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 California Fire Code regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The California Fire Code and the California Building Code use a hazard classification system to determine what protective measures are required to protect 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 California Fire Code employs a permit system based on hazard classification.

### **California Accidental Release Prevention Program**

The CalARP Program addresses facilities that contain specified hazardous materials, known as “regulated substances,” that, if involved in an accidental release, could result in adverse off-site consequences. The CalARP Program defines regulated substances as chemicals that pose a threat to public health and safety or the environment because they are highly toxic, flammable, or explosive.

### **California Unified Program Administration**

The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections and enforcement activities of six environmental and emergency response programs, as listed below:

- Hazardous Materials Release Response Plans and Inventories (Business Plans);
- CalARP Program;
- Underground Storage Tank Program;
- Aboveground Petroleum Storage Act Program;
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs; and
- California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements.

The state agency partners involved in the Unified Program have the responsibility of setting program element standards, working with CalEPA on ensuring program consistency and providing technical assistance to the Certified Unified Program Agencies (CUPA). The following state agencies are involved with the Unified Program:

- CalEPA is directly responsible for coordinating the administration of the Unified Program. The Secretary of the CalEPA certifies CUPAs
- DTSC provides technical assistance and evaluation for the hazardous waste generator program including onsite treatment (tiered permitting)
- OES is responsible for providing technical assistance and evaluation of the Hazardous Material Release Response Plan (Business Plan) Program and the CalARP Programs

- The Office of the State Fire Marshal is responsible for ensuring the implementation of the Hazardous Material Management Plans and the Hazardous Material Inventory Statement Programs. These programs tie in closely with the Business Plan Program
- SWRCB provides technical assistance and evaluation for the UST program in addition to handling the oversight and enforcement for the aboveground storage tank program

The CUPA for Kings County is the California Environmental Reporting System (CERS). CERS is responsible for statewide implementation of government and local laws and regulations pertaining to the handling of hazardous wastes and hazardous materials.

### **California Land Environmental Restoration and Reuse Act of 2001**

The California Land Environmental Restoration and Reuse Act of 2001 established California Human Health Screening Levels (CHHSLs) as a tool to assist in the evaluation of contaminated sites for potential adverse threats to human health. The CHHSLs were developed by the Office of Environmental Health Hazard Assessment, an agency under the umbrella of CalEPA. The thresholds of concern used to develop the CHHSLs are an excess lifetime cancer risk of one in 1 million and a hazard quotient of 1.0 for non-cancer health effects. The CHHSLs were developed using standard exposure assumptions and chemical toxicity values published by USEPA and CalEPA. The CHHSLs can be used to screen sites for potential human health concerns where releases of hazardous chemicals to soils have occurred. Under most circumstances, the presence of a chemical in soil, soil gas, or indoor air at concentrations below the corresponding CHHSLs can be assumed to not pose a significant health risk to people who may live (residential CHHSLs) or work (commercial/ industrial CHHSLs) at the site.

### **California Multi-Hazard Mitigation Plan**

The State Hazard Mitigation Plan (SHMP) represents the state's primary hazard mitigation guidance document - providing an updated analysis of the state's historical and current hazards, hazard mitigation goals and objectives, and hazard mitigation strategies and actions. The plan represents the state's overall commitment to supporting a comprehensive mitigation strategy to reduce or eliminate potential risks and impacts of disasters in order to promote faster recovery after disasters and, overall, a more resilient state. State Hazard Mitigation Plans are required to meet the Elements outlined in FEMA's State Mitigation Plan Review Guide (revised March 2015, effective March 2016).

OES is responsible for the development and maintenance of the State's plan for hazard mitigation. The State's multi-hazard mitigation plan was last approved by the Federal Emergency Management Agency (FEMA) as an Enhanced State Mitigation Plan in 2018. The plan is designed to reduce the effects of disasters caused by natural, technological, accidental, and adversarial/human-caused hazards. The SHMP sets the mitigation priorities, strategies, and actions for the state. The plan also describes how risk assessment and mitigation strategy information is coordinated and linked from local mitigation plans into the SHMP and provides a resource for local planners of risk information that may affect their planning area. The State of California is required to review and revise its mitigation plan and resubmit for FEMA approval at least every five years to ensure continued funding eligibility for certain federal grant programs.

### **California Public Resources Code 21151.4**

Pursuant to Public Resources Code Section 21151.4, projects that can be reasonably anticipated to produce hazardous air emissions or handle extremely hazardous materials, substances, or waste

within 0.25 mile of an existing or proposed school must consult with the potentially affected school district and provide written notification not less than 30 days prior to the proposed certification or adoption of an environmental document. Where a school district proposes property acquisition or the construction of a school, the environmental document must address existing environmental hazards, and written findings must be prepared regarding existing pollutant sources.

### **California Education Code**

Sections 17071.13, 17072.13, 17210, 17210.1, 17213.1-3, and 17268 of the California Education Code became effective January 1, 2000. Together, they establish requirements for assessments and approvals regarding toxic and hazardous materials that school districts must follow before receiving final site approval from the DOE and funds under the School Facilities Program. These requirements are consistent with those described above for certification or adoption of an environmental document under Public Resources Code Section 21151.4.

California Education Code Section 17213(b) establishes requirements for assessments and approvals that address the potential for existing contamination on the site, and whether nearby land uses might reasonably be anticipated to emit hazardous air emissions or handle hazardous materials. Assessment of existing contamination is conducted in coordination with DTSC's School Property Evaluation and Cleanup Division, which is responsible for assessing, investigating, and cleaning up proposed school sites. This Division ensures that selected properties are free of contamination or, if the properties were previously contaminated, that they have been cleaned up to a level that protects the students and staff who will occupy a new school.

### **Carpenter-Presley-Tanner Hazardous Substances Account Act**

The Carpenter-Presley-Tanner Hazardous Substance Account Act imposes liability for hazardous substances removal or remedial actions and requires the State Attorney General to recover from the liable person, as defined, certain costs incurred by the DTSC or any of the state's nine RWCQB, upon the request of the DTSC or RWQCB. The act authorizes, except as specified, a party found liable for any costs or expenditures recoverable under the act for those actions to establish, as specified, that only a portion of those costs or expenditures are attributable to the party and requires the party to pay only for that portion. If each party does not establish its liability, the act requires a court to apportion those costs or expenditures, as specified, among the defendants and the remaining portion of the judgment is required to be paid from the Toxic Substances Control Account. Existing law authorizes the money deposited in the Toxic Substances Control Account in the General Fund to be appropriated to the DTSC for specified purposes, including the payment of the costs incurred by the state for those actions.

### **Lempert-Keene-Seastrand Oil Spill Prevention and Response Act**

The Lempert-Keene-Seastrand Oil Spill Prevention and Response Act of 1990 granted the Office of Spill Prevention and Response the authority to direct prevention, removal, abatement, response, containment, and cleanup efforts regarding all aspects of any oil spill in marine waters of California. The Office of Spill Prevention and Response implements the California Oil Spill Contingency Plan, consistent with the National Contingency Plan, which pays special attention to marine oil spills and impacts to environmentally- and ecologically sensitive areas. In 2014, the Office of Spill Prevention and Response program was expanded to cover all statewide surface waters at risk of oil spills from any source, including pipelines and the increasing shipments of oil transported by railroads.

## **Local Community Rail Security Act**

The Local Community Rail Security Act of 2006 (Public Utilities Code Sections 7665-7667) requires all rail operators to provide security risk assessments to California Public Utilities Commission, the Director of Homeland Security and the Catastrophic Event Memorandum Account that describe the following:

- Location and function of each rail facility;
- Types of cargo stored at or typically moved through the facility;
- Hazardous cargo stored at or moved through the facility;
- Frequency of hazardous movements or storage;
- Description of sabotage-terrorism countermeasures;
- Employee training programs;
- Emergency response procedures; and
- Emergency response communication protocols.

### **c. Regional and Local Laws, Regulations, Policies**

#### **San Joaquin Valley Air Pollution Control District**

The San Joaquin Valley Air Pollution Control District (SJVAPCD) attains and maintains air quality conditions in the San Joaquin Valley Air Basin (SJVAB), which comprises the San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and western Kern County counties. SJVAPCD is responsible for air monitoring, permitting, enforcement, long-range air quality planning, regulatory development, education, and public information activities related to air pollution, as required by the Clean Air Act and California Clean Air Act. Projects in the SJVAB are subject to SJVAPCD's rules and regulations, including rules pertaining to asbestos and toxic air contaminants. SJVAPCD Rule 4002, National Emission Standards for Hazardous Air Pollutants, sets emissions standards for stationary source emissions, including asbestos emission from building demolition.

#### **City and County General Plans**

Local planning policies related to hazards and hazardous materials are established in each jurisdiction's general plan, generally in the Safety Element or equivalent chapter. Safety Elements are required to address geologic hazards, fire hazards, dam failure, evacuation routes, flooding, and emergency response among other issues. For emergency services, some of the relevant policies may include coordinating with other agencies that are responsible for planning medical facilities to meet the health care needs of residents in the region, retaining hospitals, evaluating medical facility proposals, providing emergency response services, and participating in mutual-aid agreements.

Incorporated cities within the KCAG region each have a General Plan which includes a Safety Element or equivalent chapter. For projects within the municipal area of these cities these Plans would supersede the elements of the County General Plan. Outlined below are the goals for Kings County and major cities within the KCAG region as representative of local planning regarding hazards.

#### **KINGS COUNTY**

The Kings County 2035 General Plan Health and Safety Element (Chapter 7) includes goals in an effort to minimize the impacts of man-made or natural disasters, hazardous materials, or other



safety concerns. Relevant goals to the proposed 2022 RTP/SCS EIR include the following (Kings County 2010):

- **HS Goal A1:** Preventative measures reduce the potential impacts of natural hazards upon people's lives, property, and the environment
- **HS Goal C3:** Ensure Naval Air Station Lemoore, public airports and special use heliports remain operationally effective and free from encroachment of incompatible land uses, while surrounding land use compatibility serves to protect people and property from unnecessary exposure and hazards related to aircraft.

#### **CITY OF AVENAL**

The City of Avenal's General Plan 2035 includes goals that aim to improve public safety and provision of City services. Relevant policies to the proposed 2022 RTP/SCS EIR include the following (City of Avenal 2018):

- **Policy LU-8.7:** Require adequate mitigation measures for industrial development to avoid significant offsite circulation, noise, dust, odor, visual, and hazardous materials impacts.
- **Policy PSF-2.13:** Ensure that there are adequate collection facilities in Avenal for household hazardous wastes, including paint containers, motor oil, and electronics

#### **CITY OF CORCORAN**

The City of Corcoran's Safety Plan Element of the 2005-2025 General Plan includes Hazardous Materials and Waste Objectives that aim to improve public safety and provision of City services. Relevant policies and standards to the proposed 2022 RTP/SCS EIR include the following (City of Corcoran 2014):

- **4.21:** Require adequate separation between areas where hazardous materials are present and sensitive uses such as schools, residences, and public facilities.
- **4.22:** In areas historically used for commercial or industrial uses, require that developers conduct an environmental investigation to ensure that the site was not contaminated by the previous use.
- **4.23:** Promote the safe transport of hazardous materials through Corcoran by implementing the following measures:
  - Maintain formally designated hazardous material carrier routes to direct hazardous materials away from populated and other sensitive areas.
  - Prohibit vehicles transporting hazardous materials from parking on City streets.
  - Require that new pipelines and other channels carrying hazardous materials avoid residential areas and other immobile populations to the extent possible.

#### **CITY OF HANFORD**

The City of Hanford's Policy Document of the General Plan includes goals that aim to improve public safety and provision of City services. Relevant goals to the proposed 2022 RTP/SCS EIR include the following (City of Hanford 2017):

- **Goal H5:** Protection from the harmful effects of hazardous materials.
- **Goal H6:** Avoidance of properties contaminated by toxic or hazardous materials.

## **CITY OF LEMOORE**

The City of Lemoore's Safety and Noise section of the 2030 Lemoore General Plan includes policies that aim to improve public safety and provision of City services. Relevant policies to the proposed 2022 RTP/SCS EIR include the following (City of Lemoore, 2018):

- **Guiding Policy SN-G-4:** Protect Lemoore's ecology and residents from harm resulting from the improper production, use, storage, disposal, or transportation of hazardous materials.
- **Implementing Policy SN-I-20:** Coordinate enforcement of the Hazardous Material Disclosure Program with the Kings County Health Department to identify facilities producing, utilizing, or storing hazardous wastes.

## **Local Hazard Mitigation Plans**

Local jurisdictions develop, adopt, and update hazard mitigation plans to establish guiding principles for reducing hazard risk, as well as specific mitigation actions to eliminate or reduce identified vulnerabilities. Kings County Multi-jurisdictional Local Hazard Mitigation Plan (LHPM) was last fully updated in December 2012 and was updated to reflect the Equity and Social Justice Strategic Plan in 2020. The LHPM recognized earthquakes, floods, landslides, and wildfire as the local natural hazards. The LHMP also states mitigation strategies and actions that serve as the long-term blueprint for reducing potential losses. Activities such as issuing building permits, repairing roads and training first responders are examples of specific actions which can be taken to prevent or minimize damage. Such activities have been identified for each hazard in the LHMP (Kings County 2012).

## **Airport Land Use Compatibility Plans (ALUCP)**

There is one public-use airport included in the Kings County ALUCP: Hanford Municipal Airport (Kings County 1994). The Corcoran Airport, a private-use airport, also has an active ALUCP. The Lemoore Naval Air Station, a private airport, and its land use compatibility throughout the KCAG region is discussed in the Naval Air Station (NAS) Lemoore Joint Land Use Study (JLUS) (Kings County Association of Governments 2011). These ALUCPs establish areas of influence within which airport operations are likely to affect land uses or land uses could affect airport operations. Part of the ALUCPs' goals are to protect residents from the negative environmental noise, safety, and traffic impacts that can potentially be induced by airports. Safety and noise criteria are identified in the ALUCP and NASL JLUS so that land use conflicts with airport operations are minimized. Prior to amending a general plan, a local agency must refer the proposed action to the ALUC (Pub. Util. Code Sec. 21676, et seq.) for each city within the County and their general plans must be consistent with the ALUCP (Government Code Section 65302.2).

### **4.9.3 Impact Analysis**

#### **a. Methodology and Significance Thresholds**

Appendix G of the State CEQA Guidelines identifies criteria for determining whether a project's impacts would have a significant impact to hazards and hazardous materials:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;

3. Emit hazardous emissions or handles hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school;
4. Be located on a site which is included on a list of hazardous materials compiled by the Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area;
6. Impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Impacts related to impairment or interference of emergency response or evacuation plans are discussed in detail in Section 4.13, *Transportation*, under Impact T-4. Impacts related to exposure to wildland fires (Criterion 7), are discussed in detail Section 4.15, *Wildfire*, under Impact WF-1.

The methodology used for the following evaluation is based on a review of documents and publicly available information about hazardous and potentially hazardous conditions in the KCAG region to determine the potential for implementation of the 2022 RTP/SCS to result in an increased health or safety hazard to people or the environment. This includes county planning documents, and hazardous materials database information maintained by various state and federal agencies, such as DTSC and SWRCB. Due to the large area of the KCAG region, known sites of current or former contamination were not evaluated in detail, and physical surveys were not conducted. Rather, this program-level analysis is based on hazards typically associated with certain land uses and an overall understanding of the key safety concerns that could result from implementation of the 2022 RTP/SCS.

The evaluation of hazards and hazardous materials impacts assumes that the construction and development under the 2022 RTP/SCS would adhere to the latest federal, state, and local regulations, and conform to the latest required standards in the industry, as appropriate for individual projects.

## **b. Project Impacts and Mitigation Measures**

The following section discusses potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2022 RTP/SCS. Section 4.9.3.c summarizes the impacts associated with capital improvement projects proposed in the proposed 2022 RTP/SCS. Due to the programmatic nature of the proposed 2022 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the proposed 2022 RTP/SCS could result in the impacts as described in the following section.

**Threshold 1:** Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

**Threshold 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

**Impact HAZ-1      TRANSPORTATION IMPROVEMENT PROJECTS AND LAND USE SCENARIO ENVISIONED BY THE 2022 RTP/SCS MAY FACILITATE THE ROUTINE TRANSPORT, USE, OR DISPOSAL OF HAZARDOUS MATERIAL, AND MAY RESULT IN REASONABLY FORESEEABLE UPSET AND ACCIDENT CONDITIONS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

Land use and transportation projects associated with implementation of the 2022 RTP/SCS would temporarily increase the regional transport, use, storage and disposal of hazardous materials and petroleum products commonly used at construction sites, such as diesel fuel, lubricants, paints and solvents and asphalt and cement products containing strong basic or acidic chemicals. Hazardous waste generated during construction may consist of welding materials, fuel and lubricant containers, paint and solvent containers and discarded asphalt and cement products.

Construction associated with implementation of the 2022 RTP/SCS could result in impacts related to use of hazardous materials and disturbance of potentially hazardous materials, including asbestos. However, the most likely incidents involving construction-related hazardous materials are generally associated with minor spills or drips. Small fuel or oil spills are possible but would have a negligible impact on public health. All hazardous materials would be stored, handled, and disposed of according to the manufacturers' recommendations and spills would be cleaned up in accordance with applicable regulations. Hazardous materials spills or releases, including petroleum products such as gasoline, diesel, and hydraulic fluid, regardless of quantity spilled, must be immediately reported if the spill has entered or threatens to enter a water of the State, including a stream, lake, wetland, or storm drain, or has caused injury to a person or threatens injury to public health. Immediate notification must be made to the local emergency response agency, or 911, and the OES Warning Center. For non-petroleum products, additional reporting may be required if the release exceeds federal reportable quantity thresholds over a release period of 24 hours as detailed in HSC Section 25359.4 and in 40 CFR 302.4.

The DOT has identified one highway within the KCAG region as a hazardous material route (DOT 2020). Additionally, trucks transporting hazardous material would also have to use local collector and arterial streets to access individual project sites in the KCAG region. Transportation projects would also require the temporary storage and use of hazardous materials at locations along project roads. Thus, trucks transporting hazardous materials for project construction would use many of the same freeways, arterials, and local streets as other traffic. This would create a risk of accidents and associated release of hazardous materials for other drivers and for people along these routes, as well as truck drivers. Although the transportation of hazardous materials could result in accidental spills, leaks, toxic releases, fire, or explosion, the DOT prescribes strict regulations for the safe transportation of hazardous materials, as described in Title 49 of the CFR and the Hazardous Materials Transportation Act. These standard accident and hazardous materials recovery training and procedures are enforced by the state and followed by private state-licensed, certified, and bonded transportation companies and contractors.

The construction of land use and transportation projects included in the 2022 RTP/SCS that require demolition of existing structures, particularly older structures, would have the potential to expose

workers and the public to asbestos containing materials or dust containing asbestos. Construction could also occur in areas of naturally occurring asbestos, which could expose construction workers to asbestos. HSC Section 19827.5 requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. Mandatory compliance with asbestos abatement and disposal regulations and requirements, including SJVAPCD Rule 7050, would minimize the risk of exposure.

Land use projects facilitated by the 2022 RTP/SCS would increase population, jobs, and households and a variety of land uses including residential, commercial, and industrial. Specific uses such as dry cleaners, gas stations, and certain industrial uses would involve routine transport, use, and disposal of hazardous materials such as household hazardous wastes (e.g., paints, cleaning supplies, solvents, and petroleum products) and commercial and industrial hazardous waste. The operation of businesses facilitated by land use projects included in the 2022 RTP/SCS that use, create, or dispose of hazardous materials would be regulated and monitored by federal, state, and local regulations that provide a high level of protection to the public and the environment from the hazardous materials manufactured within, transported to, and disposed within the KCAG region. Use of hazardous materials at these businesses would also require permits and monitoring to avoid hazardous waste release through the local CUPA. During operation, businesses that store hazardous materials could potentially experience accidents or upset conditions that result from their routine use. These businesses would be required to prepare spill prevention, containment, and countermeasures plans (pursuant to 40 CFR 112) or, for smaller quantities, a spill prevention and response plan. These plans identify best management practices for spill and release prevention and provide procedures and responsibilities for rapidly, effectively, and safely cleaning up and disposing of any spills or releases. Oversight is provided by the CUPA. Pursuant to the requirements and liabilities of applicable regulations, the routine use or accidental spill of hazardous materials at business and industrial uses facilitated by the land use projects included in the 2022 RTP/SCS would not pose a substantial hazard to the public or the environment. Disposal of hazardous waste generated by these businesses would be subject to compliance with DTSC and Cal USEPA regulations.

Transportation projects included in the 2022 RTP/SCS include a variety of transportation modifications such as new travel lanes, auxiliary lanes, roadway widening, increased transit service and expansion, and other maintenance and rehabilitation projects. The projects may increase the capacity of roadways to transport hazardous materials. Roadway projects in the 2022 RTP/SCS would also improve road safety, as well as pedestrian and bicycle safety, thereby potentially reducing transportation-related hazardous materials risks because fewer accidents would occur on safer roads. Based on the requirements of Title 49 CFR 171–180, construction and operation of transportation projects would provide for the safe transport and disposal of hazardous waste.

The proposed 2022 RTP/SCS encourages infill development and increased population and employment density near public transit stops, including rail. There could also be increased urbanization along transportation corridors. Thus, the number of people potentially exposed to hazardous conditions could increase as a result of land use projects included in the proposed 2022 RTP/SCS. Although exposure to hazardous conditions could increase, the routine transport, use, and storage of potentially hazardous materials such as fuels, lubricants, solvents, and oils would be required to be conducted in accordance with all applicable State and federal laws, such as the Hazardous Materials Transportation Act, Resource Conservation and Recovery Act, the California Hazardous Material Management Act, and the CCR, Title 22. As described in Section 4.9.2,

*Regulatory Setting*, the DOT regulates the transport of hazardous materials by all modes, including rail and highway under the regulations of the Hazardous Materials Transportation Act. The Local Community Rail Security Act of 2006 requires all rail operators to provide security risk assessments to California Public Utilities Commission, which includes emergency response procedures and communication protocols. Mandatory implementation of additional federal, state, and local requirements such as Cal ARP Program and the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act would minimize potential exposure to the public and the environment from accidental releases. Therefore, although population density would increase in proximity to major transportation corridors that are used to transport hazardous and flammable materials, the increased risk of hazard from routine transport or accidental upsets during transport would be minimal.

In conclusion, both planned land use projects and transportation projects could increase the routine transport, use, storage, and disposal of hazardous wastes in the KCAG region. The planned land use projects and transportation projects could also increase the potential for unintentional upset and accident conditions. Because of the existing federal, state, and local regulations and oversight in place that would effectively reduce the inherent hazard associated with routine transport, use, storage and disposal activities, and regulations that effectively reduce the potential for individual projects to create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions, impacts would be less than significant.

### **Mitigation Measures**

No mitigation measures are required.

**Threshold 3:** Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school

**Impact HAZ-2      TRANSPORTATION IMPROVEMENT PROJECTS AND THE LAND USE SCENARIO ENVISIONED IN THE 2022 RTP/SCS WOULD NOT EMIT HAZARDOUS EMISSIONS OR HANDLE HAZARDOUS OR ACUTELY HAZARDOUS MATERIALS, SUBSTANCES OR WASTE WITHIN ONE-QUARTER MILE OF AN EXISTING OR PROPOSED SCHOOL. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

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As discussed in Impact HAZ-1, the land use projects included in the proposed 2022 RTP/SCS could include uses such as dry cleaners, gas stations, and certain industrial uses that would involve routine handling of hazardous materials and waste. Therefore, the proposed 2022 RTP/SCS could increase the amounts of hazardous materials handled within 0.25 mile of schools, depending on the specific location of land uses relative to schools in the region. There are over 28,000 students enrolled in KCOE schools county-wide. Certain industrial uses, such as chemical plants, may also generate hazardous emissions as byproducts, typically in the form of air emissions.

Any new commercial or industrial operations in proximity to existing schools would be required to comply with regulations related to the routine use, storage, and transport of hazardous materials. Land uses that would generate emissions or involve the handling of extremely hazardous materials, substances, or waste within one-quarter mile of an existing school must notify the affected school district pursuant to Public Resources Code Section 21151.4. As discussed in detail above, compliance with existing regulations would reduce the exposure to potential hazards associated with these land uses.

For new schools that may be developed to address the population distribution changes resulting from the land use scenario included in the proposed 2022 RTP/SCS, the California Education Code,

as discussed in Section 4.9.2, would ensure that school sites would be free of contamination or cleaned up to a level that would protect students and staff that would occupy a new school site. Therefore, hazardous emissions and handling impacts on schools related to land use projects included in the proposed 2022 RTP/SCS would be less than significant.

The transportation projects included in the proposed 2022 RTP/SCS could increase the capacity to transport hazardous materials on roads within the KCAG region, including within 0.25 mile of schools. However, all materials must be used, stored, and disposed of in accordance with applicable federal, state, and local laws, which would effectively reduce the potential impacts associated with hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or potential future school. Transportation projects in the proposed 2022 RTP/SCS may also improve road safety, thereby reducing the potential for accidents in proximity of schools related to hazardous materials. Therefore, the hazardous materials impacts related to existing and proposed schools from implementation of the transportation projects included in the proposed 2022 RTP/SCS would be less than significant.

### Mitigation Measures

No mitigation measures are required.

**Threshold 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 the environment

**Impact HAZ-3 THE PROPOSED 2022 RTP/SCS INCLUDES TRANSPORTATION IMPROVEMENT PROJECTS AND A LAND USE SCENARIO THAT COULD OCCUR ON SITES ON THE LIST OF HAZARDOUS MATERIAL SITES COMPILED BY GOVERNMENT CODE SECTION 65962.5. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

Throughout the KCAG region there are many sites where historical releases of hazardous materials or wastes have occurred; these are listed in environmental databases pursuant to Government Code Section 65962.5. As described in Section 4.9.1, there are several documented sites of contamination in some stage of DTSC or SWRCB oversight in the region. These sites range from small releases that have had localized effects on private property and have already been remediated to large scale releases from long-term historical industrial practices that have had wider ranging effects on groundwater. Specific sites of documented contamination are not evaluated in this analysis because this is a programmatic level document. Because the precise timing of future land use developments is unknown, an evaluation of the potential for specific sites of known contamination within the KCAG region to be affected by land use projects included in the proposed 2022 RTP/SCS cannot be conducted. However, land use can be used to generally characterize the potential for release of hazardous materials (i.e., hazardous materials releases are more likely to have occurred in areas that currently or historically supported industrial uses). In addition, construction activities that disturb subsurface materials could encounter previously unidentified contamination from past practices or placement of undocumented fill or even unauthorized disposal of hazardous wastes. Encountering these hazardous materials could expose workers, the public or the environment to adverse effects depending on the volume, materials involved, and concentrations.

Development on identified hazard sites within the KCAG region would be preceded by investigation, remediation, and cleanup under the supervision of the RWQCB, DTSC, or the applicable hazardous materials division (e.g., local oversight or Kings County Department of Public Health) before

construction activities could begin. The agency responsible for oversight would determine the types of remediation and cleanup required and could include excavation and off-haul of contaminated soils, installation of vapor barriers beneath habitable structures, continuous monitoring wells onsite with annual reporting requirements, or other mechanisms to ensure the site does not pose a health risk to workers or future occupants. In addition, in many instances implementing and/or permitting agencies require submittal of a Phase I ESA prior to approval or implementation of a project. These studies include research in a variety of government databases to determine whether the site has had prior underground tanks or other industrial uses that could result in hazardous materials on or below the ground surface. However, with the exceptions for streamlining projects in transit priority areas and siting public schools, there are no general regulatory requirements to conduct a Phase I ESA, or subsequent investigation of potential contamination. Therefore, because it cannot be assumed these practices would regularly occur, the impacts related to land use projects included in the proposed 2022 RTP/SCS are potentially significant because there could be significant hazard to the public or the environment.

Development on sites listed in environmental databases pursuant to Government Code Section 65962.5 would be required to undertake remediation procedures prior to grading and development under the supervision of the applicable agency, depending upon the nature of any identified contamination. Nevertheless, the impacts of transportation projects included in the proposed 2022 RTP/SCS would be significant because there could be significant hazards to the public or the environment related to projects located on sites listed pursuant to Government Code Section 65962.5. The following mitigation measures would reduce this impact.

### **Mitigation Measures**

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures where applicable for transportation projects that would result in impacts that would potentially be located in areas with existing contamination. The County and cities in the KCAG region can and should implement these measures, where relevant to land use projects implementing the proposed 2022 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

#### *HAZ-3 Site Remediation*

If an individual project included in the proposed 2022 RTP/SCS is located on or near hazardous materials and/or waste site pursuant to Government Code Section 65962.5, the implementing agency shall prepare a Phase I ESA in accordance with the American Society for Testing and Materials' E-1527-05 standard. For work requiring any demolition or renovation, the Phase I ESA shall make recommendations for any hazardous building materials survey work that shall be done. All recommendations included in a Phase I ESA prepared for a site shall be implemented. If a Phase I ESA indicates the presence or likely presence of contamination, the implementing agency shall require a Phase II ESA, and recommendations of the Phase II ESA shall be fully implemented. Examples of typical recommendations provided in Phase I/II ESAs include removal of contaminated soil in accordance with a soil management plan approved by the local environmental health department; covering stockpiles of contaminated soil to prevent fugitive dust emissions; capturing groundwater encountered during construction in a holding tank for additional testing and characterization and disposal based on its characterization; and development of a health and safety plan for construction workers.



For any project located on or near sites that are not listed and do not have the potential for residual hazardous materials as a result of historic land uses, no action is required unless unknown hazards are discovered during development. In that case, the implementing agency shall discontinue development until DTSC, RWQCB, SJVAPCD, and/or other responsible agency issues a determination, which would likely require a Phase I ESA as part of the assessment.

#### **IMPLEMENTING AGENCIES AND TIMING**

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

#### **Significance After Mitigation**

Implementation of Mitigation Measure HAZ-3 would reduce site-related hazardous materials impacts to a less than significant because project sites with hazardous material contamination that on the list compiled by the Government Code Section 65962.5 would be identified prior to commencement of project construction. Additionally, prior to commencement of construction, measures to remediate contamination, such as containment and disposal of contaminated soil pursuant to federal and state regulations would be required. However, it cannot be guaranteed that all future project level impacts can be mitigated to a less than significant level. There additional mitigation measures to reduce this impact to less than significant levels are feasible. Therefore, this impact would remain significant and unavoidable.

<p><b>Threshold 5:</b> For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area</p>
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#### **IMPACT HAZ-4      TRANSPORTATION IMPROVEMENT PROJECTS AND THE LAND USE SCENARIO ENVISIONED IN THE PROPOSED 2022 RTP/SCS LOCATED WITHIN AN AIRPORT LAND USE PLAN OR WITHIN TWO MILES OF A PUBLIC OR PUBLIC USE AIRPORT WOULD NOT RESULT IN A SAFETY HAZARD OR EXCESSIVE NOISE FOR PEOPLE RESIDING OR WORKING IN THE PROJECT AREA. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

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The land use scenario and transportation projects included in the 2022 RTP/SCS may be located at or near a public use airport or a private airstrip. Impacts associated with development at or near existing airports are largely dependent upon site- and project-specific information that is not currently available and would be provided in the future as projects within the 2022 RTP/SCS undergo project level environmental review. However, any development and subsequent planning decisions in proximity to airports would be subject to review under the State Aeronautics Act provided under Public Utilities Code § 21167 et seq. Specific projects that may affect navigable airspace are also subject to FAA review, as outlined under 14 CFR Parts 77.5, 77.7, and 77.9. Additionally, the 2022 RTP/SCS would not change existing land use designations or zoning, and land use development would be subject to existing zoning regulations, including height restrictions and restrictions on residential development within the identified noise contours of an airport that exist in any General Plan that features an airport within its service area. Because there are existing federal, State, and local regulations and oversight in place that would effectively reduce the inherent hazard associated with development near airports to an acceptable and safe level, the impacts of the 2022 RTP/SCS would be less than significant.

## Mitigation Measures

No mitigation measures are required.

### c. Specific 2022 RTP/SCS Projects That May Result in Impacts

All proposed 2022 RTP/SCS transportation projects listed in Chapter 2, *Project Description*, that are located on the site list compiled by the Government Code Section 65962.5 would have the potential to result in hazardous materials impacts described in Impacts HAZ-1 and HAZ-3. Specific analysis would be required as individual land use projects are implemented to determine the project specific magnitude of exposure to or potential release of hazardous materials. Construction of any number of the transportation projects would require the use of petroleum products and other hazardous materials. For Impact HAZ-3, additional specific analysis described in the above mitigation measures would need to be conducted for listed sites as individual projects are implemented in order to determine the magnitude of project-specific impacts.

## 4.9.4 Cumulative Impacts

The cumulative impact analysis area for the hazards and hazardous materials analysis consists of the KCAG region and adjoining counties. Information regarding these adjoining counties can be found in Section 3, *Environmental Setting*, Subsection 3.3.3.1, *Cumulative Impact Methodology*. Future development in this region relative to exposure to hazards is considered in the analysis. This cumulative extent is used to evaluate potential impacts from the increase of hazards and hazardous materials within the context of regional development.

The potential impacts related to hazards and hazardous materials are generally related to site specific and project specific characteristics and conditions; however, hazardous sites or releases can occur across multiple adjoining property or jurisdictions. Although the transport of hazardous materials may occur on rail or on roadways, such as I-5, that traverse both the KCAG region and adjacent counties, there are existing federal, state, and local regulations and oversight in place that would effectively reduce the inherent hazard associated with routine transport of such materials. Regulations and oversight, as outlined above in Section 4.9.2, would also effectively reduce the potential for individual projects to create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions, within the KCAG region as well as adjoining counties. Land use development envisioned as part of the proposed 2022 RTP/SCS could result in the development of sites listed in environmental databases pursuant to Government Code Section 65962.5. Although development of listed sites would be required to undergo remediation and comply with Mitigation Measure HAZ-3, cumulative impacts related to hazards and hazardous materials would be significant, and implementation of the proposed 2022 RTP/SCS would result in cumulatively considerable impacts pre-mitigation, and less-than-cumulatively considerable post-mitigation.

Impacts related to airport hazards are also site-specific, depending on the characteristics and design of individual projects and their location relative to distance and location of nearby airports. Existing regulations place limitations on the types of development that can be permitted within various aircraft zones surrounding an airport, such as building height restrictions or prohibiting residential occupancy. Mandatory compliance with these regulations would prevent substantial hazards related to airports. Cumulative impacts would be less than significant and implementation of the proposed 2022 RTP/SCS would not result in cumulatively considerable impacts.

## 4.10 Hydrology and Water Quality

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This section evaluates the potential effects on hydrology and water quality resulting from implementation of the proposed 2022 RTP/SCS.

### 4.10.1 Setting

#### **Hydrological Setting**

The KCAG region is part of the Tulare Lake Basin hydrologic system. The KCAG region is divided into three main hydrologic subareas: the northern alluvial fan and basin area, the Tulare Lake Zone, and the southwestern uplands. The northern alluvial fan and basin area is characterized by southwest to south flowing rivers, creeks, and irrigation canal systems that convey surface water east to west from the Sierra Nevada Mountain range toward the Tulare Lake Zone. The dominant hydrologic features in the alluvial fan and basin subarea includes the Kings River, Kaweah River, and the Tule River, as well as their major tributaries (Kings County 2009). The southwestern upland area is characterized by northwest to southeast trending valleys and ridges. Ridgetops within this area reach elevations up to 3,500 feet. In contrast, the lowest elevation of the Tulare Lake bed is approximately 175 feet (Kings County 2009). As such, surface water drains east from the southwestern upland area.

There are five groundwater Subbasins that underlie the KCAG region: the Westside Subbasin, the Kaweah Subbasin, the Kings Subbasin, the Pleasant Valley Subbasin, and the Tulare Lake Subbasin (Kings County 2020). The Westside Subbasin is located between the foothills of the Coast Range geomorphic province and the San Joaquin River drainage and Fresno Slough on the east. The average annual precipitation of the Westside Subbasin ranges from approximately seven to nine inches (California Department of Water Resources [DWR] 2006a). The Kaweah Subbasin contains rivers and streams including the Kaweah River, which acts as the primary source of groundwater recharge to the area. Average annual precipitation ranges from seven to 13 inches, with the greater portion of precipitation occurring on the eastern side of the Kaweah Subbasin (DWR 2004). The Kings Subbasin is bounded by the San Joaquin River to the north, the Delta-Mendota and Westside Subbasins to the west, the Sierra Nevada foothills to the east, and the Kings River to the south. Average annual precipitation ranges from seven to 10 inches with more precipitation occurring on the eastern side of the Kings Subbasin (DWR 2006b). The Pleasant Valley Subbasin abuts the Westside and Tulare Lake subbasins at its eastern boundary and contains several small, ephemeral streams that enter the basin from the surrounding mountains. Average precipitation values range from approximately seven to nine inches (DWR 2006c). The Tulare Lake Subbasin is bounded on the south by the Kings-Kern county line, on the west by the California Aqueduct, on the north by the Kings Subbasin, and the east by the Kaweah and Tule subbasins. The Tulare Lake Subbasin consists of land within the Tulare Lake bed. Average annual precipitation is approximately seven inches throughout the subbasin and approximately nine inches at its northern margin (DWR 2006d).

The KCAG region is within the Central Valley Regional Water Quality Control Board's (CVRWQCB) jurisdiction. The CVRWQCB is the primary agency responsible for overseeing water quality issues in the region. The CVRWQCB implements the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan) (CVRWQCB 2018). The KCAG region is also host to eight Groundwater Sustainability Agencies and three Integrated Regional Water Management agencies (Kings County 2020; DWR 2022a).

## Water Supply

The KCAG region sources its water from groundwater and various surface water sources including the Kings River and State Water Project. The State Water Project, or California Aqueduct, is a water storage and delivery system that extends approximately 705 miles north to south (DWR 2022b). However, groundwater is the major source of water for the cities of Hanford, Lemoore, and Corcoran (Mid-Kings River Groundwater Sustainability Agency et al. 2020). Groundwater is also a source of agricultural irrigation water for the KCAG region. The Kings, Kaweah, Tulare Lake, and Westside subbasins are all designated as Critically Overdrafted Basins by DWR (DWR 2020a). Table 4.10-1 below gives the estimated groundwater pumping amounts from the subbasins within the KCAG region.

**Table 4.10-1 Groundwater Pumping in Kings County (2020)<sup>1</sup>**

Groundwater Subbasin	Agricultural Pumping (AFY)	Urban Pumping (AFY)	Industrial Pumping (AFY)	Managed Recharge (AFY)	Native Vegetation (AFY)	Other Pumping (AFY)	Water Budget (AFY)
Kaweah	949,700	64,600	21,800	5,800	400	0	1,042,300
Kings	2,082,555	168,571	0	21,601	0	42,310	2,315,037
Pleasant Valley	8,948	5,395	0	0	0	24	14,367
Tulare Lake	339,474	27,118	0	0	0	8,701	375,293
Westside	632,000	0	0	0	0	130	632,130
<b>Total</b>	<b>4,012,677</b>	<b>265,684</b>	<b>21,800</b>	<b>27,401</b>	<b>400</b>	<b>51,165</b>	<b>4,379,127</b>

AFY= Acre-feet per year

<sup>1</sup>The Tulare Lake Subbasin does not have an available 2021 annual report. 2020 annual report values were used.

Source: DWR 2022c

The subbasins within the KCAG region have experienced depletions in groundwater levels (DWR 2021). Future concerns include an increased groundwater demand to supply continuing agricultural operations and a growing population.

## Water Quality

Water quality is a concern due to its potential impacts on, organisms, ecosystems, and other environmental conditions. Quality is determined by factors such as native condition of surface water and groundwater, and by the amount and source of contamination, both natural and human induced.

### Surface Water

A major source of pollution to surface waters is polluted storm water from urban and agricultural runoff. Urban runoff pollutants are generally collected by stormwater conveyance systems and often discharge into water bodies from point sources such as outflow pipes. Agricultural runoff can be conveyed into stormwater systems but can also percolate directly into groundwater over large areas as nonpoint discharge. Common pollutants from urban and agricultural runoff include pesticides, fertilizers, green waste, animal waste, human waste, gasoline and motor oil, and trash.

Under Section 303(d) of the Clean Water Act, states are required to develop and update a list of all water bodies under their jurisdiction that fail to meet water quality standards even after point sources of pollution have utilized the minimum requirements for pollution control. These are

referred to as '303(d) impaired' bodies. 303(d) impaired water bodies within the KCAG region are listed in Table 4.10-2 below.

**Table 4.10-2 303(d) Impaired Water Bodies in the KCAG Region**

Water Body	Impairment Pollutant
Kings River, Lower (Island Weir to Stinson and Empire Weirs)	Molybdenum, Electrical conductivity, Toxaphene
Kings River, Lower (Pine Flat Reservoir to Island Weir)	Toxicity, Alkalinity as calcium carbonate
Cross Creek	Toxicity
Mill Creek	Toxicity, Ammonia (unionized)
Tule River, Lower	Toxicity

Source: State Water Resources Control Board (SWRCB) 2021

Surface water quality is impaired from human-induced pollution primarily in the valley floor area, and major point sources of contamination include municipal wastewater, oil field wastewater, and solid waste sites, while the primary non-point source of pollutants is agricultural runoff (CVRWQCB 2018).

#### *Groundwater*

Groundwater in the KCAG region is an internally drained and closed basin. Salts are introduced into the basin with imported water supplies. Excessive salt loading, left behind as a result of water leaving the basin through evaporation or evapotranspiration, can result in degraded water supply (Kings County 2009). Approximately 145,000 tons of salt is transported into the Tulare Lake Basin via rivers (CVRWQCB 2018). The continual overdraft of groundwater continues to exacerbate the problem as deeper water is used and overall salt concentrations increase. In 2017, the CVWRQCB removed Municipal and Domestic Supply and Agricultural Supply designations from delineated portions of Tulare Lake Basin groundwater in order to limit salinity concentrations from increasing and ensure clean drinking water (CVRWQCB 2017).

### **Flooding and Dam Inundation**

#### *Flooding*

Flooding can occur as a result of storm events that lead to excessive rainfall. Based on the Federal Emergency Management Agency (FEMA) Flood Maps, there are areas within KCAG that are designated as flood zones (Kings County 2009). A description of the flood zones and their respective locations in the KCAG region can be found below (Kings County 2009):

- Zone A: This zone is listed as a high risk and special flood hazard area. In addition, FEMA has designated these lands as within the 100-year floodplain, meaning a flood that has a one-percent chance of occurring in any given year. These areas are subject to inundation by this one percent-annual-chance flood event. These areas occur primarily between Kettleman City and Corcoran and are bounded to the north by the community of Stratford.
- Zone AE: This zone is listed as a high risk and special flood hazard area. These areas are subject to inundation by a one percent-annual-chance flood event. Base Flood Elevations, the level surface water is anticipated to reach during a flood, have been determined for these areas. These areas occur north of Corcoran and extend approximately eight miles north.

- Zone AH: This zone is listed as a high risk and special flood hazard area. Further, these areas are subject to inundation by the one percent-annual-chance shallow flooding where average depths of water are approximately one to three feet. These areas are scattered throughout the KCAG region, and occur adjacent to land designated Zone A.

In addition, the DWR has also identified additional “Special Flood Hazard” areas which includes land northerly adjacent to the community of Armona, and westerly adjacent to the communities of Kettleman City, Home Garden, and Stratford (Kings County 2009). The locations of flood zones throughout the KCAG region can be found on Figure 4.10-1 below.

#### *Dam Inundation*

Inundation can result from dam failure, which refers to the breakdown, collapse, or other failure of a dam structure characterized by the uncontrolled release of impounded water. Dam failure can be caused by prolonged rainfall that produces flooding or other natural events such as earthquakes or landslides. There are two dams, Pine Flat and Terminus, if breached could cause substantial flooding in areas within the northeast KCAG region, including the cities of Lemoore and Hanford and the communities of Stratford, Armona, and Home Garden (Kings County 2009). If Terminus failed while at full capacity, its floodwaters would arrive to the KCAG region within approximately 12 hours. If Pine Flat failed while at full capacity, its floodwaters would arrive to the KCAG region within approximately five hours (Kings County 2009).

#### *Stormwater*

During heavy rains, flooding can also occur on streets and roads within urbanized areas when stormwaters cannot permeate into the soil due to impermeable surfaces such as asphalt pavement or building footprints. Flooding can also occur when stormwater drainage systems are overwhelmed due to unanticipated rain events, insufficient size, or damage, and clogging from lack of maintenance. Flooding can also occur alongside or on major road systems such as highways due to similar issues of impermeable surfaces and/or insufficient drainage.

#### *Tsunami and Seiche*

Tsunamis are high sea waves that are caused by earthquake, underwater volcanic eruptions, or other disturbances. A seiche is a temporary disturbance or oscillation in water level of a lake or partially enclosed body of water. The KCAG region is inland, with its western border approximately 60 miles east of the California coastline. There are no large lakes or reservoirs that would be at risk of a seiche. Thus, there is no tsunami or seiche risk in the KCAG region.

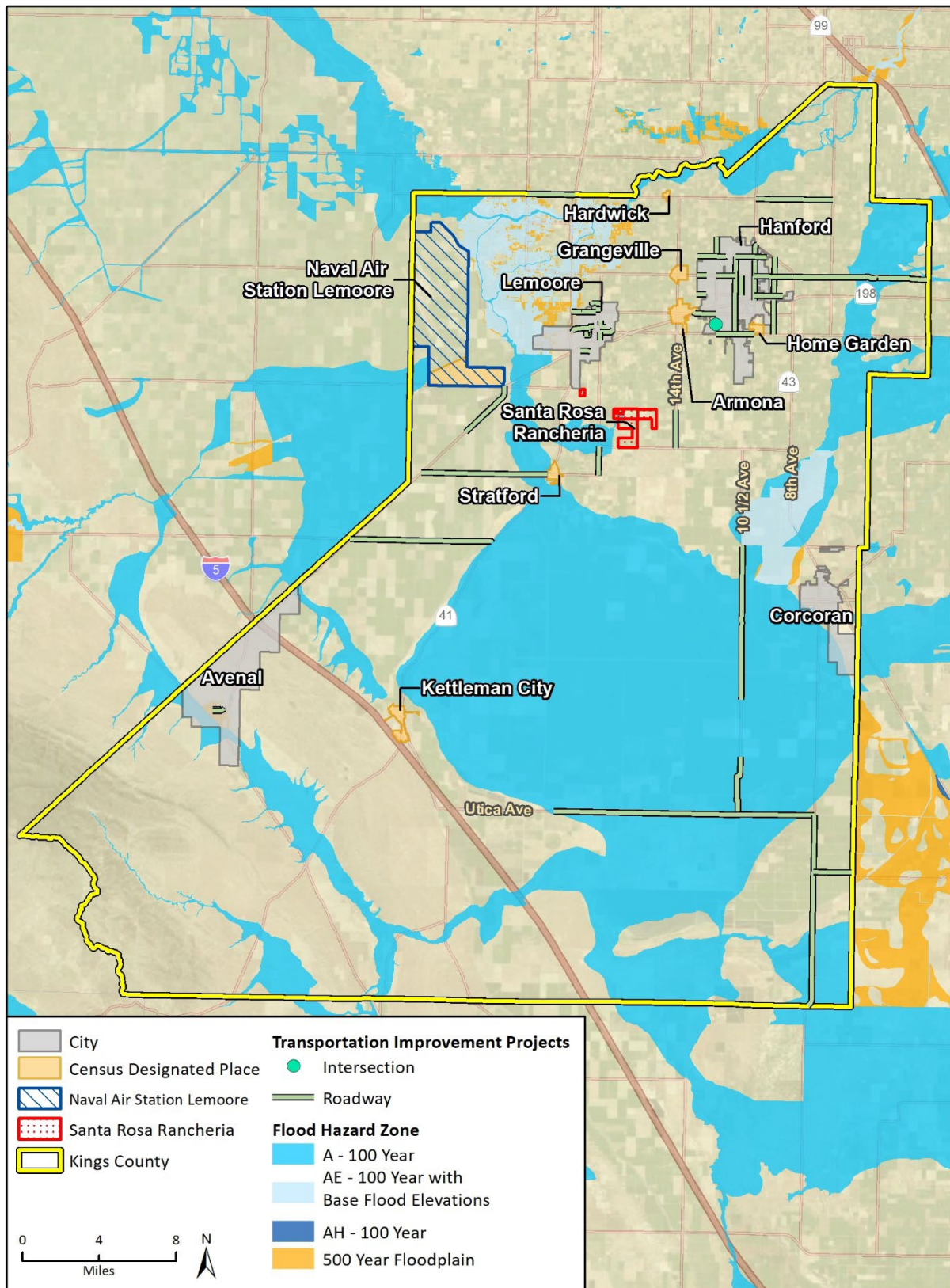
## 4.10.2 Regulatory Setting

### **a. Federal Laws, Regulations, and Policies**

#### *Clean Water Act*

Congress enacted the Clean Water Act (CWA), 33 U.S.C. § 1251 et seq., formerly the Federal Water Pollution Control Act of 1972, with the intent of restoring and maintaining the chemical, physical and biological integrity of the waters of the United States (WOTUS). The CWA requires states to set standards to protect, maintain and restore water quality through the regulation of point source and non-point source discharges to surface water and the setting of water quality standards (CWA

Figure 4.10-1 Flood Hazards in the KCAG Region



Imagery provided by Microsoft Bing and its licensors © 2022.  
Additional Sources Provided by: Kings County 2020, Esri 2020, Federal Emergency Management Agency (FEMA), 2021.

Fig X Flood Hazard in the KCAG Region



Section 303). Point source discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). NPDES permitting authority is administered by the State Water Resource Control Board (SWRCB) and the nine RWQCBs (CWA Section 401).

### **CLEAN WATER ACT SECTION 303(d)**

Under Section 303(d) of the CWA, States are required to develop and update a list of all water bodies under their jurisdiction which fail to meet water quality standards even after point sources of pollution have utilized the minimum levels of pollution control. These are referred to as '303(d) impaired' bodies. Jurisdictions must establish priority rankings for 303(d) impaired water bodies and develop action plans to improve water quality to minimum standards. The plans include the setting of TMDLs for the pollutants which are impairing the water bodies; these limits are stricter than the normal minimum standards in order to bring the impaired bodies into compliance over time.

### **CLEAN WATER ACT SECTION 401**

Under Section 401 of the CWA, the RWQCBs have regulatory authority over actions in waters of the U.S. (WOTUS) through the issuance of water quality certifications, which are issued in conjunction with any federal permit (e.g., permits issued by the United States Army Corps of Engineers [USACE] under Section 404 of the CWA, described below). This section requires the issuance of certification by the RWQCB that state water quality standards will not be violated.

### **CLEAN WATER ACT SECTION 402**

Section 402 of the CWA regulates point-source discharges to surface waters, among other provisions, requires that all construction sites on an acre or greater of land, and all municipal, industrial, and commercial facilities discharging wastewater or stormwater directly from a point source (e.g., pipe, ditch, or channel) into WOTUS must obtain an NPDES permit. All NPDES permits are written to ensure that the surface water receiving discharges will achieve specified water quality standards.

In California, the NPDES program is administered by the SWRCB through the RWQCBs and requires municipalities to obtain permits that outline programs and activities to control wastewater and stormwater pollution. The CWA prohibits discharges of stormwater or wastewater unless the discharge is in compliance with an NPDES permit. Municipal stormwater and wastewater discharges from Municipal Separate Storm Sewer Systems (MS4s) and all other discharges are regulated by the local permitting authority where USEPA has approved the agency. Most MS4 Permits are tailored versions of general USEPA permits, while many industrial discharge permits are individual permits created for the specific discharge requirements of the project. KCAG region discharges are regulated under the Statewide Phase II General Permit (Order 2003-0005-DWQ).

The SWRCB is the permitting authority in California, issues general MS4 permits, and adopted an NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order 2009-0009, as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). The order applies to construction sites or other projects that include one or more acre of soil disturbance, as required by the CWA, but also to projects that disturb less than one acre but which, in the RWQCBs' determination, may pose a threat to water quality. Containment and spill cleanup are encompassed in the Storm Water Pollution Prevention Plan (SWPPP) which is required to be developed as a condition of permit issuance. The SWPPP must include measures to ensure that: all pollutants and their sources are controlled; non-stormwater discharges are identified and eliminated, controlled, or treated; site best management practices



(BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges; and BMPs installed to reduce or eliminate pollutants after construction are completed and maintained. Any project implementing the proposed 2022 RTP/SCS that disturbs more than an acre, or that the CVRWQCB determines presents a potential impact to water quality, would be required to obtain coverage under either a specific permit or the Construction General Permit.

Small amounts of construction-related dewatering are covered under the Construction General Permit, but large amounts of dewatering would be required to comply with the CVRWQCB's General Dewatering Permit (Order R5-2013-0074). Dewatering related to projects implementing the proposed 2022 RTP/SCS is likely to be limited in scope, but larger projects or those which are longer in duration may require coverage under the Low Threat Discharge and Dewatering Permit from the CVRWQCB.

#### **CLEAN WATER ACT SECTION 404**

Under Section 404 of the Clean Water Act, proposed discharges of dredged or fill material into WOTUS require USACE authorization. The USACE identifies wetlands using a multi-parameter approach, which requires positive wetland indicators in three distinct environmental categories: hydrology, soils, and vegetation. According to the *Corps of Engineers Wetlands Delineation Manual* (1987), except in certain situations, all three parameters must be satisfied for an area to be considered a jurisdictional wetland. The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (2008) is also used when conducting jurisdictional wetland determinations in areas identified within the boundaries of the region, including the KCAG region.

#### *National Flood Insurance Act and Flood Disaster Protection Act*

The National Flood Insurance Act of 1968 made flood insurance available for the first time. The Flood Disaster Protection Act of 1973 made the purchase of flood insurance mandatory for the protection of property located in Special Flood Hazard Areas. These laws led to mapping of regulatory floodplains and to local management of floodplain areas according to guidelines that include prohibiting or restricting development in flood hazard zones.

#### *Federal Emergency Management Agency*

FEMA administers the NFIP to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps (FIRMs) that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones. FEMA's minimum level of flood protection for new development is the 100-year flood event.

FEMA has also developed requirements and procedures for evaluating earthen levee systems and mapping the areas affected by those systems. Levee systems are evaluated for their ability to provide protection from 100-year flood events and the results of this evaluation are documented in the FEMA Levee Inventory System (FLIS). Levee systems must meet minimum standards and must be maintained according to an officially adopted maintenance plan. Other FEMA levee system evaluation criteria include structural design and interior drainage.

### *Executive Order 11988*

Executive Order (EO) 11988 Floodplain Management directs federal agencies to avoid short- and long-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development whenever there is a practicable alternative. Additionally, EO 11988 requires the prevention of uneconomic, hazardous, or incompatible use of floodplains; protection and preservation of the natural and beneficial floodplain values; and consistency with the standards and criteria of the National Flood Insurance Program.

## **b. State Laws, Regulations, and Policies**

### *Porter Cologne Water Quality Control Act*

The Porter Cologne Water Quality Control Act of 1967 (Water Code § 13000 et seq.) is the primary water-quality legislation in California and the mechanism for implementation of California's authority under Sections 303, 401, and 402 of the CWA. The Porter-Cologne Water Quality Control Act requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect State waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The Water Quality Control Plan, or Basin Plan, protects designated beneficial uses of State waters through the issuance of Waste Discharge Requirements (WDRs) and through the development of TMDLs. Any entity proposing to discharge waste that could affect the quality of the waters of the State must make a report of the waste discharge to the RWQCB or SWRCB, which in turn issues WDRs, in compliance with the Porter-Cologne Act.

The CVRWQCB's Basin Plan for the Tulare Lake Basin covers the region and is the Basin Plan considered in this analysis. It includes water quality objectives and TMDLs for the 303(d) bodies listed in Table 4.10-2, beneficial uses for waters within the region, and an implementation plan.

Under the Porter-Cologne Act's authority, SWRCB adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State, for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The policy consists of four major elements: 1) a wetland definition; 2) a framework for determining if a feature that meets the wetland definition is a water of the state; 3) wetland delineation procedures; and 4) procedures for the submittal, review, and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities.

### *Antidegradation Policy*

California's antidegradation policy, formally known as the Statement of Policy with Respect to Maintaining High Quality Waters in California, restricts degradation of surface and groundwaters. It protects waters where existing water quality is higher than necessary for the protection of beneficial uses. Any actions with the potential to adversely affect water quality must be consistent with the maximum benefit to the people of the State; not unreasonably affect present and anticipated beneficial use of the water; and not result in water quality less than prescribed in water quality plans and policies.

### *Caltrans Statewide NPDES Permit*

The California Department of Transportation (Caltrans) was issued the nation's first statewide stormwater NPDES permit (Order 99-06-DWQ) in 1999 by the SWRCB. The Caltrans Permit requires Caltrans to regulate nonpoint source discharge from its properties, facilities, and activities. The Caltrans Permit requires development of a program for communication with local agencies and coordination with other municipal separate storm sewer system (MS4) programs where those programs overlap geographically with Caltrans facilities. As part of the permit, Caltrans is required to create and annually update a Stormwater Management Plan (SWMP) that is used to outline the regulation of pollutant discharge caused by current and future construction and maintenance activities. SWMP requirements apply to discharges from Caltrans stormwater conveyances, including catch basins and drain inlets, curbs, gutters, ditches, channels, and storm drains. The SWMP must be approved by the SWRCB, and as specified in the permit, it is an enforceable document. Compliance with the permit is measured by implementation of the SWMP. Caltrans' policies, manuals and other guidance related to stormwater are intended to facilitate implementation of the SWMP. Caltrans also requires all contractors to prepare and implement a program to control water pollution effectively during the construction of all projects.

### *Urban Water Management Planning Act*

In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code, Section 10610 et seq.), which requires urban water suppliers to develop Urban Water Management Plans (UWMP) to actively pursue the efficient use of available supplies as well as conduct drought assessments and planning. This Act also requires the provision of water service to be affordable to lower income households (Section 10631.1). Similarly, Government Code Section 65589.7 (Senate Bill [SB] 1087) requires water service providers to reserve water allocations for low-income housing. Every five years, water suppliers are required to update their UWMPs to identify short-term and long-term water demand management measures to meet growing water demands.

### *Sustainable Groundwater Management Act*

In September 2014, the state passed legislation requiring that California's critical groundwater resources be sustainably managed by local agencies. SGMA gives local agencies the power to sustainably manage groundwater. It required DWR to establish priority levels for groundwater basins within the State based on their level of overdraft and required Groundwater Sustainability Agencies (GSAs) to develop Groundwater Sustainability Plans (GSPs) for medium- and high-priority groundwater basins that would bring the basins into sustainability by 2040 or 2042. Basins determined to be in critical overdraft were required to develop GSPs first. All five subbasins are medium or high priority, and four are critically overdrafted. The plans reviewed by DWR for the Kaweah, Kings, Tulare Lake, and Westside subbasins have been deemed incomplete, while the GSP for the Pleasant Valley Subbasin is currently under review (DWR 2022d).

Along with mandating the formation of GSAs, SGMA provided the newly formed GSAs a set of tools to assist with groundwater management, including the ability to conduct investigations, levy fees, determine a basin's sustainable yield, and measure and limit groundwater extraction within their area. However, none of the GSPs approved to-date include actions beyond public outreach/education, conducting investigations, and levying fees; some propose voluntary extraction measurement programs and clearly envision mandatory measurement programs being implemented in regional and local codes, but none dictate groundwater limits. Such action would have to be preceded by the determination of a basins' sustainable yield through exercising of GSA

statutory investigative powers and would have to be implemented through the promulgation of regulations in a traditional legislative process. In general, adopted GSPs call for increased data-gathering, including through expanded use of voluntary metering of individual wells. Many local governments already require metering on new wells, and where this is the case, many GSAs are beginning to collect that information as part of their investigative power. SGMA requires GSAs to update their GSPs every five years once approved.

#### *Senate Bill 610 and 221*

Senate Bill (SB) 610 of 2001 improves the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 promotes more collaborative planning between local water suppliers and cities and counties. Under SB 610, water supply assessments (WSAs) must be furnished to local governments for inclusion in any environmental documentation for certain projects subject to CEQA. A similar framework, SB 221, provides a method for applying similar considerations to certain land use entitlements. WSA requirements would be determined at the project level for projects implementing the proposed 2022 RTS/SCS which requires further CEQA analysis.

#### *Assembly Bill 1881—Water Conservation in Landscaping Act*

Assembly Bill (AB) 1881, the Water Conservation in Landscaping Act of 2006, enacted many landscape efficiency requirements for improving the efficiency of water use in new and existing urban irrigated landscapes in California. AB 1881 required DWR to update the existing Model Local Water Efficient Landscape Ordinance and local agencies to adopt the updated model ordinance or an equivalent. The law also required the adoption of performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water. AB 1881 would apply to any of the proposed projects implementing the proposed 2022 RTP/SCS which featured landscaping greater than 2,500 square feet, including a limit to plant types used which restricts potential evapotranspiration to 70 percent of the local reference values—in effect requiring landscaping to lose less water to evapotranspiration than native plants.

#### *2022 Water Conservation Emergency Regulation*

Due to the prolonged drought throughout the State, in January 2022 SWRCB adopted the Water Conservation Emergency Regulation. Requirements for the duration of the emergency regulations (currently authorized from January 18, 2022 to January 18, 2023) include turning off decorative water fountains, prohibiting using water hoses to clean sidewalks, and turning off irrigation systems during rain and for two days after rain. SWRCB is developing draft proposed updates to the regulation consistent with Executive Order N-7-22 issued on March 28, 2022, including extending the duration and banning the irrigation of non-functional turf.

#### *Cobey-Alquist Floodplain Management Act*

The Cobey-Alquist Floodplain Management Act (Water Code § 8400 -8415) gives support to the NFIP by encouraging local governments to plan, adopt and enforce land use regulations for floodplain management, to protect people and property from flooding hazards. The Act discourages the construction of most types of development on ‘designated floodways’ and requires local agencies to set and enforce development restrictions for development within ‘restricted zones.’

Implementation of floodplain development regulations is a prerequisite for any agency to obtain State funding assistance with flood control projects or infrastructure of certain types.

### **c. Local Laws, Regulations, and Policies**

#### **County and City General Plans**

##### *Kings County General Plan*

The Kings County 2035 General Plan Resource Conservation Element contains goals, objectives, and policies designed to beneficially use, efficiently manage, and protect water resources. Specific objectives within the Resource Conservation Element includes maintaining and protecting existing water supplies, securing additional water supply sources to meet water demands, and protecting surface water and groundwater resources. Specific policies include Policy A1.2.2 which requires the use of drought-tolerant landscaping, Policy A1.4.3 which requires the use of BMPs to protect surface water and groundwater from adverse environmental effects of construction activities, and Policy A1.6.3 which enforces the requirements for the installation of wells in conformity with the California Water Code and State and local requirements (Kings County 2010).

##### *City of Avenal General Plan*

The City of Avenal General Plan 2035 contains several policies in its Conservation, Natural Resources, and Recreation Element that pertain to water conservation and water quality. For example, Policy NR-1.3 requires the use of permeable paving in new and remodeled City-owned hardscape areas. Policy NR-1.6 requires the use of drought tolerant plants. Policy NR-1.9 requires new development to incorporate site design, source control, and treatment measures to keep pollutants out of stormwater during construction. Policy NR-1.11 requires avoidance of impacts to riparian areas to support groundwater recharge (City of Avenal 2018).

##### *City of Corcoran General Plan*

The City of Corcoran General Plan 2025 contains policies and standards in its Open Space, Conservation, and Recreation Element that aim to meet the objective of protecting water resources to meet the needs of present and future generations. Policy and Standard 5.1 requires the City of Corcoran to expand programs that enhance groundwater recharge, including the installation of retention and detention ponds in new growth areas. In addition, the Public Services and Facilities Element contains Policy and Standard 8.5 which requires storm water runoff drainage to be designed to limit erosion (City of Corcoran 2007).

##### *City of Hanford General Plan*

The City of Hanford 2035 General Plan contains policies to meet the goals of ensuring adequate water quality and quantity exists to meet current and future demands. Policies implemented include Policy P5 which requires the City of Hanford to cooperate with water agencies to acquire water for groundwater recharge, Policy P17 which requires development projects to include adequate storm water drainage, and Policy P25 which requires the adoption of development standards to reduce peak-hour stormwater flow and increase groundwater recharge.

### *City of Lemoore General Plan*

The City of Lemoore 2030 General Plan Conservation and Open Space Element contains policies to preserve and improve groundwater supply and prevent polluted runoff from entering waterways. Policy COS-I-17 protects groundwater recharge areas by regulating the type of development within and adjacent to the, including requirements for structural coverage, impervious surfaces, and prohibition of uses. COS-I-21 requires developers to construct and maintain storm water basins or retention ponds for new development in areas deemed necessary by the City Engineer to control stormwater and protect areas from flooding. Policy COS-I-22 requires on-site storm drainage to drain away from the streets in areas with no curbs and gutters (City of Lemoore 2008).

### **Kings County Code of Ordinances**

The Kings County Code of Ordinances, or Municipal Code, contains several statutes that minimize adverse effects on hydrology and water quality. Chapter 21 *Subdivisions Ordinance* sets forth standards to ensure proper grading and erosion control. Chapter 5A, *Flood Damage Prevention*, sets for development standards to limit adverse effects from flooding. These include subdivision standards, flooding encroachments, floodproofing standards for residential and nonresidential development, required elevation standards, and construction practices. In addition, Chapter 14A, *Water Wells* addresses groundwater well construction and groundwater use (Kings County 2021).

## 4.10.3 Impact Analysis

### **a. Methodology and Significance Thresholds**

Appendix G of the State CEQA Guidelines identifies the following criteria for determining whether a project's impacts would have a significant impact related to hydrology and water quality:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
  - a. Result in substantial erosion or siltation on- or off-site;
  - b. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
  - c. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
  - d. Impede or redirect flood flows;
4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

## b. Project Impacts and Mitigation Measures

The following section discusses potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2022 RTP/SCS. Section 4.10.3c summarizes the impacts associated with capital improvement projects in the proposed 2022 RTP/SCS. Due to the programmatic nature of the proposed 2022 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement projects and future projects under the land use scenario envisioned by the proposed 2022 RTP/SCS could result in the impacts as described in the following section.

**Threshold 1:** Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality

**Impact HYD-1 TRANSPORTATION PROJECTS AND THE LAND USE SCENARIO ENVISIONED UNDER THE PROPOSED 2022 RTP/SCS WOULD NOT VIOLATE WATER QUALITY STANDARDS OR WASTE DISCHARGE REQUIREMENTS, OR OTHERWISE SUBSTANTIALLY DEGRADE SURFACE OR GROUNDWATER QUALITY. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

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Implementation of proposed transportation and land use projects envisioned in the proposed 2022 RTP/SCS would result in some short-term and long-term impacts to surface and groundwater quality. For program-level analyses, water-related impacts are often similar among individual projects within project classes (e.g., constructing new roadways, widening existing roadways, etc.). For example, when a new roadway is constructed, it will tend to have a greater impact than the widening of an existing roadway as it would generate runoff and contamination issues where there previously were none, as well as tend to create a larger amount of new impermeable surfaces than a widening project would. Similarly, improvements within built-up urban areas are less likely to generate concerns over water body pollution than improvements outside the urban landscape, as urban areas frequently have better stormwater drainage (and potential treatment) than countryside roadways, where stormwater capture may consist of a ditch or swale along the road.

### Groundwater Quality

Groundwater quality can be impaired in a variety of ways, including through drawdown of shallow, nutrient-polluted agricultural runoff near over-pumped wells; overall untreated runoff from agricultural and animal operations that percolates directly into shallow aquifers; percolation of wastes from septic systems; and percolation into the water table from polluted surface water where such interchange occurs. The proposed 2022 RTP/SCS does not include projects that would expand agricultural operations, and the land use scenario envisioned under the proposed 2022 RTP/SCS would prioritize urban infill development that would likely not include the use of septic systems. Therefore, primary potential impact to regional groundwater quality would be associated with impacts to surface water quality in areas where surface water is directly connected to underlying groundwater supplies. Potential impacts associated with increased overdraft of groundwater are discussed in Impact HYD-2.

### Surface Water Quality

Certain transportation improvements would increase overall impervious surface area throughout the KCAG region which could lead to increases in polluted runoff. For example, the multiple road widening projects would introduce increased pavement in areas that are currently undeveloped,

with corresponding increases in runoff. Construction activities for transportation projects facilitated by the proposed 2022 RTP/SCS may include soil disturbance, excavation, grading, and similar activities with a high potential to generate sediment and other pollutants that could impair surface water quality. Transportation projects that would expand existing transportation routes, such as road widening projects in Hanford and Lemoore, have the potential to lead to degradation of surface water quality due to an increase in vehicles traveling on the road.

Development projects envisioned under the land use scenario could also introduce impervious surfaces, including infill sites, if the infill site is currently unpaved. However, it is likely that most infill sites are already developed, thus minimizing the increase of impervious surfaces. These and other projects that would increase impervious surfaces may generate adverse impacts to surface water quality. Pollutants and chemicals associated with urban activities would run off new roadway surfaces or other new impervious surfaces flowing into nearby bodies of water during storm events. These pollutants would include but are not limited to heavy metals from auto emissions, oil, grease, debris, and air pollution residues. Such contaminated urban runoff may result in the incremental degradation of water quality.

Most transportation improvement projects would enhance and upgrade existing and outdated stormwater infrastructure, improving runoff quality: such benefits may be outweighed by the increases in current levels of pollutants caused by increase of traffic flows encouraged by better transportation systems. Similarly, any proposed 2022 RTP/SCS projects with landscaping may require fertilizer/pesticide application, which could enter nearby bodies of water and cause adverse effects to water quality.

As discussed in Section 4.10.2, *Regulatory Setting*, the federal CWA requires compliance with the NPDES Construction General Permit for projects disturbing more than one acre during construction. Compliance with the NPDES Construction General Permit is contingent on the preparation and implementation of a SWPPP, which includes project-specific BMPs to control erosion, sediment release, and otherwise reduce the potential for discharge of pollutants from construction into stormwater. Typical BMPs include covering stockpiled soils, installation of silt fences and erosion control blankets, and proper handling and disposal of wastes. In addition, all transportation projects for which Caltrans is the project sponsor would comply with the Caltrans Statewide NPDES permit that regulates all stormwater discharges from Caltrans owned conveyances, maintained facilities, and construction activities. Most proposed 2022 RTP/SCS transportation projects, such as implementation of bike routes, would disturb more than one acre and therefore subject to these regulations.

Coverage under the Statewide Phase II MS4 Permit would be required for all projects and land uses during their operation that would discharge to an MS4 system. The Phase II MS4 General Permit requires certain new development and applicable redevelopment projects to incorporate post-construction stormwater control measures into their design that include low-impact development and hydromodification techniques. Stormwater discharges from the project site must be minimized and must be treated at the project site prior to discharge and incorporate post-construction stormwater control measures into their design that include low-impact development and hydromodification techniques. Stormwater discharges from the project site must be minimized and must be treated at the project site prior to discharge. In addition, planning and approval of future projects implemented by the proposed 2022 RTP/SCS would require compliance with applicable jurisdiction-specific requirements, including municipal code sections regulating stormwater.

In addition, planning and approval of the various future projects envisioned by the proposed 2022 RTP/SCS would require the lead agencies and project sponsors to ensure compliance with existing



local jurisdiction requirements, including applicable municipal code sections such as the City of Hanford's stormwater regulations in Chapter 13.10 of the Municipal Code and the stormwater and water quality regulations of Chapters 5A and 21 of the County Code.

The land use scenario included in the 2022 RTP/SCS would generate new sources of wastewater, which would also be conveyed to wastewater treatment facilities in the region. Discharges of treated wastewater, also called effluent, from the treatment plants are regulated as point sources by the CVRWQCB and must meet water quality effluent limitations established in the NPDES permit issued by the CVRWQCB. Thus, although implementation of the 2022 RTP/SCS would increase the volume of point-source wastewater discharges in the KCAG region, required compliance and monitoring of effluent prior to discharge from treatment facilities would ensure impacts would be less than significant.

Compliance with applicable regulations pertaining to stormwater would reduce impacts from project construction and operation by requiring measures to prevent runoff and ensure non-point and point source discharges to surface water is in compliance with standards of the NPDES permit. Permit coverage would ensure that the transportation and land use projects implementing the proposed 2022 RTP/SCS would not substantially degrade water quality. Therefore, the proposed 2022 RTP/SCS would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. This impact would be less than significant.

## Mitigation Measures

Mitigation measures are not required.

**Threshold 2:** Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin

**Impact HYD-2 TRANSPORTATION PROJECTS AND THE LAND USE SCENARIO ENVISIONED UNDER THE PROPOSED 2022 RTP/SCS WOULD SUBSTANTIALLY DECREASE GROUNDWATER SUPPLIES AND INTERFERE WITH GROUNDWATER RECHARGE SUCH THAT IT MAY IMPEDE SUSTAINABLE GROUNDWATER MANAGEMENT OF THE BASIN. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

In undeveloped conditions, natural vegetation can intercept and retain precipitation and limit surface runoff, and runoff that occurs over large areas is often unconcentrated and able to percolate down into the ground and replenish groundwater supplies naturally. When natural areas, including bare dirt, are covered over by impermeable surfaces such as pavement, this natural infiltration is obstructed. Runoff from such areas is concentrated and may increase volumes and flow rate greater than the natural infiltration rate of the surrounding soil, leading to saturated ground which cannot accept any more water and ultimately impair natural recharge due to loss of otherwise rechargeable rainwater to evaporation or discharge to streams that flow to areas unable to assist recharge.

Transportation projects and the land use scenario envisioned under the proposed 2022 RTP/SCS could affect groundwater supplies by incrementally reducing groundwater recharge potential. This reduction in groundwater recharge could occur because the impermeable surfaces associated with the proposed improvements would increase surface water runoff and decrease the rate of natural infiltration. The proposed 2022 RTP/SCS encourages infill development within urbanized areas of the KCAG region, and the land development envisioned could interfere with groundwater recharge

by increasing the extent of impervious surfaces already present in this area. Urbanized areas are typically characterized by extensive impervious surfaces such as buildings and paved roads; as such, infill development would have minimal potential to further alter the rates and patterns of groundwater recharge to the overall basin. However, infill and other development on currently unpaved sites would result in a net increase of impervious surfaces in the area and could have associated impacts on site specific runoff and infiltration patterns.

### **Groundwater Recharge – Land Use Projects**

As development under the proposed 2022 RTP/SCS occurs, site specific drainage features would be designed to retain, capture, and convey increased runoff in accordance with the city or county design standards and State requirements, such as the post-construction site control features and hydromodification requirements of the Statewide MS4 Permit. Compliance with these standards and regulations typically includes the use of Low Impact Development features which are designed to simulate natural processes of runoff and infiltration to minimize or avoid potential adverse effects associated with new development. Most land use development would not occur on currently permeable surface and uses that did would incorporate design features in order to reduce impacts to recharge; therefore, impacts to groundwater recharge from land use projects implementing the proposed 2022 RTP/SCS would be less than significant.

### **Groundwater Recharge – Transportation Projects**

Transportation projects under the proposed 2022 RTP/SCS would increase the extent of impervious surfaces. However, the addition of new lanes to existing roads would have a negligible effect on the overall extent of impervious surfaces, as they would occur in areas already characterized by paved surfaces. Transportation projects would also be implemented with project specific drainage plans for new features would be designed to retain, capture, and convey runoff in accordance with federal, State, and local design standards. As such, transportation projects implementing the proposed 2022 RTP/SCS would not substantially impede groundwater recharge.

### **Groundwater Supply Management**

Implementation of transportation and land use projects envisioned in the proposed 2022 RTP/SCS would result in both short-term and long-term impacts to groundwater management throughout the KCAG region. Activities would be implemented under California regulations governing use of groundwater, including SGMA, as well as groundwater provisions of applicable local general plans. These regulations and plans are intended to reduce groundwater use and subsequent overdraft of groundwater basins.

During grading and general construction activities, water would be needed to suppress fugitive dust generated by construction equipment, for the mixing of concrete or other materials, for cleaning, and for a variety of other uses. Given the critically overdrafted designations of four of the five groundwater subbasins that underlie the KCAG region, and the likelihood that more than one project would be constructed simultaneously in areas with over-drafted basins, the short-term groundwater supply impact of projects implementing the proposed 2022 RTP/SCS would be significant.

Long-term water use of proposed transportation projects would primarily include irrigation uses for project landscaping components. Such use would be minor for individual projects. As most transportation improvements involve modification of existing facilities and would not result in a substantial increase in landscaped areas that require irrigation, some projects would not increase

operational water use at all. projects which incorporate landscaping, including vegetating graded areas for slope stability and maintenance, for use as noise barriers, or as part of stormwater control, such water use may constitute a significant draw on regional supplies by full buildout in 2046. In addition, several of the major urbanized areas throughout the KCAG region currently use, or have the capability to use, reclaimed water for agricultural irrigation, park landscaping, and other uses. However, in more remote areas reclaimed water sources are not located within a reasonable distance of landscaping needs. As such, it may not be economically feasible to convey reclaimed water to outlying areas.

For land use projects under the proposed 2022 RTP/SCS, including municipal and industrial projects, measures contained within the Statewide MS4 Permit and/or local General Plans may serve to reduce water use impacts. The Statewide MS4 NPDES Permit would require many projects to incorporate LID strategies such as stormwater reuse and onsite infiltration under Section E.12 (Post Construction Stormwater Management Program). General Plan policies and ordinances at the local and regional level, such as Green Building Codes, would encourage or require consideration of reclaimed water and drought-resistant landscaping, and the provisions of AB 1881 would apply to most landscaped areas over 2,500 square feet. Per Assembly Bill 1881, water use efficiency will be a focus of the 2022 RTP/SCS projects in order to meet drought resilience and preparedness. Where applicable, proposed 2022 RTP/SCS would enact measures contained within the Model Landscape Ordinance or equivalent local ordinances which would serve, in general, to reduce water usage. However, not every measure is applicable to every planned improvement under the proposed 2022 RTP/SCS, and existing regulations alone cannot reduce groundwater usage such that groundwater supplies would not be substantially depleted from existing critically overdrafted subbasins.

Due to the current over-drafted state of the basins, the magnitude of change from the current conditions caused by any additional overdraft of groundwater supply would be significant. Both short-term and long-term water uses associated with the proposed 2022 RTP/SCS would substantially decrease groundwater supplies and thereby impede sustainable groundwater management. The following mitigation measures are provided to reduce this impact.

## **Mitigation Measures**

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures for applicable transportation projects that would result in hydrology and water quality impacts, and where feasible and necessary based on site-specific considerations. Kings County and incorporated cities in the County should implement these measures where relevant to land use projects implementing 2022 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

### *HYD-2(a) Construction Dust Suppression Water Supply*

For all proposed 2022 RTP/SCS projects, where feasible, implementing agencies shall use reclaimed and/or recycled water for dust suppression during construction activities. This includes use of such reclaimed water in water trucks utilized for project construction occurring outside developed areas and away from water infrastructure which would otherwise provide such reclaimed water. This measure shall be noted on construction plans and shall be spot checked by the local jurisdiction.

#### *HYD-2(b) Landscape Watering*

In jurisdictions that do not already have an appropriate local regulatory program related to landscape watering, implementing agencies shall design proposed 2022 RTP/SCS projects that include landscaping shall be designed with drought tolerant plants and drip irrigation. When feasible, native plant species shall be used. In addition, landscaping associated with proposed improvements shall be maintained using reclaimed water when feasible. If reclaimed water could feasibly be utilized for project landscape watering due to proximity of reclaimed water sources but is unavailable due to lack of connecting infrastructure, implementing agencies shall conduct an analysis of the upgrades needed to provide such infrastructure, which will include the potential for new connections to existing reclaimed water systems to provide reclaimed water to other nearby sources besides the proposed project in the analysis, and shall perform such steps as necessary to utilize available reclaimed water if feasible.

#### **IMPLEMENTING AGENCIES AND TIMING**

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

#### **Significance After Mitigation**

Implementation of the above measures would reduce the proposed 2022 RTP/SCS impacts on water supply and groundwater overdraft in the KCAG region. However, due to the programmatic nature of this proposed 2022 RTP/SCS EIR, a precise, project-level analysis of specific water demand and supply impacts associated with individual transportation and land use projects is not possible. The land use scenario envisioned by the proposed 2022 RTP/SCS along with transportation projects would result in the need for additional water supply, even with the implementation of mitigation measures listed above. Given the severe overdraft conditions of the underlying groundwater basins, impacts would remain significant and unavoidable. No additional feasible mitigation measures to reduce this impact to a less than significant levels are available.

**Threshold 3:** Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

- a. Result in substantial erosion or siltation on- or off-site;
- b. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- c. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
- d. Impede or redirect flood flows;

**Impact HYD-3 TRANSPORTATION PROJECTS AND THE LAND USE SCENARIO ENVISIONED UNDER THE PROPOSED 2022 RTP/SCS WOULD NOT SUBSTANTIALLY ALTER THE EXISTING DRAINAGE PATTERN OF A SITE OR AREA THROUGH ALTERATION OF THE COURSE OF A STREAM OR RIVER OR THROUGH THE ADDITION OF IMPERVIOUS SURFACES IN A MANNER WHERE DRAINAGE CHANGES WOULD RESULT IN FLOODING ON- OR OFF-SITE, REDIRECT OR IMPEDE FLOOD FLOWS, EXCEED THE CAPACITY OF STORMWATER SYSTEMS, OR PROVIDE ADDITIONAL POLLUTED RUNOFF. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

Construction of transportation and land use projects envisioned under the proposed 2022 RTP/SCS would result in the change of existing drainage patterns on individual project sites, particularly by increasing the amount of impervious surface on a project site. Grading and construction activities may alter drainage patterns by increasing slopes and reducing the rate that water can infiltrate into the ground. Projects may result in fill material being placed within stream channels, although it is unlikely that the transportation projects within proposed 2022 RTP/SCS would necessitate or result in alteration of a streambed or course because no new bridges, river crossings, or other stream alterations are proposed.

Although proposed transportation projects and the land use scenario envisioned under the proposed 2022 RTP/SCS would feature some risk of drainage alteration, proposed projects would be implemented in correspondence with existing State and local standards, including the Kings County Code of Ordinances Chapter 5A, *Flood Damage Prevention*, and Chapter 21, *Subdivisions Ordinance*, which, together sets standards for flood prevention and erosion control (Kings County 2021). Cities within the KCAG region have similar ordinances codified within their respective municipal codes, further discussed under Impact HYD-4. As discussed under impact HYD-1, polluted runoff would not be substantial as individual projects would be required to comply with the provisions of the Statewide Phase II MS4 permit and an NDPEs Construction General Permit if a project site is greater than one acre. Further, land use projects would adhere to the provisions of the Statewide Phase II MS4 permit, including hydromodification requirements and implementation of Low Impact Development features such as incorporation of permeable paving, vegetated swales, infiltration retention basins, or other features that would minimize stormwater runoff.

Compliance with existing policies and regulations would ensure drainage patterns would not be substantially altered such that it would result in substantial erosion or siltation, increased flooding, runoff that would exceed the capacity of stormwater drainage systems or provide substantial additional sources of polluted runoff, or an impediment or redirection of flood flows. This impact would be less than significant.

## Mitigation Measures

No mitigation measures are required.

**Threshold 4:** In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation

**Impact HYD-4 TRANSPORTATION PROJECTS AND THE LAND USE SCENARIO ENVISIONED UNDER THE PROPOSED 2022 RTP/SCS WOULD NOT RISK RELEASE OF POLLUTANTS DUE TO PROJECT INUNDATION IN FLOOD HAZARD, TSUNAMI, OR SEICHE ZONES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

As described in 4.10.1, *Setting*, the KCAG region is inland and does not contain large lakes or reservoirs prone to seiche. Therefore, no impacts regarding tsunamis or seiches would occur.

Transportation and land use projects implementing the proposed 2022 RTP/SCS in FEMA flood hazard zones, DWR special flood hazard zones, or in proximity to waterways or a dam inundation zone may be subject to flood hazards. In the KCAG region, transportation improvements and future development projects under the land use scenario of the proposed 2022 RTP/SCS would be most susceptible to flooding in the unincorporated land between Kettleman City and Corcoran, as well as within the cities of Corcoran and Lemoore. The effects of flooding could include temporary inundation of a facility that causes pollutants to be released. Flooding may also cause immediate damage to roadways, bikeways, and bridges particularly during high-velocity flood events that wash away or erode facilities. Unpaved roads are particularly vulnerable, although any facility within a flood zone would be susceptible the risk of pollutant release due to flooding.

There are several federal, State, and local programs to reduce flooding and control the flow of floodwaters, as well as to set flood resilience standards for project development. Local jurisdictions have flood safety measures implemented into their municipal codes which help reduce the risk of pollutant release due to project inundation. Chapter 15.52 of the City of Hanford's Municipal Code includes design standards for the purpose of preventing flood damage, including Chapter 15.52.230 which requires permits for proposed construction and other development within flood-related erosion-prone areas within Hanford. Chapter 8 of the City of Lemoore's Municipal Code includes provisions for flood hazard reduction, including the use of flood resistant construction materials and elevation requirements. Title 8, Chapter 5 of the City of Avenal's Municipal Code sets design standards for residential and nonresidential development that reduce flood risk, such as required design to equalize hydrostatic flood forces on exterior walls. The City of Corcoran's Municipal Code establishes zoning districts based on potential flood hazards and applies different permitted and conditional uses depending on the potential severity of a flood to a respective zoning district. As discussed under Impact HYD-3, the Kings County Municipal Code maintains flood damage prevention standards that include, among other requirements, a permit for proposed development within erosion-prone areas, subject to the discretion of a building official (Kings County 2021).

The types of development that would be most likely to result in release of pollutants during inundation include uses such as wastewater treatment plants, chemical manufacturing plants, or hazardous materials landfills. The land use development envisioned within the proposed 2022 RTP/SCS would not be conducive to structures that would contain a large concentration of pollutants as future development projects would consist primarily of residences built within existing urban areas where wastewater treatment plants, landfills, and other utility structures already exist to serve development in the area. Accordingly, the land use projects envisioned in the proposed 2022 RTP/SCS would not substantially increase the risk of release of pollutants into the environment

as a result of flood inundation. All proposed 2022 RTP/SCS projects within flood hazard zones would adhere to the respective flood control measures for the specific project site. Moreover, the implementation of SWPPPs and BMPs imposed through NPDES General Construction Permits or other regulatory mechanisms would lessen the potential for the release pollutants due to project inundation. Thus, the proposed 2022 RTP/SCS would not risk release of pollutants in a flood hazard zone due to project inundation. This impact would be less than significant.

## Mitigation Measures

No mitigation measures are required.

**Threshold 5:** Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan

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### **Impact HYD-5 TRANSPORTATION PROJECTS AND THE LAND USE SCENARIO ENVISIONED UNDER THE PROPOSED 2022 RTP/SCS COULD CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF A WATER QUALITY CONTROL PLAN OR SUSTAINABLE GROUNDWATER MANAGEMENT PLAN. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

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Implementation of transportation projects and the land use scenario envisioned under the proposed 2022 RTP/SCS would not interfere with the regulatory provisions of the Basin Plan. The transportation projects included in the proposed 2022 RTP/SCS would not conflict with the beneficial uses for water identified in the Basin Plan. For example, transportation projects would not interfere with the beneficial use of water for municipal and domestic supplies, agricultural supply, or wildlife habitat supply. Likewise, the land use scenario envisioned in the proposed 2022 RTP/SCS would not obstruct or conflict with beneficial uses of water in the water quality control plan. The land use scenario in the proposed 2022 RTP /SCS focuses on infill development and locating people and employment near transit. The infill characteristics of the land use scenario would generally be consistent with the past use of water in these areas, and supportive of the beneficial uses identified in the water quality control plan, such as municipal and domestic supplies.

The stated primary goals of the Basin Plan include management of the 303(d) listed bodies, maintenance of water throughout the region for designated beneficial uses, and management of salt concentrations within the groundwater subbasins (CVRWQCB 2018). Implementation of the proposed 2022 RTP/SCS would not interfere with the attainment of these goals, and new development and improvements facilitated by the project would be required to maintain adherence with changes in the Basin Plan as they are planned in the future. Transportation or land use projects with a potential for affecting 303(d) impaired water bodies would be developed in compliance with the TMDLs set for the specific water body. Further, if any individual project would cause potential substantial impacts to the salinity of receiving waters, the CVRWQCB would have authority to mandate limitations or monitoring of discharges for salinity under the SWPPP required by the Construction General Permit or otherwise imposed by the CVRWQCB for projects that are smaller than one acre. Discharges of effluent from land use projects would be regulated by CVRWQCB to meet effluent limitations established in applicable NDPES and WDR permits for point source discharges. All development under the proposed 2022 RTP/SCS would be required to comply with all applicable regulatory standards. As such, the proposed 2022 RTP/SCS would not conflict with or obstruct implementation of a water quality control plan. This impact would be less than significant.

The critically overdrafted basins in the KCAG region are managed by eight regional GSAs, each of which is responsible for developing and updating a GSP for its respective jurisdiction. The Tulare

Lake Subbasin is under the jurisdiction of five separate GSPs, and each collective prepared a single GSP for the Tulare Lake Subbasin (DWR 2022e). The GSPs for the four critically overdrafted subbasins were deemed 'Incomplete' by DWR and require revision, and the GSP submitted for the Pleasant Valley Subbasin is under review. As discussed under Section 4.10.2, *Regulatory Setting*, the primary regulatory tool provided to GSAs under SGMA is the ability to set and enforce area-specific mandatory groundwater pumping limitations through regular updates to GSPs for medium- and high-priority groundwater basins. DWR-approved GSPs are required to provide mechanisms that allow the sustainable use of groundwater, with growth projections considered. The current GSPs under review or revision are focused on measuring extractions to obtain the necessary data to determine sustainable yields and examining fees for their information gathering plans, as well as seeking public and stakeholder input.

As GSPs determine sustainable yields through their current cycles and begin to incorporate pumping limitations or other groundwater sustainability policies based on their determined sustainable yields, projects being implemented under the proposed 2022 RTP/SCS would be required to conform with any new applicable regulations supporting groundwater use and sustainable groundwater management. However, water use facilitated by the proposed 2022 RTP/SCS could obstruct any current GSP in the KCAG region as an increase in water demand could result from projects implementing the proposed 2022 RTP/SCS land use scenario, as discussed under impact HYD-2. Although projects would be subject to monitoring requirements as set forth in the applicable GSPs, overdraft of groundwater could still occur in conflict with adopted GSPs. The following mitigation measures are provided to reduce this impact.

### **Mitigation Measures**

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, Mitigation Measures HYD-2(a) and HYD-2(b) above where applicable for projects implementing the proposed 2022 RTP/SCS with the potential to impact conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plans. Cities in the KCAG region and the County can and should implement these measures, where relevant to land use projects implementing the proposed 2022 RTP/SCS. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

### **IMPLEMENTING AGENCIES AND TIMING**

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

### **Significance After Mitigation**

Implementation of Mitigation Measures HYD-2(a) and HYD-2(b) would reduce proposed project impacts on water supply and groundwater overdraft in the KCAG region as it relates to conflicts with or obstructs implementation of a water quality control plan or sustainable groundwater management plans. However, due to the programmatic nature of this proposed 2022 RTP/SCS EIR, a precise, project-level analysis of specific water demand and supply impacts associated with individual transportation and land use projects is not possible. The land use scenario envisioned by the proposed 2022 RTP/SCS along with transportation projects would result in the need for



additional water supply, even with the implementation of mitigation measures listed above. Given the severe overdraft conditions of area groundwater basins, impacts would remain significant and unavoidable. No additional feasible mitigation measures to reduce this impact to a less than significant levels is available.

### **c. Specific RTP/SCS Projects that May Result in Impacts**

All proposed 2022 RTP/SCS transportation projects that require new construction or landscaping would result in impacts discussed in impacts HYD-1 through HYD-5; and therefore, are not specifically identified as having individual potential impacts. The proposed 2022 RTP/SCS projects are listed in Table 2-1 through Table 2-7 in Chapter 2 of this EIR. Additional specific analysis would be required as individual projects are implemented to determine the project specific magnitude of impact.

## **4.10.4 Cumulative Impacts**

The cumulative impact analysis area for hydrology and water quality encompasses the watersheds and groundwater basins affected by the transportation projects and land use pattern envisioned in the proposed 2022 RTP/SCS, including creeks and drainages, floodplains, and aquifers. Therefore, the cumulative impact assessment area consists of the KCAG region and the counties adjacent to the KCAG region, as further described in Section 3.3.3.1, *Cumulative Impact Methodology*. This geographic extent is appropriate for the issue area of hydrology and water quality because it includes the watersheds applicable to the KCAG region, and these watersheds are in general hydrologically connected. Any surface water quality impacts in one part of the watershed could potentially affect surface water quality elsewhere downstream in the watershed. In addition, this cumulative extent fully encompasses the groundwater subbasins that occur within the KCAG region, all of which besides the Tulare Lake Subbasin extend outside the KCAG region.

Cumulative development would increase erosion and sedimentation resulting from grading and construction, as well as changes in drainage patterns which could degrade surface and groundwater quality. Development within the cumulative impact analysis area could also contribute to the capacity of a drainage way to carry flood flows that may risk pollutant release. However, individual projects within the cumulative impact analysis area would be required to comply with applicable water quality regulations, including federal, State, and local requirements. Compliance with these existing requirements would reduce project-level impacts throughout the cumulative impact analysis area. Thus, cumulative impacts related to degrading water quality, substantial alteration of drainage patterns, and flood hazards, would be less than significant.

Development within the cumulative impact analysis area would increase impervious surfaces and reduce groundwater infiltration. However, counties and cities in the cumulative impact analysis area have regulatory requirements for stormwater management that limit stormwater runoff. Compliance with applicable regulations would result in the retention of runoff on individual project sites that would be treated and discharged to swales, creeks, or other drainages, or otherwise placed to encourage groundwater infiltration. Thus, impacts to groundwater recharge would not be cumulatively considerable. However, development within the cumulative impact analysis area would substantially decrease groundwater supplies by increasing the amount of overdraft throughout critically overdrafted subbasins that extend beyond the KCAG region, impeding sustainable groundwater management. Further overdraft of these subbasins could also result in conflicts with groundwater management goals and targets set in GSPs by GSAs that manage the

subbasins. Therefore, cumulative impacts related to decreasing groundwater supplies and conflicts with a sustainable groundwater management plan would be significant.

The proposed 2022 RTP/SCS would comply with all applicable water quality regulations, including NPDES General Construction Permit requirements and City and County municipal code requirements. Regulatory compliance would ensure individual projects implement measures to reduce impacts to water quality, alternation of drainage patterns, and pollutant release in flood hazards. Such regulations include the implementation of an SWPPP and BMPs, and specific design requirements for any development that occurs in a flood hazard zone. Therefore, the proposed 2022 RTP/SCS's contributions to impaired water quality, alteration of drainage patterns, pollutant release due to inundation would not be cumulatively considerable.

The proposed 2022 RTP/SCS would facilitate development that would accommodate anticipated population growth to 2046. The land use scenario envisioned under the proposed 2022 RTP/SCS would involve residential development that would result in an increased amount of groundwater use in cities such as Corcoran, Hanford, and Lemoore compared to existing conditions. This overdraft would occur in subbasins designated as medium to high priority by DWR, with four of the five subbasins in the KCAG region designated as critically overdrafted. Aside from the Tulare Lake Subbasin, all other subbasins extend outside of the KCAG region. Thus, increased groundwater pumping to meet the needs of new development would adversely affect subbasins that extend outside of the KCAG region and are part of the larger Tulare Lake Basin hydrologic region. Further, increased groundwater pumping could lead to conflicts with applicable GSPs for a subbasin. Although projects implementing the proposed 2022 RTP/SCS would only conflict with GSPs for the respective subbasin in which the project is located, the cumulative impact would be significant across the entirety of the Tulare Lake Basin hydrologic region. Mitigation Measures HYD-2(a) and HYD-2(b) would serve to reduce these impacts; however, as discussed under impacts HYD-2 and HYD-5, impacts would remain significant and unavoidable. Therefore, the proposed 2022 RTP/SCS's contributions to the loss of groundwater supplies and conflicts with groundwater management plans would be cumulatively considerable.

## 4.11 Land Use and Planning

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This section evaluates potential impacts to land use from development facilitated by the proposed 2022 RTP/SCS.

### 4.11.1 Setting

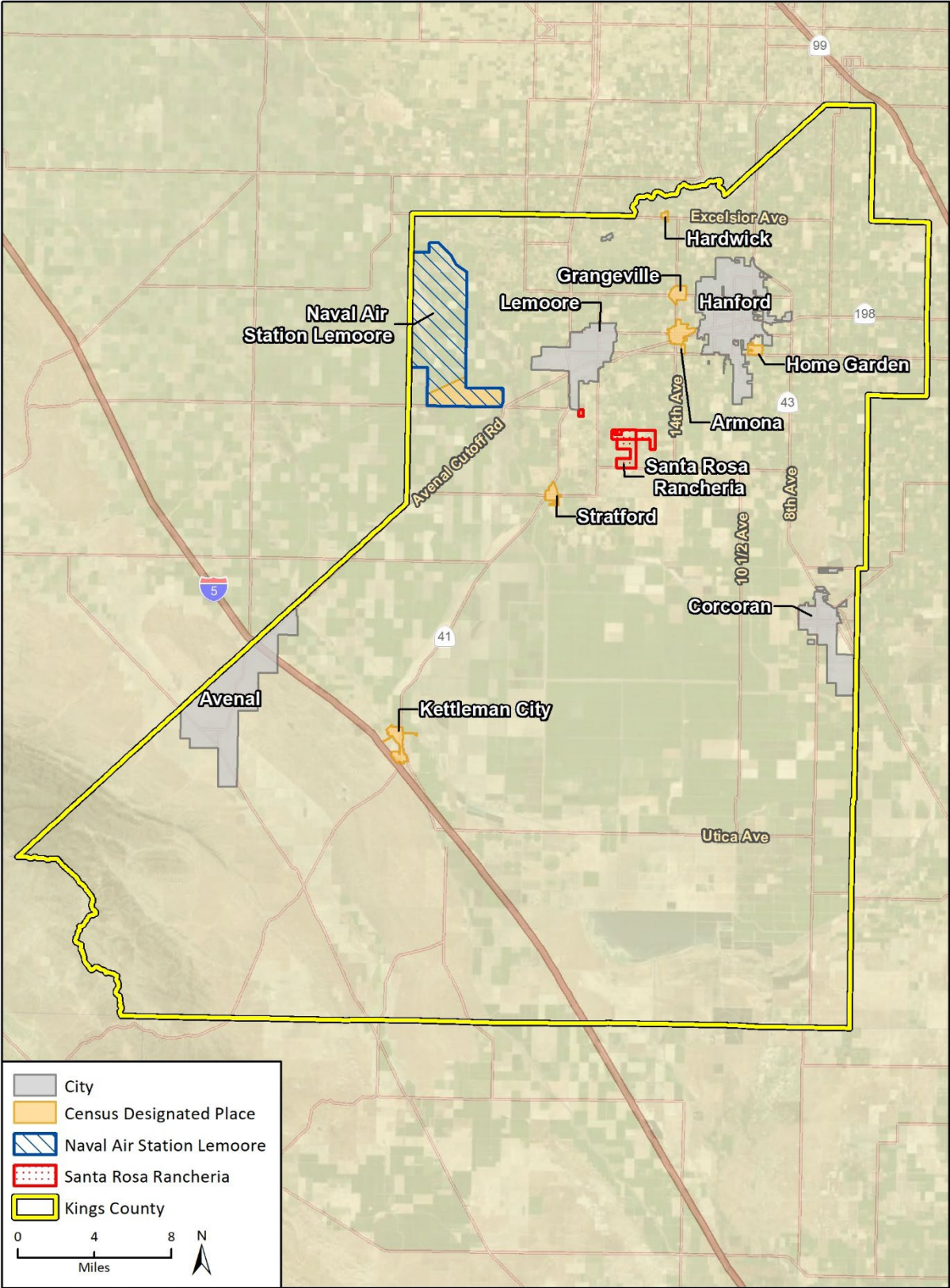
#### **a. Land Use Patterns**

The KCAG region encompasses the entirety of Kings County, including four incorporated cities, seven Census-designated places, the Santa Rosa Rancheria Native American Reservation, and the Naval Air Station Lemoore (Figure 4.11-1). The 2022 KCAG region population was approximately 152,500 (California Department of Finance [DOF] 2022). The City of Hanford is the most populated area of the KCAG region, with approximately 39.0 percent of all residents, followed by Lemoore (17.6 percent) and Corcoran (13.4 percent) (U.S. Census Bureau 2022). The growth and development patterns of all four cities are fairly consistent, with land use designations primarily designed to accommodate low density residential development (City of Avenal 2018; City of Corcoran 2007; City of Hanford 2017; City of Lemoore 2012). Hanford and Lemoore have increased current populations compared to 2010, while the populations of Avenal and Corcoran have decreased relative to 2010 (DOF 2020). Each of these cities also has established commercial and industrial uses. The Census-designated places in the county are primarily small suburban areas that are surrounded largely by agricultural uses.

The KCAG region is predominantly agricultural; much of the unincorporated KCAG region is designated as Agricultural Open Space by the Kings County 2035 General Plan (Kings County 2010). The KCAG region's major transportation routes include Interstate (I)-5, State Route (SR) 33, SR 41, SR 43, SR 137, SR 198, and SR 269 (County of Kings 2010). Incorporated cities along these routes are Avenal on SR 33, SR 269, and I-5; Corcoran on SR 43 and SR 137; Hanford on SR 43, and SR 198; and Lemoore on SR 198 and SR 41. Some unincorporated areas include Kettleman City on I-5 and SR 41; Stratford on SR 41; Armona on SR 198; and Home Garden on SR 43 and SR 198. The most populated area of the KCAG region is located along the SR 198 corridor (County of Kings 2010).

There are a total of seven unincorporated communities with the KCAG region. These areas include Armona, Home Garden, Grangeville, Hardwick, Kettleman City, Lemoore Station, and Stratford. The KCAG region is divided into five individual Supervisorial Districts, each responsible for the communities within that specific district.

Figure 4.11-1 KCAG Planning Area



### 4.11.2 Regulatory Setting

Numerous federal, State, and local laws, regulations, policies, programs, plans, codes, and ordinances regulate land use in the KCAG region. Local land use issues are regulated by the general plans, specific plans, and zoning ordinances adopted by the County and the various incorporated cities within the County. The County itself is landlocked, surrounded by Fresno County to the north, Fresno County and Monterey County to the west, Tulare County to the east, and Kern County to the south. Thus, it is not within the immediate proximity of any local, state, or national coastal zones.

#### **a. Federal Laws, Regulations, and Policies**

##### *Code of Federal Regulations Title 25*

Federally recognized Native American tribes are considered domestic dependent nations tribal sovereignty. “Tribal sovereignty” refers to tribes’ right to govern themselves, define their own membership, manage tribal property, and regulate tribal business and domestic relations; it further recognizes the existence of a government-to-government relationship between such tribes and the federal government. In general, State, and local governments do not have “civil regulatory” jurisdiction (i.e., land use) on Indian Land, which is land held in trust or restricted status for a tribe.

#### **b. State Laws, Regulations, and Policies**

##### *Sustainable Communities Strategy and Climate Protection Act (SB 375)*

SB 375 is a California law passed in 2008 that requires each MPO to demonstrate, through the development of a Sustainable Communities Strategy (SCS), how its region will integrate transportation, housing, and land use planning to meet the greenhouse gas (GHG) reduction targets set by the State.

In addition to creating requirements for MPOs, it also creates requirements for CTC and CARB. Some of the requirements include the following:

- CTC must maintain guidelines for the travel demand models that MPOs develop for use in the preparation of their RTPs or MTPs.
- CARB must develop regional GHG emission reduction targets for automobiles and light duty trucks for 2020 and 2035 by September 30, 2010. These targets were approved on September 23, 2010. CARB is tasked to update the regional targets every eight years, with the option of revising them every four years. The latest targets were approved on March 18, 2018 and went into effect October 1, 2018.
- Each MPO must prepare an SCS as part of its RTP or MTP to demonstrate how it will meet the regional GHG targets.
- Each MPO must adopt a public participation plan for development of the SCS that includes informational meetings, workshops, public hearings, consultation, and other outreach efforts.
- If an SCS cannot achieve the regional GHG target, the MPO must prepare an Alternative Planning Strategy (APS) showing how it would achieve the targets with alternative development patterns, infrastructure, or transportation measures and policies.
- Each MPO must prepare and circulate a draft SCS at least 55 days before it adopts a final RTP or MTP.
- After adoption, each MPO must submit its SCS to CARB for review.

- CARB must review each SCS to determine whether, if implemented, it would meet the GHG targets. CARB must complete its review within 60 days.

KCAG's 2018 SCS was reviewed by CARB and estimated to reduce GHG per capita emissions by 10.8 percent in 2020 and 11.8 percent by 2035, to meet the target set by CARB of a 5 percent reduction in GHG emissions per capita by 2020 and a 10 percent reduction in GHG emissions per capita by 2035 (CARB 2021). These targets apply to the entire KCAG region for all on-road light duty passenger vehicles emissions, and not to individual cities or sub-regions. The proposed 2022 RTP/SCS includes the years for which the regional targets are required (base year/2022 and 2035) and the proposed 2022 RTP/SCS also includes the additional scenario year of 2046 to comply with federal law. The proposed 2022 RTP/SCS meets the 2035 and would very likely meet the 2045 GHG targets.

SB 375 specifically states that nothing in the law changes local governments local land use authorities. The proposed 2022 RTP/SCS provides a regional policy foundation that local governments may build upon if they so choose. The proposed 2022 RTP/SCS includes and accommodates the growth projections for the region. SB 375 also requires that forecasted development patterns for the region be consistent with the eight-year regional housing needs as allocated to member jurisdictions through the Regional Housing Needs Allocation (RHNA) process under State housing law.

In addition, this 2022 RTP/SCS EIR lays the groundwork for the streamlined review of qualifying development projects. Qualifying projects that meet statutory criteria and are consistent with the proposed 2022 RTP/SCS are eligible for streamlined environmental review pursuant to CEQA under SB 375 and other laws.

#### *Office of Planning and Research 2017 General Plan Guidelines*

The 2017 General Plan Guidelines (Governor's Office of Planning and Research 2017) is the first comprehensive update to the guidelines since 2003 and addresses numerous new laws, requirements, resources, and research that affect long-range planning in California. The 2017 update includes links to external documents and additional resources. This includes guidance for implementing the following legislation: Environmental Justice (SB 1000), Climate Change (SB 379), Sustainable Communities Strategies (SB 375), Flood Management (SB 5), Vehicle Miles Traveled (SB 743), Island or Fringe Communities (SB 244), Tribal Consultation (AB 52) and Local Hazard Mitigation Plans (AB 2140). Beyond State law requirements, the 2017 General Plan Guidelines also provide direction on topics including healthy communities, equitable and resilient communities, economic development, climate change and renewable energy.

#### *Smart Mobility 2010 Framework*

The Smart Mobility Framework, formally known as *Smart Mobility 2010: A Call to Action for the New Decade* (Caltrans 2010), was prepared by Caltrans in partnership with the U.S. EPA, the Governor's Office of Planning and Research, and the California Department of Housing and Community Development to address both long-range challenges and short-term programmatic actions to implement multi-modal and sustainable transportation strategies in California. The Smart Mobility Framework helps guide and assess how well various levels plans, programs, and projects (e.g., RTPs, General Plans, specific development proposals, etc.) meet a definition of "smart mobility". The Smart Mobility Framework is intended to move people and freight while enhancing California's economic, environmental, and human resources by emphasizing:

- Convenient and safe multimodal travel

- Speed suitability
- Accessibility
- Management of the circulation network
- Efficient use of land

### *Planning and Zoning Law*

California Government Code Section 65000, et seq., regulates the substantive and topical requirements of general plans. State law requires each city and county to adopt a general plan “for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning.” The California Supreme Court has called the general plan the “constitution for future development.” The general plan expresses the community’s development goals and embodies public policy relative to the distribution of future land uses, both public and private.

Zoning authority originates from city and county police power and from the Planning and Zoning Law, which sets minimum requirements for local zoning ordinances. Zoning ordinances must be consistent with the general plan and specific plans. The consistency requirement does not apply to charter cities other than Los Angeles unless the charter city adopts a consistency rule.

### *Senate Bill 743*

SB 743 changes the way that public agencies evaluate the transportation impacts of projects under CEQA, recognizing that roadway congestion, while an inconvenience to drivers, is not itself an environmental impact (see Pub. Resource Code, § 21099, subd. (b)(2)). SB 743 provides opportunities to streamline CEQA for qualifying urban infill development near major transit stops in metropolitan regions statewide. A transit-oriented infill project can be exempt from CEQA if consistent with a specific plan for which an EIR was prepared, and consistent with the use, intensity, and policies of an SCS or Alternative Planning Strategy that is certified by the CARB as meeting its greenhouse gas reduction targets. A city or county may designate an “infill opportunity zone” by resolution if it is consistent with the general plan and any applicable specific plan and is a transit priority area within the adopted SCS or Alternative Planning Strategy. This infill opportunity zone is then exempt from level of service standards in the congestion management plan.

### *State Open Space Standards*

State planning law (Government Code Section 65560) provides a structure for the preservation of open space by requiring every city and county in the State to prepare, adopt, and submit to the Secretary of the Resources Agency a “local open-space plan for the comprehensive and long-range preservation and conservation of open-space land within its jurisdiction.” The following open space categories are identified for preservation:

- **Open space for public health and safety**, including, but not limited to, areas that require special management or regulation because of hazardous or special conditions;
- **Open space for the preservation of natural resources**, including, but not limited to, natural vegetation, fish and wildlife, and water resources;
- **Open space for resource management and production**, including, but not limited to, agricultural and mineral resources, forests, rangeland, and areas required for the recharge of groundwater basins;

- **Open space for outdoor recreation**, including, but not limited to, parks and recreational facilities, areas that serve as links between major recreation and open space reservations (such as trails, easements, and scenic roadways), and areas of outstanding scenic and cultural value; and
- **Open space for the protection of Native American sites**, including, but not limited to, places, features, and objects of historical, cultural, or sacred significance, such as Native American sanctified cemeteries, places of worship, religious or ceremonial sites, or sacred shrines located on public property (further defined in PRC Sections 5097.9 and 5097.993). The following section focuses on the key plans that regulate land use in the KCAG region, which are the county and city general plans. This section outlines the status of those plans.

### **c. Local Laws, Regulations, and Policies**

#### *Kings County General Plan*

The 2035 Kings County General Plan is the County's guiding document outlining development in the County. The County General Plan is broken down into the following elements: Land Use, Resource Conservation, Open Space, Circulation, Health and Safety, Noise, Air Quality. It also includes a Housing Element, Community Plans and Specific Plans. In summary, the 2035 Kings County General Plan seeks to protect prime agricultural land, direct urban growth to existing cities and community districts, and increase economic and community sustainability (Kings County 2010).

#### *City General Plans*

##### **CITY OF AVENAL GENERAL PLAN**

The City of Avenal's General Plan 2035, adopted in 2018, contains seven elements: land use, economic development, conservation, natural resource, and recreation, circulation, air quality, public services and facilities, and safety. Specifically, the land use element addresses the protection of natural resources, the preservation and enhancement of the historical character of the community, the harmonious incorporation of new development into existing public and private development, and the maintenance of the community's small town, rural atmosphere (City of Avenal 2018).

##### **CITY OF CORCORAN GENERAL PLAN**

The City of Corcoran General Plan 2035 includes nine elements: land use, circulation, noise, safety, open space, conservation, and recreation, air quality, community design, public services and facilities, and housing. The land use element provides the central policy context on which the City of Corcoran's land use decisions are made. The land use element describes policies which serve to preserve and enhance the City of Corcoran's unique character and achieve an optimal balance of residential, commercial, industrial, and open space land uses (City of Corcoran 2007).

##### **CITY OF HANFORD GENERAL PLAN**

The City of Hanford 2035 General Plan's land use element describes the future growth of the City of Hanford and the purpose, general density, and location of land use designations. The City of Hanford's overall guiding principles for land use form the basis for goal and policy statements. These include orderly growth, responsible management of land resources, coordinated land use and



circulation, respect of private property rights, preservation of farmland, enhancement of the historic center of Hanford, enhancement of small town charm, among others (City of Hanford 2017).

### **CITY OF LEMOORE GENERAL PLAN**

The City of Lemoore's General Plan land use element constitutes the framework for land use planning within the City of Lemoore to the year 2030. The land use element framework embodies a vision of land use for the City of Lemoore in 2030, and various initiatives are presented to achieve the City of Lemoore's desired vision. These initiatives include preservation of agriculture, preservation of small town character, accommodation of economic development, connecting parks and open space, having adequate and flexible school sites, among others (City of Lemoore 2012).

#### *Airport Land Use Compatibility Plans*

The California State Aeronautics Act requires counties with public-use airport to create an Airport Land Use Commission (ALUC) and prepare an airport land use compatibility plan (ALUCP) for each public use airport. The purpose of the code is to "protect public health, safety and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses" (Public Utilities Code Section 21670 et. seq.). Cities and counties with jurisdiction within the areas included in an ALUCP (i.e., Airport Influence Area) must submit their general and specific plans to the ALUC for review upon adoption or amendment to determine whether they are consistent with the ALUCP.

The Kings County ALUCP provides compatibility policies for the Corcoran Airport and Hanford Municipal Airport (Kings County 1994). Kings County also has prepared the Naval Air Station Lemoore Joint Land Use Study to protect the encroachment of incompatible uses into areas surrounding the Naval Air Station Lemoore (Kings County 2011).

### **4.11.3 Impact Analysis**

#### **a. Methodology and Significance Thresholds**

Appendix G of the State CEQA Guidelines identifies the following criteria for determining whether development facilitated by the proposed 2022 RTP/SCS would have a significant impact on land use, namely an analysis of whether or not the proposed 2022 RTP/SCS would:

1. Physically divide an established community; and/or
2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation (including, but not limited to, the General Plan or Zoning Ordinance) and result in a physical change to the environment not already addressed in the other resource chapters of this EIR.

The proposed 2022 RTP/SCS was assessed to determine whether the transportation projects and KCAG land use pattern and strategies could conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. This review focused on the process used by KCAG to develop regional growth projections, the transportation network and programs, housing needs estimates, and the SCS land use strategies. This evaluation of land use assumes that construction and development under the 2022 RTP/SCS would adhere to applicable federal, State, and local regulations and would conform to appropriate standards in the

industry, as relevant for individual projects. Land use impacts related to implementation of the proposed 2022 RTP/SCS land use development pattern and transportation projects would be inherently operational in nature, and the following analysis discusses effects of the proposed 2022 RTP/SCS following implementation.

Impacts related to conflicts with habitat conservation plans or natural community conservation plans are discussed in Section 4.4, *Biological Resources*. Impacts related to population and housing are discussed in Section 4.16, *Effects Less than Significant*.

## **b. Project Impacts and Mitigation Measures**

The following section discusses potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2022 RTP/SCS. Impacts and associated mitigation measures would apply in the KCAG region and all cities within the County. Section 4.11.3.c summarizes the impacts associated with capital improvement projects proposed in the proposed 2022 RTP/SCS. Due to the programmatic nature of the 2022 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2022 RTP/SCS could result in the impacts as described in the following section.

<b>Threshold 1:</b> Physically divide an established community
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**Impact LU-1 PROPOSED TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD NOT PHYSICALLY DIVIDE AN ESTABLISHED COMMUNITY. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.**

In general, the proposed 2022 RTP/SCS would implement roadway projects and transportation improvements that will decrease traffic congestion, increase mobility, and improve alternative transportation infrastructure. Construction of additions to existing facilities and new facilities routinely involve temporary disruptions within established communities such as lane or road closures along roads and highways and service delays or detours for bus routes and passenger rail. Local jurisdictions routinely require traffic control plans and related measures to ensure that construction activities accommodate vehicular and pedestrian access, such as designating alternate routes or scheduling disruptive activities late at night or on weekends. With these controls, construction activities would not result in the physical division of established communities.

The proposed 2022 RTP/SCS intends to improve the system for all modes of transit so vehicles and non-motorized transit can use the streets simultaneously and safely. As a result, roads would be expanded, widened, and reconstructed under the proposed 2022 RTP/SCS. These and/or other planned projects would include improvements to bicycle and pedestrian facilities. Because the existing roads subject to expansion or widening are already part of the communities in which they are located, such projects would not have the potential to divide those communities. The projects are intended to achieve goals of the proposed 2022 RTP/SCS to increase mobility and decrease VMT; therefore, the projects should result in bringing communities closer together rather than dividing them. New roadway, roadway rehabilitation projects, bridge repair, bicycle lanes, public transportation projects and ADA accessibility projects would be included in the proposed 2022 RTP/SCS. Collectively, these are long-planned projects that are typically included in local circulation elements. As such, they have been anticipated and accommodated in local land use planning and

would be integrated into the community infrastructure. These projects are expected to increase community connectivity and mobility and decrease congestion and GHG emissions.

The existing and new road projects contained in the proposed 2022 RTP/SCS originate from either local circulation plans or state projects supported by cities and counties. Therefore, the proposed 2022 RTP/SCS projects have been coordinated with and integrated into local plans that support and connect communities consistent with state planning law.

The land use scenario envisioned by the 2022 RTP/SCS would encourage infill development within existing urbanized areas along transportation corridors, although development could still occur in more suburban and rural areas as well. The land use scenario follows adopted city plans, taking into consideration recent updates and buildout scenarios, following existing regulations to promote infill development in existing communities along with planned growth in other areas. In general, this type of development would not divide a community; rather it would promote the development of existing vacant or underutilized properties. Other types of development would be consistent with the localized planning as well. This infill development would locate people closer to existing employment, goods and services within established communities. Buildout of the SCS land use scenario would result in more compact development in those established communities. The existing and new road projects contained in the proposed 2022 RTP/SCS originate from either local circulation plans or state projects supported by individual cities and/or the County. Therefore, the proposed 2022 RTP/SCS projects have been coordinated with and integrated into local plans that support and connect communities consistent with state planning law. Therefore, the proposed 2022 RTP/SCS would not physically divide an established community. This impact would be less than significant.

## Mitigation Measures

No mitigation measures are required.

**Threshold 2:** Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation (including, but not limited to, the General Plan or Zoning Ordinance) and result in a physical change to the environment not already addressed in the other resource chapters of this EIR

**Impact LU-2 PROPOSED TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD NOT CAUSE A SIGNIFICANT ENVIRONMENTAL IMPACT DUE TO A CONFLICT WITH ANY LAND USE PLAN, POLICY, OR REGULATION (INCLUDING, BUT NOT LIMITED TO, THE GENERAL PLAN OR ZONING ORDINANCE) AND RESULT IN A PHYSICAL CHANGE TO THE ENVIRONMENT NOT ALREADY ADDRESSED IN THE OTHER RESOURCE CHAPTERS OF THIS EIR. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.**

In planning for projected growth in the region, the proposed 2022 RTP/SCS represents a voluntary growth strategy that retains local government land use autonomy. Neither SB 375 nor any other law requires local member agency general plans or land use regulation to implement the land use policies in the proposed 2022 RTP/SCS. Thus, implementation of the proposed 2022 RTP/SCS is dependent on local government policy decisions and voluntary action. The proposed 2022 RTP/SCS includes a list of planned and programmed projects including local and regional capital improvements that have been anticipated or accounted for in local general plans and community plans. These plans are summarized above in Section 4.11.2, *Regulatory Setting*.

The vision for the proposed 2022 RTP/SCS is built on a set of integrated policies, strategies, and investments to maintain and enhance the transportation system to meet the diverse needs of the region through 2046. The proposed 2022 RTP/SCS was prepared with the specific intent to comply with the SB 375 goal to reduce GHG emissions. The proposed 2022 RTP/SCS was assessed to determine whether the SCS land use pattern and strategies could conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. This review focused on the process used by KCAG to develop regional growth projections, the transportation network and programs, housing needs estimates and the SCS land use strategies.

Proposed 2022 RTP/SCS transportation projects encourage a multi-modal transportation network in high quality transit areas and public transportation improvements, while the envisioned land use scenario encourages infill development. Broadly speaking, these land use patterns reduce the distance between trip destinations. This approach is consistent with the general provisions of the FAST Act, and the Caltrans Smart Mobility 2010 framework.

In addition, the proposed 2022 RTP/SCS would further support the KCAG region to reach its GHG emission reduction targets established by CARB under AB 32, SB 32, and SB 375, as discussed in Section 4.8, *Greenhouse Gas Emissions/Climate Change*. The proposed 2022 RTP/SCS would encourage development patterns in areas to reduce automobile traffic, automobile congestion, and commute lengths. The proposed 2022 RTP/SCS would meet the CARB-established goal of a net zero per capita increase in GHG emissions from passenger vehicles and light trucks in 2020 and 2035 (see Section 4.8, *Greenhouse Gas Emissions/Climate Change*). At the local level, the proposed 2022 RTP/SCS builds on and incorporates regional and local planning efforts of its member agencies, including local general plans. Other key regional and local examples include, but are not limited to:

- The Kings County 2016-2024 Housing Element
- The Kings County Urban Growth Boundary

The land use scenario envisioned in 2022 RTP/SCS was developed in close coordination with KCAG member agency planning staff and also builds on local general plans and general plan updates currently in process or completed. Central to the SCS is a land use plan identifying the general location of uses, residential densities, and building intensities within the region. Starting with land uses allowed by existing, adopted local general plans, the land use plan envisioned by the proposed 2022 RTP/SCS provides for further development of residential and commercial land uses, investment in alternative transportation modes, and a compact development pattern within existing mixed-use centers and in new neighborhoods. In addition, the proposed 2022 RTP/SCS would help the region reach its GHG emission reduction targets established by CARB under AB 32, SB 32, and SB 375, as discussed in Section 4.8, *Greenhouse Gas and Climate Change*.

The proposed 2022 RTP/SCS was assessed to determine whether the SCS land use pattern and strategies could conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. This review focused on the process used by KCAG to develop regional growth projections, the transportation network and programs, housing needs estimates, and the SCS land use strategies. The proposed 2022 RTP/SCS would not result in a physical change to the environment that has not already been addressed in the other resource chapters of this EIR. The impacts of any such conflicts are described throughout those sections of the EIR. This impact would be less than significant.

## Mitigation Measures

Mitigation measures are provided for applicable resources throughout their respective environmental issue area sections of the EIR to reduce impacts. No additional mitigation is required for this impact.

### c. Specific 2022 RTP/SCS Projects that May Result in Impacts

All proposed transportation projects summarized in Chapter 2, *Project Description*, would associate with Impacts LU-1 and LU-2.

#### 4.11.4 Cumulative Impacts

Intensified development of cities in the KCAG region could influence land uses in adjoining counties. Accordingly, the cumulative impact analysis area for land use and planning consists of the KCAG region and adjoining counties. Future development in this region that could divide an established community or conflict with any major land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect is considered in the analysis. This cumulative extent is used to evaluate potential impact from the combined growth in this region.

The KCAG region shares a border with five counties: Fresno, Tulare, Kern, San Luis Obispo, and Monterey. Land between each of these counties and the KCAG region is primarily undeveloped agricultural land, grazing land, or open space. The existing land use scenarios in the KCAG region would continue to develop the region and could result in expansion of urban areas into undeveloped land. However, because urban growth areas are bounded within the KCAG region itself, cumulative impacts would be less than significant (County of Kings 2010). Each of the five neighboring counties have adopted general plans that direct new growth to existing developed areas, strongly support agricultural land preservation, and are part of other regional transportation plans. These general plans include goals, policies and programs adopted for the purpose of avoiding or mitigating environmental effects. Development under these existing plans would, therefore, be required to comply with existing goals, policies, and programs within existing plans. Cumulative impacts would be less than significant.

Implementation of the proposed 2022 RTP/SCS would concentrate development in infill areas and as such, would not result in the division of established communities. Therefore, the contribution of the proposed 2022 RTP/SCS to this impact would not be cumulatively considerable. Implementation of the proposed 2022 RTP/SCS would result in significant and unavoidable impacts in several environmental issue areas, as outlined in Sections 4.1 through 4.16 of this EIR. The transportation projects and envisioned land use scenario would not result in additional impacts beyond the findings of significant and unavoidable impacts already analyzed in respective environmental issue area sections within this EIR and would not result in a physical change to the environment that has not already been addressed in this EIR. Implementation of mitigation as listed throughout resource chapters of this EIR would reduce impacts of the proposed 2022 RTP/SCS. Therefore, implementation of the proposed 2022 RTP/SCS would not result in a cumulatively considerable contribution due to conflicts with land use plans, policies, or regulations.

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## 4.12 Noise

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This section evaluates potential noise and vibration impacts from development facilitated by the proposed 2022 RTP/SCS.

### 4.12.1 Setting

#### **a. Overview of Noise and Vibration**

The following discussion describes the characteristics of noise and vibration. These characteristics are used to assess potential impacts at sensitive land uses. Noise- and vibration-sensitive land uses include locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, senior facilities, schools, hospitals, guest lodging, libraries and some passive recreation areas are examples of typical noise- and vibration-sensitive land uses.

#### **Noise**

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (California Department of Transportation [Caltrans] 2013).

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response, which is most sensitive to frequencies around 4,000 Hertz and less sensitive to frequencies around and below 100 Hertz (Kinsler, et. al. 1999). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner like the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dBA; reducing the energy in half would result in a 3 dBA decrease (Crocker 2007).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not “sound twice as loud” as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible (8 times the sound energy); and that an increase (or decrease) of 10 dBA sounds twice (half) as loud ([10.5x the sound energy] Crocker 2007).

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in level as the distance from the source increases. The manner in which noise reduces with distance depends on factors such as the type of sources (e.g., point or line, the path the sound will travel, site conditions, and obstructions). Noise levels from a point source typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance (e.g., construction, industrial machinery, ventilation units). Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013). The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site, such as a parking lot or smooth body of water, receives no additional ground attenuation and the changes in noise levels with distance (drop-off rate) result from simply the geometric spreading

of the source. An additional ground attenuation value of 1.5 dBA per doubling of distance applies to a soft site (e.g., soft dirt, grass, or scattered bushes and trees) (Caltrans 2013). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this “shielding” depends on the size of the object and the frequencies of the noise levels. Natural terrain features such as hills and dense woods, and man-made features such as buildings and walls, can significantly alter noise levels. Generally, any large structure blocking the line of sight will provide at least a 5-dBA reduction in source noise levels at the receiver (Federal Highway Administration [FHWA] 2011). Structures can substantially reduce exposure to noise as well. The FHWA’s guidelines indicate that modern building construction generally provides an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows.

The impact of noise is not a function of loudness alone. The time of day when noise occurs, and the duration of the noise are also important factors of project noise impact. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed. One of the most frequently used noise metrics is the equivalent noise level ( $L_{eq}$ ); it considers both duration and sound power level.  $L_{eq}$  is defined as the single steady A-weighted level equivalent to the same amount of energy as that contained in the actual fluctuating levels over time. Typically,  $L_{eq}$  is summed over a one-hour period.  $L_{max}$  is the highest root mean square (RMS) sound pressure level within the sampling period, and  $L_{min}$  is the lowest RMS sound pressure level within the measuring period (Crocker 2007).

Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using Day-Night Average Level ( $L_{dn}$ ), which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours; it is also measured using Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 p.m. to 7:00 a.m. (Caltrans 2013). Noise levels described by  $L_{dn}$  and CNEL usually differ by about 1 dBA. The relationship between the peak-hour  $L_{eq}$  value and the  $L_{dn}$ /CNEL depends on the distribution of traffic during the day, evening, and night. Quiet suburban areas typically have CNEL noise levels in the range of 40 to 50 dBA, while areas near arterial streets are in the 50 to 60-plus CNEL range. Normal conversational levels are in the 60 to 65-dBA  $L_{eq}$  range; ambient noise levels greater than 65 dBA  $L_{eq}$  can interrupt conversations (Federal Transit Administration [FTA] 2018).

## **Vibration**

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of Hz. The frequency of a vibrating object describes how rapidly it oscillates. The normal frequency range of most groundborne vibration that can be felt by the human body starts from a low frequency of less than 1 Hz and goes to a high of about 200 Hz (Crocker 2007).

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low frequency rumbling noise, referred to as groundborne noise. Groundborne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz), or when foundations or utilities, such as sewer and water pipes, physically connect the structure and the



vibration source (FTA 2018). Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. High-frequency vibrations diminish much more rapidly than low frequencies, so low frequencies tend to dominate the spectrum at large distances from the source. Discontinuities in the soil strata can also cause diffractions or channeling effects that affect the propagation of vibration over long distances (Caltrans 2020b). When a building is impacted by vibration, a ground-to-foundation coupling loss will usually reduce the overall vibration level. However, under rare circumstances, the ground-to-foundation coupling may actually amplify the vibration level due to structural resonances of the floors and walls.

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or RMS vibration velocity. The PPV and RMS velocity are normally described in inches per second. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (Caltrans 2020b).

## **b. Noise and Vibration Sources**

The principal noise generators in the KCAG region are associated with transportation (i.e., major roads, airports, and rail lines). Local collector streets are not typically significant noise sources as traffic volume and speeds are generally much lower than for freeways and arterial roadways.

Similar to the environmental setting for noise, the vibration environment is typically dominated by traffic from nearby roadways and activity on construction sites. Heavy trucks typically operate on major streets and can generate groundborne vibration that varies depending on vehicle type, weight, and pavement conditions. Nonetheless, vibration due to roadway traffic is typically not perceptible. The major noise and vibration sources in the region are described below.

### **Motor Vehicle Traffic**

Motor vehicles, including cars/light trucks, buses, and various types of trucks, are the most substantial source of noise in most of the KCAG region. This can be attributed to the extensive network of major, primary, and secondary arterials located throughout the region, as well as the large number of vehicle trips that occur each day.

The primary roadway corridor noise sources in the KCAG region is Interstate 5 (I-5) due to the high traffic volumes and high traffic speed along this corridor. In 2017, daily traffic on I-5 averaged approximately 38,000 vehicles per day through the KCAG region, ranging from a low of 35,500 vehicles at the Kings County/Kern County line to a high of 42,000 vehicles at the Kings County/Fresno County line (Caltrans 2022). As a result, noise levels along the I-5 corridor in the region exceed 65 dBA CNEL.

Traffic on other major transportation corridors in the KCAG region, such as State Route (SR) 33, 41, 43, 137, 198, and 269, can also generate noise in excess of 65 dBA CNEL within certain distances from the centerline of the freeway/roadway. Three of the four unincorporated Community Districts are bisected by a state route, with SR 198 crossing through Armona, and SR 41 crossing through both Stratford and Kettleman City. Many of the County-maintained Avenues are also utilized by cross traffic between cities and communities. According to the Kings County 2035 General Plan,

noise levels range from 59 to 77 Ldn at a distance of 100 feet from the centerline of Interstate 5 and the six state routes that traverse the County. Thus, noise-sensitive land uses in the vicinity of the roadway corridors have the potential to be exposed to noise in excess of what the County normally considers acceptable. Traffic on several regional arterial roads in the region also generates noise that can exceed normally acceptable standards for noise-sensitive uses.

## **Aircraft Operation**

The airports and aircraft used throughout the KCAG region include public, private, and military operations. Major airports include the Hanford Municipal Airport and the Lemoore Naval Air Station. There are also two private airports in Avenal and Corcoran, and several private airstrips and agricultural crop duster airstrips.

The Hanford Municipal Airport serves the majority of aviation demand within the KCAG region. Hanford Municipal Airport is the only city-owned air facility in the KCAG region and will remain the most active public use airport for the foreseeable future (Kings County 2010). There is one air charter service available and approximately 70 aircraft are based at the airport. Several crop dusters are also based at the airport but the crop dusters cannot land at the airport while carrying chemicals for agricultural spraying due to restrictions regarding chemical dumping (Kings County 2010). Growth of industrial and commercial uses in the Hanford area is expected to shift the emphasis from the roles that the airport currently serves for flight trainings and recreational uses which continue to account for the majority of operations. The percentage of operations by transient corporate aircraft is expected to increase progressively (Hanford, City of 2010).

The Naval Air Station Lemoore (NASL) is the Navy's largest master jet base and the only one on the west coast. NASL is the home port for all active-duty, light-attack aircraft squadrons assigned to the Pacific Fleet. The NASL is located in western Kings County and a portion of the station is in Fresno County. The NASL averages approximately 210,000 flight operations per year (NASL 2011).

The Avenal Airport, located adjacent to the City of Avenal off SR 33, is privately owned and operated. Prior permission is required for public use of the facility. The Avenal airport encompasses 83 acres which includes one runway consisting of compacted earth with some stabilization. Seven planes and gliders are based at the 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 of the airports are contained in plans or studies, including: Airport Master Plans, Airport Land Use Compatibility Plan, Comprehensive Airport Land Use Plans, Airspace Plans, and Airport Layout Plans, which are all incorporated by reference. Each of these plans or studies includes implementation goals, objectives, and policies and/or recommendations to lessen noise impacts.

In addition to airplanes, helicopter flights occur throughout the KCAG region. These flights typically follow major and primary arterials except for police patrol activities. Other flight-related activities include Kings County Sheriff's Office for search and rescue operations, electric utility power infrastructure work, and helicopter emergency medical services. Although single-event noise exposure resulting from helicopter operations may be considered a nuisance, the relatively low frequency and short duration of these operations do not significantly affect average daily noise levels anywhere in the KCAG region.

## **Railroad Operations**

Railroad operations generate high, relatively brief, intermittent noise events. These noise events are an environmental concern for sensitive uses located along rail lines and near sidings and switching yards. According to the FTA Transit Noise and Vibration Impact Assessment guidance document (2018), vehicle propulsion rail units generate the following noises: (1) whine from electric control systems and traction motors that propel rapid transit cars, (2) diesel-engine exhaust noise from locomotives, (3) air-turbulence noise generated by cooling fans and (4) gear noise. Additional noise of motion is generated by the interaction of wheels/tires with their running surfaces. The interaction of steel wheels and rails generates three types of noise: (1) rolling noise due to continuous rolling contact, (2) impact noise when a wheel encounters a discontinuity in the running surface, such as a rail joint, turnout or crossover and (3) squeal generated by friction on tight curves.

When comparing electric- and diesel-powered trains, speed dependence is strong for electric-powered transit trains because wheel/rail noise dominates, and noise from this source increases strongly with increasing speed. On the other hand, speed dependence is less for diesel-powered commuter rail trains, particularly at low speeds where the locomotive exhaust noise dominates. As speed increases, wheel-rail noise becomes the dominant noise source and diesel- and electric-powered trains will generate similar noise levels. For transit vehicles in motion, close-by sound levels also depend upon other parameters, such as vehicle acceleration and vehicle length, plus the type/condition of the running surfaces. For very high-speed rail vehicles, air turbulence can also be a significant source of noise. In addition, the guideway structure can also radiate noise as it vibrates in response to the dynamic loading of the moving vehicle.

Rail operations generate varying noise levels depending on the type of rail activity. Heavier commuter or freight trains, which are diesel-powered, generate more noise than electrically-powered light-rail vehicles. According to the FTA, six commuter trains traveling at 50 miles per hour with a horn blowing generate a noise level of 81 dBA  $L_{eq}$  at 50 feet. This same activity without a horn generates a noise level of 68 dBA  $L_{eq}$  at 50 feet. In comparison, 12 light rail transit trains traveling 40 miles per hour generate a noise level of 65 dBA  $L_{eq}$  at 50 feet. These same light rail transit trains generate a noise level of 57 dBA  $L_{eq}$  at 20 miles per hour at 50 feet (FTA 2018).

In much of the KCAG region, rail corridors are primarily located in agricultural lands and the three Cities of Corcoran, Hanford and Lemoore. Armona is the only unincorporated Community District with a rail line (San Joaquin Valley Railroad) traveling through it. Railroad operations within the County consist of the San Joaquin Valley Railroad (SJVRR) operating along the east-west railroad line and the BNSF Railway and Amtrak operating along the north-south railroad line. Railroad operations along the SJVRR track consist of approximately one to two trains per week. More frequent train trips occur along the north-south rail lines with daily Amtrak passenger trips, and freight trips departing from Hanford and Corcoran industrial parks (Kings County 2010).

## **Industrial and Manufacturing**

Noise from industrial complexes and manufacturing plants are characterized as stationary or point sources even though they may include mobile sources like heavy equipment. Local governments typically regulate noise from industrial, manufacturing and construction equipment and activities through enforcement of noise ordinance standards, implementation of general plan policies and imposition of conditions of approval for building or grading permits.

In general, in the KCAG region and throughout California, industrial complexes and manufacturing plants are located away from sensitive land uses and, as such, noise generated from these sources has less of an effect on surrounding properties.

## **Agricultural Operations**

There are numerous active agricultural uses within the County protected by the County's Right-to-Farm Ordinance. Noise generated by agricultural processes varies due to the wide array of equipment types and conditions under which that equipment is used. The Right-to-Farm Ordinance recognizes that "...agricultural activities and operations, including but not limited to, equipment and animal noise ...are conducted on a 24-hour a day, seven-day a week basis..." in the agricultural areas of the County. Therefore, a normal and usual agricultural operation creating elevated sound levels are not normally considered a nuisance. Maximum noise levels generated by farm-related tractors typically range from 77 to 85 dB at 50 feet from the tractor, depending on the horsepower and the operating conditions (Kings County 2010). Hail cannons are used in the County by some agricultural operations in attempt to prevent or limit damage to crops caused by hailstorms. These cannons generate high noise levels with the general theory that the shock wave from the noise will prevent hail from forming in the clouds (Kings County 2010).

## **Recreational Uses**

The Lemoore Raceway is in the southeast corner of SR 41 (19th Avenue) and Idaho Avenue in the City of Lemoore. The Raceway facility includes a 1/6-mile, semi-banked, midget car, clay oval track. Racing typically takes place on Saturday nights. Maximum noise levels associated with raceways such as the Lemoore Raceway can register between 100 and 120 dBA within the vicinity of the track. Adjacent properties are located within the County's jurisdiction, and noise generated by the raceway contributes to the ambient noise environment at these properties (Kings County 2010).

There are two water ski lakes located throughout Kings County. Significant noise sources at this type of facility include water ski boats and personal watercraft (jet skis). Water ski boat passbys produce a sound exposure level (SEL) of 80 dB and a maximum noise level (Lmax) of 70 dB can typically be expected at 100 feet from the boat passage. Based on a SEL of 80 dB per boat passage, and an assumed 40 passages per hour, the average hourly noise level at a reference distance of 100 feet would be approximately 60 dB Leq. BAC file data for modern personal watercraft (jet ski) passbys indicates that a sound exposure level (SEL) of 73 dB and a maximum noise level (Lmax) of 66 dB can typically be expected at 100 feet from the point of passage. Based on a SEL of 73 dB per jet ski passage, and an assumed 60 passages per hour, the average hourly noise level at a reference distance of 100 feet would be approximately 55 dB Leq (Kings County 2010).

## **Construction Noise and Vibration**

Noise and vibration from construction sites are characterized as stationary or point sources even though heavy construction equipment is often mobile. Construction activities typically generate high, intermittent noise and vibration on and adjacent to construction sites and related noise and vibration impacts are short-term, occurring primarily on weekdays and during daylight hours. The dominant source of noise from most construction equipment is their diesel engine. During pile driving or pavement breaking events, impact noise is the dominant source and equipment produces the highest vibration levels. Construction equipment operates in two modes, stationary and mobile. Stationary equipment operates in one location for one or more days at a time and can generate a constant noise level (e.g., pumps, generators, and air compressors) or variable noise levels (e.g., pile

drivers and pavement breakers). Mobile equipment moves around the construction site (e.g., dozers, tractors). Noise levels vary depending on the power cycle being used. Mobile equipment such as trucks, move to and from the site using adjacent streets/roads.

## 4.12.2 Regulatory Setting

### a. Federal Laws, Regulations, and Policies

Relevant federal regulations include those established by the FHWA, FTA, Federal Aviation Administration (FAA), and Department of Housing and Urban Development (HUD).

#### Federal Highway Administration

##### *Title 23, Part 772 of the Code of Federal Regulations - Traffic Noise*

Traffic noise impacts, as defined in 23 CFR § 772.5, occur when the predicted noise level in the design year approach or exceed the noise abatement criteria (NAC) specified in 23 CFR § 772, or a predicted noise level substantially exceeds the existing noise level (a “substantial” noise increase). A “substantial increase” is defined as an increase of 12 dB  $L_{eq}$  during the peak hour of traffic. For sensitive uses, such as residences, schools, churches, parks, and playgrounds, the NAC for interior and exterior spaces is 57 dB  $L_{eq}$  and 66 dB  $L_{eq}$ , respectively, during the peak hour of traffic noise. Table 4.12-1 summarizes NAC corresponding to various land use activity categories. Activity categories and related traffic noise impacts are determined based on the actual land use in a given area.

##### *Title 40, Part 205, Subpart B of the Code of Federal Regulations – Medium and Heavy Trucks*

Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 CFR Part 205, Subpart B. The federal truck pass by noise standard is 80 dB at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers. The FHWA regulations for noise abatement apply to federal or federally-funded projects involving the construction of a new highway or significant modification of an existing freeway when the project would result in a substantial noise increase or when the predicted noise levels approach or exceed the NAC.

**Table 4.12-1 Noise Abatement Criteria (NAC)**

Activity Category	Hourly $L_{eq}$	Hourly $L_{10}^1$	Analysis Location	Description of Activity Category
A	57	60	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67	70	Exterior	Residential
C	67	70	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios,

Activity Category	Hourly $L_{eq}$	Hourly $L10^1$	Analysis Location	Description of Activity Category
				recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings
D	52	55	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios
E	72	75	Exterior	Hotels, motels, offices, restaurants/bars and other developed lands, properties or activities not included in A-D or F
F	–	–	–	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical) and warehousing
G	–	–	–	Undeveloped lands that are not permitted

<sup>1</sup>  $L10$  is the level of noise exceeded for 10% of the time.

Source: FHWA 2018

### *Title 23, Part 772 of the Code of Federal Regulations – Federal and Federal-Aid Highway Projects*

Title 23 of the Code of Federal Regulations (23 CFR § 772) provides procedures for preparing operational and construction noise studies and evaluating noise abatement for federal and federal-aid highway projects. Under 23 CFR § 772.5, projects are categorized as Type I, II, or III projects.

FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes. A Type II project is a noise barrier retrofit project that involves no changes to highway capacity or alignment.

Type I projects include those that create a completely new noise source, increase the volume or speed of traffic, or move the traffic closer to a receiver. Type I projects include the addition of an interchange, ramp, auxiliary lane, or truck-climbing lane to an existing highway, or the widening an existing ramp by a full lane width for its entire length. Projects unrelated to increased noise levels, such as striping, lighting, signing and landscaping projects, are not considered Type I projects.

Under 23 CFR § 772.11, noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact. In such cases, 23 CFR § 772 requires that the project sponsor “consider” noise abatement before adoption of the environmental document. This process involves identification of noise abatement measures that are reasonable, feasible and likely to be incorporated into the project as well as noise impacts for which no apparent solution is available.

Type III projects are Federal or Federal-aid highway projects that do not meet the classification of a Type I or Type II project. Noise analysis is not required for Type III projects. Projects unrelated to increased noise levels, such as striping, lighting, signing, and landscaping projects, are considered Type III projects.

## **Federal Aviation Administration**

### *Title 14, Part 36 of the Code of Federal Regulations - Aircraft Noise*

Aircraft operated in the U.S. are subject to federal requirements regarding noise emissions levels. These requirements are set forth in Title 14 CFR, Part 36. Part 36 establishes maximum acceptable noise levels for specific aircraft types, considering the model year, aircraft weight and number of engines.

## **Federal Transit Administration**

The FTA has developed guidance to evaluate noise impacts from operation of surface transportation modes (i.e., passenger cars, trucks, buses, and rail) in the 2018 FTA *Transit Noise Impact and Vibration Assessment* (FTA 2018). All mass transit projects receiving federal funding must use these guidelines to predict and assess potential noise and vibration impacts. As ambient levels increase, smaller increments of change are allowed to minimize community annoyance related to transit operations.

## **Department of Housing and Urban Development**

### *Title 24, Part 51, Subpart B of the Code of Federal Regulations – Noise Abatement and Control*

The mission of HUD includes fostering “a decent, safe, and sanitary home and suitable living environment for every American.” Accounting for acoustics is intrinsic to this mission as safety and comfort can be compromised by excessive noise. To facilitate the creation of suitable living environments, HUD has developed a standard for noise criteria. The basic foundation of the HUD noise program is set out in the noise regulation 24 CFR Part 51 Subpart B, Noise Abatement and Control.

HUD’s noise policy requires noise attenuation measures be provided when proposed projects are to be located in high noise areas. Within the HUD Noise Assessment Guidelines, potential noise sources are examined for projects located within 15 miles of a military or civilian airport, 1,000 feet from a road or 3,000 feet from a railroad.

HUD exterior noise regulations state that 65 dBA  $L_{dn}$  noise levels or less are acceptable for residential land uses and noise levels exceeding 75 dBA  $L_{dn}$  are unacceptable. HUD's regulations do not contain standards for interior noise levels. The HUD regulations establish a goal of 45 decibels, and the attenuation requirements are focused on achieving that goal. The HUD guidelines assume that with standard construction methods and materials, any building will provide sufficient attenuation so that if the exterior level is 65 dBA  $L_{dn}$  or less, the interior level will be 45 dBA  $L_{dn}$  or less. Noise criteria are consistent with FHWA and related state requirements

## **b. State Laws, Regulations, and Policies**

### **Land Use Compatibility Guidelines**

The Governor’s Office of Planning and Research is required to adopt and periodically revise guidelines for the preparation and content of local general plans. The 2017 General Plan Guidelines (Governor’s Office of Planning and Research 2017) establish land use compatibility guidelines. Where a noise level range is denoted as “normally acceptable” for the given land use, the highest

noise level in that range should be considered the maximum desirable for conventional construction that does not incorporate any special acoustic treatment. The acceptability of noise environments classified as “conditionally acceptable” or “normally unacceptable” will also depend on the anticipated amount of time that will normally be spent outside the structure and the acoustic treatment to be incorporated in structural design.

With regard to noise-sensitive residential uses, the recommended exterior noise limits are 60 dBA CNEL for single-family residences and 65 dBA CNEL for multi-family residences. The recommended maximum interior noise level is 45 dBA CNEL, which could normally be achieved using standard construction techniques if exterior noise levels are within the levels described above.

## **Caltrans**

Caltrans establishes noise limits for vehicles licensed to operate on public roads (Caltrans 2013). For heavy trucks, the State pass by standard is consistent with the federal limit of 80 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 uses the NAC discussed above in connection with FHWA. In addition, Caltrans has published the Traffic Noise Analysis Protocol for assessing noise levels associated with roadway projects (Caltrans 2020a).

Caltrans has a *Transportation and Construction Induced Vibration Manual* that provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage (Caltrans 2020b).

Section 216 of the California Streets and Highways Code relates to the noise effects of a proposed freeway project on public and private elementary and secondary schools. Under this code, a noise impact occurs if, as a result of a proposed freeway project, noise levels exceed 52 dBA  $L_{eq}$  in the interior of public or private elementary or secondary classrooms, libraries, multipurpose rooms, or spaces. If a project results in a noise impact under this code, noise abatement must be provided to reduce classroom noise to a level that is at or below 52 dBA  $L_{eq}$ . If the noise levels generated from roadway sources exceed 52 dBA  $L_{eq}$  prior to the construction of the proposed freeway project, then noise abatement must be provided to reduce the noise to the level that existed prior to construction of the project.

## **California's Airport Noise Standards and Compatibility Planning**

The State of California has the authority to establish regulations requiring airports to address aircraft noise impacts near airports. The State of California's Airport Noise Standards, found in Title 21 of the California Code of Regulations, identify a noise exposure level of 65 dB CNEL as the noise impact boundary around airports. Within the noise impact boundary, airport proprietors are required to ensure that all land uses are compatible with the aircraft noise environment, or the airport proprietor must secure a variance from Caltrans.

## **California Noise Insulation Standards**

The California Noise Insulation Standards found in Title 24 of the California Code of Regulations set requirements for new multi-family residential units, hotels, and motels that may be subject to relatively high levels of transportation-related noise. For exterior noise, the noise insulation standard is 45 dBA  $L_{dn}$  in any habitable room and requires an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than 60 dBA  $L_{dn}$ .



## **State Aeronautics Act**

The State Aeronautics Act (Public Utilities Code, Section 21670 et seq.) requires the establishment of Airport Land Use Commissions (ALUCs), which are responsible for developing airport land use compatibility plans (ALUCPs) for noise-compatible land uses in the immediate proximity of a commercial or public airport (Section 21675). ALUCs have two major roles: preparation and adoption of ALUCPs, which address policies for both noise and safety and review of certain local government land use actions and airport plans for consistency with the land use compatibility plan.

The ALUCP is the major tool for ALUC land use regulation. The intent of the ALUCP is to encourage compatibility between airports and the various land uses that surround them. ALUCPs typically include the development of noise contours to identify excessive airport-related noise levels and measures to reduce noise levels.

The Aeronautics Division of Caltrans has published the *California Airport Land Use Planning Handbook* (Caltrans 2011). The purpose of the *California Airport Land Use Planning Handbook* is to provide guidance for conducting airport land use compatibility planning. This handbook includes a section related to noise and states, “The basic strategy for achieving noise compatibility in the vicinity of an airport is to prevent or limit development of land uses that are particularly sensitive to noise. Common land use strategies are ones that either involve few people (especially people engaged in noise-sensitive activities) or generate significant noise levels themselves (such as other transportation facilities or some industrial uses).”

### **c. Regional and Local Laws, Regulations, and Policies**

To identify, appraise and remedy noise and vibration problems in local communities, Kings County, and incorporated cities in the KCAG region are each required to adopt a noise element as part of their General Plan. Local governments use the Governor’s Office of Planning and Research’s General Plan Guidelines (2017), including land use compatibility guidelines, to prepare General Plan noise elements.

Each noise element is required to analyze and quantify current and projected noise levels associated with local noise sources, including, but not limited to: highways and freeways, primary arterials and major local streets, rail operations, air traffic associated with the airports; local industrial plants; and other ground stationary sources that contribute to the community noise environment. Beyond statutory requirements, local jurisdictions are free to adopt their own goals and policies in their noise elements, although most jurisdictions have chosen to adopt noise/land use compatibility guidelines that are similar to those recommended by the State. Land use compatibility considers both existing noise levels in a community, as well as community attitudes toward dominant noise sources.

In addition to regulating noise through noise element policies, local jurisdictions regulate noise through enforcement of local ordinance standards. These standards generally relate to noisy activities (e.g., use of loudspeakers and construction) and stationary noise sources and facilities (e.g., air conditioning units and industrial activities). The KCAG region has four incorporated cities, each of which has its own adopted noise standards. Noise standards for the County and incorporated cities in the KCAG region typically apply land-use compatibility criteria of 60-65 dBA  $L_{dn}$  as being the normally acceptable range for new residential developments, and interior noise criteria of 45 dBA  $L_{dn}$ , consistent with the overall State recommendations.

As discussed above, the State Aeronautics Act (Public Utilities Code, Section 21670 et seq.) requires the preparation of an ALUCP for nearly all public-use airports in the State (Section 21675). The Kings

County ALUCP addresses aviation related matters such as safety, noise, overflight, and height policies and safety zones (Kings County 1994). The ALUCP establishes areas of influence within which airport operations are likely to affect land uses or land uses could affect airport operations. The goal of the ALUCP is to protect residents from the negative environmental noise, safety and traffic impacts that can potentially be induced by airports. Safety and noise criteria are identified in the ALUCP so that land use conflicts with airport operations are minimized. The Lemoore Naval Air Station, a Federal Navy airport, and its land use compatibility throughout the KCAG region is discussed in the Naval Air Station (NAS) Lemoore Joint Land Use Study (JLUS) (Kings County Association of Governments 2011).

### 4.12.3 Impact Analysis

#### **a. Methodology and Significance Thresholds**

The analysis of noise impacts considers the effects of both temporary construction-related noise and long-term noise associated with proposed transportation system improvements. Temporary construction noise was estimated based upon levels presented in the FTA Transit Noise and Vibration Impact Assessment.

Appendix G of the State CEQA Guidelines identifies the following criteria for determining whether a project's impacts would have a significant impact related to noise; KCAG has added a threshold related to absolute noise increases:

1. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
2. Generate a substantial absolute increase in ambient noise;
3. Generate excessive groundborne vibration or groundborne noise levels; or
4. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

Kings County and the four incorporated cities within the KCAG region each have their own noise standards that can be used to determine impact significance. These local noise standards typically apply land-use compatibility criteria of 60-65 dBA CNEL as the normally acceptable range for residential developments, and interior noise criteria of 45 dBA CNEL, consistent with the overall State recommendations and the recommendations of HUD for residential uses.

The analysis of potential impacts assumes implementation of all applicable standards, including those established by local jurisdictions, counties, the State of California, and federal agencies, where appropriate.

This EIR analyzes noise impacts on a program level only. Future project-level analyses for various projects implementing the proposed 2022 RTP/SCS would be included in project-level CEQA analysis.

#### **b. Project Impacts and Mitigation Measures**

The following section discusses potential impacts and mitigation measures that may be associated with transportation projects and the land use scenario contained within the proposed 2022

RTP/SCS. Section 4.12.4 summarizes the impacts associated with capital improvement projects proposed in the proposed 2022 RTP/SCS. Due to the programmatic nature of the proposed 2022 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement projects and future projects under the land use scenario envisioned by the proposed 2022 RTP/SCS could result in the impacts as described in the following section.

**Threshold 1:** Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies

**Threshold 2:** Generate a substantial absolute increase in ambient noise

**Impact NOI-1 CONSTRUCTION ACTIVITY ASSOCIATED WITH TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD GENERATE A SUBSTANTIAL TEMPORARY INCREASE IN AMBIENT NOISE LEVELS IN EXCESS OF STANDARDS ESTABLISHED IN LOCAL GENERAL PLANS OR NOISE ORDINANCES AND WOULD GENERATE A SUBSTANTIAL ABSOLUTE NOISE INCREASE OVER EXISTING NOISE LEVELS. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

The operation of equipment during the construction of roadway infrastructure, as well as land-use development envisioned in 2022 RTP/SCS would result in temporary increases in noise in the immediate vicinity of individual construction sites. As shown in Table 4.12-2, average noise levels associated with the use of heavy equipment at construction sites typically range from 76 to 88 dBA at 50 feet from the source, depending upon the types of equipment in operation at any given time and the phase of construction. For projects that require pile driving, construction noise levels may reach 101 dBA at 50 feet from the source. For projects that do not require pile driving, the highest noise levels typically occur during excavation and foundation development, which involves the use of such equipment as backhoes, bulldozers, pile drivers, and front-end loaders.

**Table 4.12-2 Typical Noise Levels for Construction Equipment (dBA)**

Equipment	Typical Level 25 feet from the Source	Typical Level 50 feet from the Source	Typical Level 100 feet from the Source
Air Compressor	86	80	74
Backhoe	86	80	74
Concrete Mixer	91	85	79
Dozer	91	85	79
Grader	91	85	79
Jack Hammer	94	88	82
Loader	86	80	74
Paver	91	85	79
Pile-drive (Impact)	107	101	95

Equipment	Typical Level 25 feet from the Source	Typical Level 50 feet from the Source	Typical Level 100 feet from the Source
Pile-driver (Sonic)	101	95	89
Roller	91	85	79
Saw	82	76	70
Scarified	89	83	77
Scraper	91	85	79
Truck	90	84	78
Source: FTA 2018			

Noise generated by construction projects would vary depending on the project and intensity of equipment use. Roadway widening projects and new roadway projects would likely require the operation of multiple pieces of heavy-duty equipment that generate high noise levels. Alternatively, repainting/restriping projects typically requiring minimal use of heavy equipment. This conservative analysis assesses construction noise based on the operation of heavy-duty equipment. Noise levels from point sources such as individual construction sites associated with land use projects envisioned in the proposed 2022 RTP/SCS typically attenuate at a rate of 6 dBA per doubling of distance. Therefore, areas within 800 feet of a construction site with heavy-duty equipment may be exposed to noise levels exceeding 65 dBA. Areas within 3,200 feet of impact pile drivers may be exposed to noise levels exceeding 65 dBA.

Some local agencies in the KCAG region include specific regulations in their municipal code to reduce construction noise impacts. In most cases, these regulations restrict construction activities to specific times and days. Such local policies serve to reduce the impacts of noise on surrounding communities by prohibiting construction during the night when people are engaged in noise-sensitive activities like sleeping. Nevertheless, this impact is significant because applicable noise standards would be exceeded, or because a substantial temporary increase in ambient noise levels in the project vicinity would occur.

## Mitigation Measures

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measure developed for the proposed 2022 RTP/SCS program where applicable for transportation projects that would result in noise impacts, and where feasible and necessary based on project and site-specific considerations. Kings County and incorporated cities in the KCAG region can and should implement this measure where relevant to land use projects implementing the proposed 2022 RTP/SCS. Project-specific environmental documents may adjust this measure as necessary to respond to site-specific conditions.

### *NOI-1 Construction Noise Reduction*

To reduce construction noise levels to achieve applicable standards, implementing agencies for transportation and land use projects shall implement the measures identified below where feasible.

- a. **Compliance with local Construction Noise Regulations.** Implementing agencies shall ensure that, where residences or other noise sensitive uses are located within 800 feet of construction sites without pile driving, appropriate measures shall be implemented to ensure consistency with local noise ordinance requirements relating to construction. Specific techniques may include, but are not limited to, restrictions on construction timing, use of sound blankets on construction equipment, and the use of temporary walls and noise barriers to block and deflect noise.
- b. **Noise Complaint and Enforcement Manager.** Designate an on-site construction complaint and enforcement manager for projects within 800 feet of sensitive receivers. Implementing agencies shall post phone numbers for the on-site enforcement manager at construction sites along with complaint procedures and who to notify in the event of a problem.
- c. **Pile Driving.** For any project within 3,200 feet of sensitive receptors that requires pilings, the implementing agency shall require caisson drilling or sonic pile driving as opposed to pile driving, where feasible. This shall be accomplished through the placement of conditions on the project during its individual environmental review.
- d. **Construction Equipment Noise Control.** Implementing agencies shall ensure that equipment and trucks used for project construction utilize the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds).
- e. **Impact Equipment Noise Control.** Implementing agencies shall ensure that impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction be hydraulically or electrically powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, use of an exhaust muffler on the compressed air exhaust can lower noise levels from the exhaust by up to about 10 dBA. When feasible, external jackets on the impact equipment can achieve a reduction of 5 dBA. Whenever feasible, use quieter procedures, such as drilling rather than impact equipment operation.
- f. **Construction Activity Timing Restrictions.** Except where timing restrictions are already established in local codes or policies, construction activities shall be limited to:
  - Monday through Friday: 7 a.m. to 6 p.m.
  - Saturday: 9 a.m. to 5 p.m.
- g. **Placement of Stationary Noise Sources.** Locate stationary noise sources as far from noise-sensitive receptors as possible. Stationary noise sources that must be located near existing receptors will be equipped with the best available mufflers.

#### **IMPLEMENTING AGENCIES AND TIMING**

Implementing agencies for transportation projects are KCAG and transportation project sponsor agencies. Implementing agencies for land use projects are Kings County and incorporated cities within the KCAG region. This mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during construction, as applicable.

#### **Significance After Mitigation**

Implementation of Mitigation Measure N-1 would reduce construction noise impacts. However, even with implementation of Mitigation Measure N-1, construction noise from all 2022 RTP/SCS projects may not be reduced below applicable thresholds and impacts would remain significant and

unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

**Threshold 1:** Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies

**Threshold 2:** Generate a substantial absolute increase in ambient noise

**Impact NOI-2 TRANSPORTATION IMPROVEMENTS ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD GENERATE A SUBSTANTIAL PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN EXCESS OF STANDARDS OR OVER EXISTING NOISE LEVELS AND GENERATE A SUBSTANTIAL ABSOLUTE NOISE INCREASE OVER EXISTING NOISE LEVELS. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

## Traffic

Overall traffic levels on highways and roadways in the KCAG region are projected to increase as a result of regional growth through the year 2046 (refer to Section 4.13, *Transportation*).

The proposed 2022 RTP/SCS includes projects that would potentially increase traffic noise by increasing traffic levels along and in the vicinity of affected facilities. Such projects include intersection/interchange improvements, road widenings and extensions, road improvements that would allow increased traffic volumes. These projects are intended to relieve current or projected future traffic congestion or unacceptable safety conditions. However, in some cases, projects that expand roadway capacity would accommodate additional traffic volumes and/or relocate noise sources closer to sensitive receptors. Therefore, this impact is significant because applicable noise standards would be exceeded, or because a substantial permanent increase in ambient noise levels in the project vicinity would occur.

## Rail Operations

The proposed 2022 RTP/SCS includes investments in passenger rail and train service, such as rail crossing improvements, which would potentially increase rail activity along existing lines. The FTA has developed a screening procedure to identify locations where a rail project may cause a noise impact. The screening distances for requiring noise assessments for various types of projects are presented in Table 4.12-3.

**Table 4.12-3 Screening Distances for Noise Assessments – Rail Transit Projects**

Type of Project		Screening Distance (Feet)	
		Typical Level 50 feet from the Source	Typical Level 100 feet from the Source
Commuter Rail Mainline		750	375
Commuter Rail Station	With Horn Blowing	1,600	1,200
	Without Horn Blowing	250	200
Commuter Rail -Highway Crossing with Horns and Bells		1,600	1,200

Type of Project	Screening Distance (Feet)	
	Typical Level 50 feet from the Source	Typical Level 100 feet from the Source
Light Rail Transit	350	175
Street car	200	100
Access Roads	100	50
Low- and Intermediate-Capacity Transit	Steel Wheel	125
	Rubber Tire	90
	Monorail	175
Yards and Shops	1,000	650
Parking Facilities	125	75
Access Roads to Parking	100	50
Ventilation Shafts	200	100
Power Substations	250	125
Source: FTA 2018		

Rail transit projects included in the proposed 2022 RTP/SCS would be located primarily in urban areas near to facility ridership. Sensitive land uses located within the screening distances presented in Table 4.12-3 of new and expanded rail corridors would potentially be exposed to noise levels that exceed acceptable standards.

Overall, ambient noise levels would increase in excess of standards or over existing noise levels generating a substantial absolute noise increase over existing noise levels. This impact would be potentially significant.

## Bus Operations

The proposed 2022 RTP/SCS includes projects to improve existing bus service, such as installing bus shelters, widening streets, and constructing multimodal transit centers, which could indirectly increase bus operations. The FTA has developed a screening procedure to identify locations where a bus project may cause a noise impact. The screening distances for requiring noise assessments for various types of projects are presented in Table 4.12-4.

**Table 4.12-4 Screening Distances for Noise Assessments – Bus Transit Projects**

Type of Project	Screening Distance (Feet)	
	Unobstructed	Intervening Buildings
Busway	500	250
BRT on Exclusive Roadway	200	100

Type of Project		Screening Distance (Feet)	
		Unobstructed	Intervening Buildings
Bus Facilities	Access Roads	100	50
	Transit Center	225	150
	Storage and Maintenance	350	225
	Park and Ride Lots with Buses	225	150

Source: FTA 2018

Increased frequency of bus operations along existing corridors would increase noise for existing sensitive receptors along bus routes. However, the addition of local buses is unlikely to increase noise by significant levels as bus routes would be in urban areas with high ambient noise levels. Sensitive land uses located within the screening distances presented in Table 4.12-4 of new bus activity would potentially be exposed to noise levels that exceed acceptable standards.

Overall, ambient noise levels would increase in excess of standards or over existing noise levels generating a substantial absolute noise increase over existing noise levels. This impact would be potentially significant.

## Mitigation Measures

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measure developed for the proposed 2022 RTP/SCS program where applicable for transportation projects that would result in traffic noise impacts, and where feasible and necessary based on project and site-specific considerations. Project-specific environmental documents may adjust this measure as necessary to respond to site-specific conditions.

### *NOI-2 Noise Assessment and Control for Mobile and Point Source Reduction*

Implementing agencies for 2022 RTP/SCS projects shall complete detailed noise assessments using applicable guidelines (e.g., Caltrans Traffic Noise Analysis Protocol) for roadway projects that may impact noise sensitive receptors. The implementing agency shall ensure that a noise survey is conducted that, at minimum:

- Determines existing and projected noise levels
- Determines the amount of attenuation needed to reduce potential noise impacts to applicable State and local standards
- Identifies potential alternate alignments that allow greater distance from, or greater buffering of, noise-sensitive areas
- If warranted, recommends methods for mitigating noise impacts, including:
  - Appropriate setbacks
  - Sound attenuating building design, including retrofit of existing structures with sound attenuating building materials



- Use of sound barriers (earthen berms, sound walls, or some combination of the two)
- Locate transit-related passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations away from sensitive receptors to the maximum extent feasible.

Where new or expanded transportation projects are found to expose receptors to noise exceeding normally acceptable levels, the individual project lead agency shall implement techniques as recommended in the project-specific noise assessments. The preferred methods for mitigating noise impacts shall include the use of appropriate setbacks and sound attenuating building design, including retrofit of existing structures with sound attenuating building materials where feasible. In instances where use of these techniques is not feasible, the use of sound barriers (earthen berms, sound walls, or some combination of the two) shall be considered. Long expanses of walls or fences may be interrupted with offsets and provided with accents to prevent monotony. Landscape pockets and pedestrian access through walls may be provided. Whenever possible, a combination of elements shall be used, including open grade paving, solid fences, walls, and landscaped berms. Other techniques such as rubberized asphalt or “quiet pavement” shall be used where feasible to reduce road noise for new roadway segments or modifications requiring repaving. The effectiveness of noise reduction measures shall be monitored by taking noise measurements and installing adaptive mitigation measures to achieve applicable standards.

#### **IMPLEMENTING AGENCIES AND TIMING**

Implementing agencies for transportation projects are KCAG and transportation project sponsor agencies. This mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during construction, as applicable.

#### **Significance After Mitigation**

Implementation of Mitigation Measure N-2 would reduce noise from mobile sources. However, even with implementation of Mitigation Measure N-2, mobile source noise from buildout of the proposed 2022 RTP/SCS may continue to impact nearby noise sensitive receivers and exceed acceptable standards. Impacts would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

**Threshold 3:** Generate excessive groundborne vibration or groundborne noise levels

**Impact NOI-3 CONSTRUCTION ACTIVITIES ASSOCIATED WITH TRANSPORTATION PROJECTS UNDER THE PROPOSED 2022 RTP/SCS WOULD GENERATE EXCESSIVE GROUNDBORNE VIBRATION LEVELS. NEW TRUCK, BUS, AND TRAIN TRAFFIC RESULTING FROM THE PROPOSED 2022 RTP/SCS WOULD GENERATE EXCESSIVE VIBRATION LEVELS. THESE IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

#### **Construction**

Construction-related vibration has the potential to damage structures, cause cosmetic damage (e.g., crack plaster), or disrupt the operation of vibration-sensitive equipment. Vibration can also be a source of annoyance to individuals who live or work close to vibration-generating activities. Heavy construction operations can cause substantial vibration near the source. Table 4.12-5 shows vibration levels associated with typical construction equipment. Similar to construction noise,

vibration levels would be variable depending on the type of construction project and related equipment use.

**Table 4.12-5 Vibration Source Levels for Construction Equipment**

Equipment		Approximate Vibration Level (VdB)			
		25 feet from Source	50 feet from Source	100 feet from Source	200 feet from Source
Caisson Drilling		87	78	69	60
Jackhammer		79	70	61	52
Large Bulldozer		87	78	69	60
Loaded Truck		86	77	68	58
Pile Driver (impact)	Upper range	112	103	94	84
	Typical	104	95	86	77
Pile Driver (sonic)	Upper range	105	96	87	78
	Typical	93	84	75	65
Small Bulldozer		58	48	39	30
Vibratory Roller		94	85	76	67
Source: FTA 2018					

Typical project construction activities, such as the use of jackhammers, other high-power or vibratory tools, compactors, and tracked equipment, may also generate substantial vibration (i.e., greater than 0.2 inches per second PPV) in the immediate vicinity, typically within 15 feet of the equipment. Through the use of scheduling controls, typical construction activities would be restricted to hours with least potential to affect nearby properties. Thus, perceptible vibration can be kept to a minimum and not result in human annoyance or structural damage.

Some specific construction activities result in higher levels of vibration. Pile driving has the potential to generate the highest vibration levels and is the primary concern for structural damage to nearby structures, especially when near fragile and/or historic structures. Vibration levels generated by pile driving activities would vary depending on project conditions, such as soil conditions, construction methods and equipment used. Depending on the proximity of existing structures to each construction site, the structural soundness of the affected buildings and construction methods, vibration caused by pile driving or other foundation work with a substantial impact component such as blasting, rock or caisson drilling, and site excavation or compaction may be high enough to be perceptible outside the construction area and potentially damage existing structures.

Kings County and some of the incorporated cities in the KCAG region include regulations in their municipal code that reduce construction noise and vibration impacts. In most cases, these regulations restrict vibration-generating construction activities to specific times and days. Such local policies reduce the impacts of vibration on surrounding communities by prohibiting construction during the night when people are engaged in vibration-sensitive activities like sleeping.

Nevertheless, this impact is significant because some project-specific transportation project construction could cause excessive groundborne vibration or groundborne noise levels.

## **Operation**

The primary vibration sources associated with transportation system operations include heavy truck and bus traffic along roadways and train traffic along rail lines. However, vehicle traffic, including heavy trucks traveling on a highway, rarely generate vibration amplitudes high enough to cause structural or cosmetic damage, except in rare cases (e.g., where heavy truck traffic passes near fragile older buildings). Heavy trucks traveling over potholes or other pavement irregularities can cause vibration high enough to result in complaints from nearby residents. These conditions are commonly addressed by smoothing the roadway surface. Based on vibration measurements throughout California by Caltrans, worst-case traffic vibrations were shown to drop below the threshold of perception at distances of 150 feet or greater (Caltrans 2020b). Given that sensitive receptors are located within 150 feet of transportation facilities within the KCAG region, significant impacts related to vibration associated with truck traffic could occur.

Rail activity is also a source of vibration. Caltrans conducted measurements of vibration levels associated with train activity throughout the State and found a peak vibration level of 0.36 inches per second PPV at ten feet from the track (Caltrans 2004). Based on this reference vibration level, vibrations from train activity drop below the threshold of perception at distances greater than 250 feet. The proposed 2022 RTP/SCS includes rail crossing improvements, which would potentially increase rail activity along existing lines. These changes may expose nearby sensitive receptors and fragile buildings to a substantial increase in vibration levels relative to the existing condition. Impacts would be significant because excessive groundborne vibration or groundborne noise levels would be generated.

## **Mitigation Measures**

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the proposed 2022 RTP/SCS program where applicable for transportation projects that would result in vibration impacts, and where feasible and necessary based on project and site-specific considerations. Project-specific environmental documents may adjust these measures as necessary to respond to site-specific conditions.

### *NOI-3(a) Vibration Mitigation for Construction of Transportation Projects*

Where local vibration and groundborne noise standards do not apply, implementing agencies of 2022 RTP/SCS projects utilizing heavy construction equipment shall estimate vibration levels generated by construction activities and use the Caltrans vibration damage potential threshold criteria to screen for and screen out projects as to their potential to damage buildings on site or near a project.

**Table 4.12-6 Caltrans Vibration Damage Potential Threshold Criteria**

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Source
Extremely fragile historic buildings	0.12	0.08
Fragile buildings	0.20	0.10
Historic and some old buildings	0.50	0.25
Older Residential structures	0.50	0.30
New residential structures	1.00	0.50
Modern industrial structures	2.00	0.50
Source: Transportation and Construction Vibration Guidance Manual 2020b		

If construction equipment would generate vibration levels exceeding acceptable levels as established by Caltrans, implementing agencies shall, or can and should, complete the following tasks:

- Prior to construction, survey the project site for vulnerable buildings, and complete geotechnical testing (preconstruction assessment of the existing subsurface conditions and structural integrity), for any older or historic buildings within 50 feet of pile driving. The testing shall be completed by a qualified geotechnical engineer and qualified historic preservation professional and/or structural engineer.
- Prepare and submit a report to the lead agency that contains the results of the geological testing. If recommended by the preconstruction report implementing agencies shall require ground vibration monitoring of nearby historic structures. Methods and technologies shall be based on the specific conditions at the construction site. The preconstruction assessment shall include a monitoring program to detect ground settlement or lateral movement of structures in the vicinity of pile-driving activities and identify corrective measures to be taken should monitored vibration levels indicate the potential for building damage. In the event of unacceptable ground movement with the potential to cause structural damage, all impact work shall cease, and corrective measures shall be implemented to minimize the risk to the subject, or adjacent, historic structure.
- To minimize disturbance withing 550 feet of pile-driving activities, implement “quiet” pile-driving technology, such as predrilling of piles and the use of more than one pile driver to shorten the duration of pile driving), where feasible, in consideration of geotechnical and structural requirements and conditions as defined as part of the geotechnical testing, if testing was feasible.
- Use cushion blocks to dampen noise from pile driving.
- Phase operations of construction equipment to avoid simultaneous vibration sources

*NOI-3(b) Vibration Mitigation for Operation of Transportation Projects*

Where local vibration and groundborne noise standards do not apply, implementing agencies of 2022 RTP/SCS projects shall comply with all applicable local vibration and groundborne noise standards, or in the absence of such local standards, comply with guidance provided by the FTA in

*Transit Noise and Vibration Impact Assessment* (FTA 2018) to assess impacts to buildings and sensitive receptors and reduce vibration and groundborne noise. FTA recommended thresholds shall be used except in areas where local standards for groundborne noise and vibration have been established. Methods that can be implemented to reduce vibration and groundborne noise impacts include, but are not limited to:

- Rail Traffic
  - Maximizing the distance between tracks and sensitive uses
  - Conducting rail grinding on a regular basis to keep tracks smooth
  - Conducting wheel truing to re-contour wheels to provide a smooth-running surface and removing wheel flats
  - Providing special track support systems such as floating slabs, resiliently supported ties, high-resilience fasteners and ballast mats;
  - Implementing operational changes such as limiting train speed and reducing nighttime operations.
- Bus and Truck Traffic
  - Constructing of noise barriers
  - Use noise reducing tires and wheel construction on bus wheels
  - Use vehicle skirts (i.e., a partial enclosure around each wheel with absorptive treatment) on freight vehicle wheels

#### **IMPLEMENTING AGENCIES AND TIMING**

Implementing agencies for transportation projects are KCAG and transportation project sponsor agencies. These mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during construction, as applicable.

#### **Significance After Mitigation**

Implementation of Mitigation Measure N-3(a) would reduce potential construction vibration impacts. However, even with implementation of Mitigation Measure N-3(a), construction vibration from all 2022 RTP/SCS projects may not be reduced below applicable thresholds and impacts would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible. Implementation of Mitigation Measure N-3(b) would reduce potential operational vibration impacts. However, even with implementation of Mitigation Measure N-3(b), vibration from buildout of the proposed 2022 RTP/SCS may continue to be excessive. Impacts would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

**Threshold 1:** Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies

**Threshold 2:** Generate a substantial absolute increase in ambient noise

**Impact NOI-4 LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2022 RTP/SCS MAY PLACE SENSITIVE RECEPTORS IN AREAS WITH NOISE LEVELS IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL PLAN OR NOISE ORDINANCE. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

The proposed 2022 RTP/SCS is based on a land use and transportation scenario which defines a pattern of future growth and transportation system investment for the region emphasizing transit-oriented development (TOD) and infill development near transit and other transportation facilities, but development outside these areas could occur as well. Population and job growth is allocated principally within existing urban areas near public transit and existing transit corridors. New noise-sensitive development in infill areas could be exposed to noise levels exceeding County or incorporated city noise standards for residential land uses, specifically, the 65 dBA  $L_{dn}$  standard, with a lesser potential in more suburban and rural areas. Potential sources of noise exposure include traffic, rail and/or bus operations, commercial activity, and industrial activity. New development in infill areas near transit may also expose existing noise-sensitive uses to noise levels exceeding local noise thresholds. Impacts would be significant because applicable noise standards could be exceeded, or because infill project residents could be exposed to a substantial increase in ambient noise levels.

### **Mitigation Measure**

Kings County and incorporated cities within the KCAG region can and should implement the following mitigation measure where relevant to land use projects implementing the proposed 2022 RTP/SCS, and where feasible and necessary based on project and site-specific considerations. Project-specific environmental documents may adjust this measure as necessary to respond to site-specific conditions.

#### *NOI-4 Noise Mitigation for Land Uses*

If a land use project is located in an area with exterior ambient noise levels above local noise standards, the implementing agency shall ensure that a noise study is conducted to determine the existing exterior noise levels in the vicinity of the project. If the project would be impacted by ambient noise levels, feasible attenuation measures shall be used to reduce operational noise to meet acceptable standards. In addition, noise insulation techniques shall be utilized to reduce indoor noise levels to thresholds set in applicable State and/or local standards. Such measures may include but are not limited to: dual-paned windows, solid core exterior doors with perimeter weather stripping, air conditioning system so that windows and doors may remain closed, and situating exterior doors away from roads. The noise study and determination of appropriate mitigation measures shall be completed during the project's individual environmental review.

### **IMPLEMENTING AGENCIES AND TIMING**

Implementing agencies for land use projects are Kings County and incorporated cities within the KCAG region. This mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during construction, as applicable.

## Significance After Mitigation

Implementation of Mitigation Measure N-4 would reduce noise for sensitive land uses in areas that exceed noise standards. However, even with implementation of Mitigation Measure N-4, noise from buildout of 2022 RTP/SCS may continue to impact nearby noise sensitive receptors and exceed acceptable standards. This impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

**Threshold 4:** 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, expose people residing or working in the project area to excessive noise levels

**Impact NOI-5 TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD BE LOCATED IN CLOSE PROXIMITY TO EXISTING AIRPORTS SUCH THAT APPLICABLE EXTERIOR AND INTERIOR NOISE THRESHOLDS WOULD BE EXCEEDED. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

The proposed 2022 RTP/SCS emphasizes infill development near transit and other transportation facilities. Public airports typically service entire regions, whereas smaller private airports or airstrips tend to serve local users. However, like other noise sources, noise from airports and aircraft flight events have the greatest effect on nearby land uses. As shown in Table 4.12-7, there is one public use and three private use airports in the KCAG region that serve commercial and general aviation users.

**Table 4.12-7 Public and Private Airports within the KCAG Region**

Airport	Public/Private Use	Airport Land Use Compatibility Plan (YES/NO)
Hanford Municipal Airport	Public	Yes
Lemoore Naval Air Station	Private (Navy)	No
Corcoran Airport	Private	Yes
Avenal Airport	Private	No

Hanford Municipal Airport and Corcoran Airport have an active ALUCP (Kings County 1994) to discourage incompatible land uses within the vicinity of the airport. However, even with ALUCPs the potential still exists for forecasted development consistent with the proposed 2022 RTP/SCS to occur in areas of 70 dBA CNEL, exceeding recommended airport noise thresholds of 65 dBA CNEL for residential land uses and the project-specific land use compatibility thresholds of 70 dBA CNEL.

In addition to consideration of exterior CNEL noise levels, increases in interior noise levels near airports have the potential to result in sleep disturbance at nearby sensitive land uses. This discussion addresses aviation related noise issues; impacts related to exposure to aviation related safety hazards are discussed in detail in Section 4.9, *Hazards and Hazardous Materials* (Impact HAZ-4). In accordance with the Federal Interagency Committee on Noise (FICON) guidance, aircraft-generated interior single-event noise levels of 65 dBA could result in a 5 percent or less chance of awakening someone (FICON 1992). Local land use compatibility standards contained in city and county general plans would typically dictate whether specific site review was required for

construction of sensitive land uses in areas potentially affected by aircraft noise. However, given the regional scale of the proposed 2022 RTP/SCS, it is possible that the plan's forecasted land use development pattern could result in exposure to exterior and interior noise levels from existing airports or airstrips that exceed applicable thresholds. There would be a potentially significant impact resulting from excessive airport noise levels if projected development were to occur in close proximity to existing airports or airstrips. Because implementation of the proposed 2022 RTP/SCS land use development pattern could potentially result in land use development being located in close proximity to existing airports such that applicable exterior and interior noise thresholds would be exceeded, people residing or working in the area may be exposed to excessive noise levels. This is a significant impact that would require mitigation.

Some transportation projects in the proposed 2022 RTP/SCS would be within the vicinity of a private airstrip or an ALUCP. Individuals would not be exposed to airport-related noise during operation of these projects, as they would not entail habitable structures or other facilities in which people would work or visit. However, during construction of these projects, construction personnel would be exposed to excessive noise levels. Such exposure would be temporary, and therefore considered less than significant.

### **Mitigation Measures**

Kings County and incorporated cities within the KCAG region can and should implement the following mitigation measure where relevant to land use projects implementing the proposed 2022 RTP/SCS near existing public or public use airports, and where feasible and necessary based on project and site specific considerations. Project-specific environmental documents may adjust this measure as necessary to respond to site-specific conditions.

#### *NOI-5 Noise Mitigation Near Airports*

Implementing agencies for all new development proposed to be located within an existing airport influence zone, as defined by the locally adopted ALUCP or local general plan, or within two miles of a private use airport, shall require a site specific noise compatibility study. The study shall consider and evaluate existing aircraft noise, based on specific aircraft activity data for the airport in question, and shall include recommendations for site design and building construction. Such measures may include but are not limited to: dual-paned windows, solid core exterior doors with perimeter weather stripping, air conditioning system so that windows and doors may remain closed, and situating exterior doors away from roads, such as dual paned windows. The noise study and determination of appropriate mitigation measures shall be completed during the project's individual environmental review.

### **IMPLEMENTING AGENCIES AND TIMING**

Implementing agencies for land use projects are Kings County and incorporated cities within the KCAG region. This mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during construction, as applicable.

### **Significance After Mitigation**

To the extent that a local agency requires an individual project to implement Mitigation Measure N-5, the appropriate design and building construction would ensure compliance with relevant plans or codes, and this impact would be reduced to a less than significant level. However, even with implementation of Mitigation Measure N-5, noise from buildout of the proposed 2022 RTP/SCS may



continue to impact nearby noise sensitive receptors and exceed acceptable standards. This impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

### **c. Specific RTP/SCS Projects that May Result in Impacts**

All proposed 2022 RTP/SCS transportation projects listed in Chapter 2, *Project Description*, would have the potential to result in noise impacts described in Impacts N-1, N-2, N-3, N-4, and N-5. All projects that involve construction activities would result in temporary increases in noise and vibration associated with Impacts N-1 and N-3. The individual projects that would accommodate additional roadway or freeway traffic, or bus or rail activity could create significant noise and vibration impacts associated with Impact N-2 and N-3. In addition, road widening/extension projects or construction of new roadways have the potential to place roadway traffic noise closer to sensitive receptors. With the number of projects meeting those categories few, this potential impact would be minimal. Land use projects that would include TOD, infill, or other land use development may create significant impacts associated with Impact N-4. Additional specific analysis described in the above mitigation measures would need to be conducted as individual projects are implemented in order to determine the magnitude of project-specific impacts.

#### **4.12.4 Cumulative Impacts**

Noise resulting from roadway improvement projects envisioned in the proposed 2022 RTP/SCS could influence ambient noise levels in adjoining counties, if and where the projects are located in proximity to adjoining counties. Information regarding these adjoining counties can be found in Section 3, *Environmental Setting*. Therefore, the cumulative impact analysis area for noise consists of the KCAG region and the adjoining counties. Future development in this region that would result in cumulative significant and unavoidable noise impacts is considered in the analysis.

Construction of the transportation projects and the land use scenario envisioned in the proposed 2022 RTP/SCS would generate temporary noise impacts. The transportation projects are generally far enough away from adjoining counties that construction noise would generally not combine with ambient noise levels in these counties. The proposed 2022 RTP/SCS concentrates development in urban areas of the KCAG region, which is also generally far enough from adjoining counties that construction noise would not affect these counties. However, construction noise resulting from either the transportation projects or the land use scenario could combine with other ongoing noise or additional construction noise within the KCAG region, resulting in localized construction noise levels exceeding local standards. Cumulative impacts of construction noise would be significant. Implementation of Mitigation Measure N-1 would reduce some construction noise impacts; however, the proposed 2022 RTP/SCS contribution to the cumulative impact would be cumulatively considerable pre- and post-mitigation.

Operation of the transportation projects would generate noise. Noise would predominantly be from vehicles, such as the noise of engines or the noise generate from the friction between tires and the roadway surface. Generally, these noises affect ambient noise levels near the roadways. However, some of the proposed 2022 RTP/SCS transportation projects would increase inter-regional travel, because the proposed 2022 RTP/SCS addresses accommodating projected growth and because some projects are on regional roadways, such as State Route 43. Therefore, the proposed 2022 RTP/SCS would contribute to traffic noise outside the region. The cumulative impact would be significant, and the overall contribution of the proposed 2022 RTP/SCS to significant cumulative

traffic noise impacts, despite implementation of Mitigation Measures N-2 and N-4, would be cumulatively considerable pre- and post-mitigation.

Impacts associated with noise and vibration related to implementation of the proposed 2022 RTP/SCS would be generally experienced locally and are not cumulative in nature. These effects occur independently of one another, related to site-specific and project-specific characteristics and conditions. However, increased traffic from implementation of the proposed 2022 RTP/SCS could contribute to a significant increase in traffic noise levels on roadway segments throughout the cumulative impact analysis area, beyond accepted thresholds in various communities outside of the region. With implementation of Mitigation Measures N-3(a) and N-3(b) the proposed 2022 RTP/SCS contribution to this cumulative impact would be cumulatively considerable pre- and post-mitigation.

Transportation projects of the proposed 2022 RTP/SCS would not entail habitable structures or other facilities in which people would work or visit. However, construction of transportation projects in close proximity to existing airports would temporarily expose construction personnel to excessive noise levels. Due to the temporary nature of construction of transportation projects, impacts would be less than significant. Given the regional scale of the proposed 2022 RTP/SCS, it is possible that the plan's forecasted land use development pattern could result in exposure to exterior and interior noise levels from existing airports or airstrips that exceed applicable thresholds. People residing or working in close proximity to existing airports could be exposed to excessive noise levels. Therefore, the proposed 2022 RTP/SCS would contribute to the exposure of people residing or working in the area to excessive noise levels. The cumulative impact would be significant, and the overall contribution of the proposed 2022 RTP/SCS to exposure of people residing or working in the area to excessive noise levels, despite implementation of Mitigation Measure N-5. Impacts would be cumulatively considerable pre- and post-mitigation.

## 4.13 Transportation

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This section analyzes impacts to transportation within the KCAG region that would result from implementation of the proposed 2022 RTP/SCS.

### 4.13.1 Setting

Existing regional transportation networks and facilities in the KCAG region include an intermodal system consisting of a state and interstate highway system, bike and bus routes, rail, and aviation (County of Kings 2010). Several routes traverse the KCAG region that provide important links for employees and goods to other parts of California, such as the coast, Fresno, or Bakersfield.

The KCAG region transportation system has been designed to meet the needs of both residents and businesses. Geographically near the center of the State, the KCAG region is strategically positioned and provides key routes and linkages for the movement of goods throughout California and other states. The region contains Interstate (I)-5, which traverses from the California-Mexico border to the Washington-Canadian border. Given its location, the KCAG region serves as a transportation corridor for industrial, manufacturing, and agricultural activities.

The KCAG region has one airport, the Hanford Municipal Airport, open to the public. There are three airports, Lemoore Naval Air Station, Corcoran Airport, and Avenal Airport, within the KCAG region. A number of rail lines traverse the KCAG region and provide services for passengers and freight. Amtrak provides passenger service to the KCAG region, while the Burlington Northern & Santa Fe Railroad (BN&SF) and the San Joaquin Valley Railroad provide freight service (County of Kings 2010).

### Roadway Network

The KCAG region has an established network of roadways that serve the transportation needs of residents, visitors, and businesses. There are seven major freeways and highways in this area: I-5, State Route (SR)-41, SR-137, SR-198, SR-33, SR-269, and SR-43. I-5 is the major north-south route that leads north to Sacramento and south to Los Angeles. SR-33 runs parallel to I-5 in the KCAG region. SR-269 connects to I-5 north of Avenal. SR-41 and SR-198 run east-west and both connect to United States Route 101 on the west and continue toward Yosemite National Park and Sequoia National Park to the east, respectively. SR-43 connects the eastern KCAG region to Bakersfield to the south and Fresno to the north.

### Operations

A variety of performance measures are used to assess transportation systems. Depending on the type of performance evaluation required, performance measures may be very specific and focus on intersections or roadway segments, or performance measures may be aggregated to evaluate the overall operation of a regional transportation system. A regional travel model typically only contains information on the number of lanes, posted speed and link capacity on roadway segments and lacks information detailed enough to calculate accurate intersection information.

Because of the programmatic nature of the proposed 2022 RTP/SCS, the performance measures discussed herein are aggregated as a region to evaluate the overall performance of the transportation system. Roadway transportation performance measures that address performance goals include:

- Total vehicle miles traveled (VMT); and,
- VMT per capita.

The basic measure of the amount of roadway transportation generated is VMT. One vehicle traveling one mile constitutes one vehicle mile traveled, regardless of the size of the vehicle, vehicle type (car or truck), technology (gas, diesel, electric, hydrogen etc.), or the number of passengers in the vehicle. Increases in VMT are associated with regional growth that would occur with or without implementation of the proposed 2022 RTP/SCS. Thus, VMT data may not reflect deficient traffic operations,<sup>1</sup> although VMT may have a strong correlation with congestion.

Baseline VMT data for the KCAG region is shown in Table 4.13-1 below. Total VMT data accounts for all vehicle types and all travel within the region, including trips that originate and/or end outside of the KCAG region, and that pass through the KCAG region without having an origin or destination within the KCAG region.

An area's per capita (per person) VMT, as applied in this EIR, is the total VMT divided by the population of that area and is a measure of the average vehicle miles each person travels on a typical weekday. Per capita VMT tends to increase as a result of greater overall economic activity in the region, higher levels of per-household automobile ownership, and/or a jobs-housing imbalance that contributes to longer average commute distances.

**Table 4.13-1 Baseline VMT for KCAG Region**

Base Year	Regional VMT	VMT Per Capita <sup>1</sup>
2020	4,095,140	26.86

<sup>1</sup>VMT per capita is based on a population size of 149,455 persons (California Department of Finance [DOF] 2021)  
Source: DOF 2021; KCAG 2022a

## Public Transit

Public transportation services are provided through the Kings Area Regional Transit (KART) system, overseen by the Kings County Area Public Transit Agency (KCAPTA), and through the Corcoran Area Transit (CAT) (KCAG 2022b). KART is the countywide public rural and urban transportation provider. KART provides the City of Hanford access to ten total cities and communities within the KCAG region. KART also provides transit for eligible Americans with Disabilities Act (ADA) passengers as well as transportation services to the cities of Fresno and Visalia Monday through Friday (KART 2022).

The CAT operates as an on-demand service within the Corcoran area 8:00am to 5:00pm Monday through Friday. The Corcoran Depot serves as a transportation hub where CAT services connect with KART and Amtrak. Although the Corcoran Depot is not an official Amtrak station, the facility provides a self-serve Amtrak ticket dispenser for travelers and provides a centralized passenger link for Amtrak, KART, and CAT. The CAT also provides transit to and from the Tachi Palace Casino Resort in Lemoore and to and from the Corcoran State Prison and Corcoran Rehabilitation center (City of Corcoran 2022a; City of Corcoran 2022b).

Within the proposed 2022 RTP/SCS, approximately \$67 million in KART and CAT investments are planned, with a majority of funds invested toward decreasing greenhouse gas emissions through the purchase of zero-emission busses and other required infrastructure.

<sup>1</sup> Traffic operational measures such as roadway congestion and delay are not considered CEQA impacts.

## Rail

Approximately 67 miles of rail lines exist within the KCAG region that provides passenger and freight services. The Amtrak “San Joaquins” rail line provides passenger transit from Bakersfield to Stockton (eight round trips daily), where the line splits into two, with eventual end destinations being either San Francisco or Sacramento (Amtrak 2022). Amtrak stations are located in Hanford and Corcoran. BN&SF and the San Joaquin Valley Railroad provide freight service in the KCAG region. BN&SF connects the KCAG region to Sacramento and Bakersfield while the San Joaquin Valley Railroad connects to the city of Huron to the west and the cities of Visalia and Porterville to the east (Kings County 2010).

## Active Transportation (Bicycle and Pedestrian Facilities)

Both bicycling and walking within the KCAG region are attractive transportation alternatives due to the relatively flat topography and temperate climate during much of the year. Bikeways are facilities that primarily provide for, and promote, bicycle travel. The five types of bikeways identified by the California Manual on Uniform Traffic Control Devices and recognized in the KCAG region are identified below (Caltrans 2021):

- **Class I (Off-Street Bike Paths or Multi-Use Paths).** A Class I bikeway provides physical separation from motor vehicles and are often fully separated from the street. Interactions between bicyclists and vehicles are limited to roadway crossings.
- **Class II (On-Street Bicycle Lanes).** A Class II bikeway is striped adjacent to vehicle travel lanes, delineated either by a solid white line or by a larger hatched buffer space.
- **Class III (Bike Routes).** A Class III bikeway designates certain roadways as preferred streets for bicyclists. They typically include wayfinding signage for bicyclists as well as additional signage to increase driver awareness to the potential presence of bicyclists. Bicycle boulevards are a specific type of Class III Bike Route, best suited for low-speed, low-volume neighborhood streets with traffic calming enhancements. Rural bike routes are another type of Class III Bike Route that usually feature wide shoulders, striping, and intermittent rumble strips to provide space for cyclists to ride on rural roads or highways.
- **Class IV (Separated Bike Lanes).** A Class IV bikeway is located on the street, adjacent to vehicular traffic. Separated bike lanes provide more physical separation between bicyclists and motor vehicles than Class II, as separation always includes both vertical separation (parked vehicles, raised concrete curbs, planters, bollards, etc.) and horizontal separation (striped buffer, landscaped areas, etc.).

In 2019, KCAG adopted a Regional Active Transportation Plan (RATP) created to analyze existing issues and conditions related to walking and biking, identify high-priority projects, and provide better funding information and implementation strategies to equip the jurisdictions in the KCAG region to better compete for funding. All of KCAG’s member agencies have developed Class I, II, or III bicycle facilities to serve bicycle travel. The RATP also details long-range improvements that define an envisioned future bicycle system (KCAG 2019). Approximately \$2.3 million in bicycle lane investments are planned in the proposed 2022 RTP/SCS, not including multi-use paths.

## Air Transportation

The KCAG region has one public use and three private use airports that serve commercial and general aviation users. These airports are:

- Avenal Airport (Private) – Avenal
- Corcoran Airport (Private) – Corcoran
- Hanford Municipal Airport (Public) – Hanford
- Lemoore Naval Air Station (Federal: Navy) – Unincorporated Kings County

Hanford Municipal Airport is primarily used for small aircraft and general aviation and does not offer commercial flights. The Lemoore Naval Air Station hosts Navy owned and operated jets and functions as an active military base.

## **Emerging Travel and Mobility Options and Technology**

New transportation technologies can have an important influence on regional and national transportation systems, and some have already started to change longstanding transportation behaviors. Several new options that affect vehicle trips have begun emerging around the nation in the last decade. For example, transportation network companies, such as Uber and Lyft, provide ridesharing opportunities, similar to taxi for-hire services but are reserved for on-demand users who can request a ride through a smartphone app. Such services contract drivers using their personal vehicles to provide on-demand rides. These services began operations in roughly 2013 and operations continue today.

Micromobility, in the form of application-reservation-based e-scooters and bikeshare, is another emerging trend that was largely introduced in 2017. The micromobility industry has been highly volatile as many startup companies have emerged, consolidated, and/or discontinued operations over the last few years. Other transportation innovations include the following: connected and autonomous vehicles; mobility aggregation applications that provide users with one source for mobility services (e.g., Moovel, CityMapper); coordinated and adaptive traffic signals; active traffic management, which provides the ability to dynamically manage traffic through use of strategies such as adaptive ramp metering and adaptive traffic signal control; and unmanned aircraft systems. These and other emerging technologies have the potential to transform mobility choices and alter the transportation landscape.

Application-based food delivery services, such as UberEats, Grubhub, Doordash, and Postmates, have also expanded dramatically in recent years. Such services were fueled by the COVID-19 pandemic which limited or periodically closed dining at restaurants through most of 2020 and early 2021. Drivers for such food delivery services may operate trips for multiple food delivery and passenger applications simultaneously, depending on where demand is highest. Delivery of packages and parcels through traditional methods such as the Postal Service, UPS, FedEx, and newcomers like Amazon Prime also saw expansion as a result of the COVID-19 pandemic with trends increasing towards online shopping, resulting in fewer trips to traditional retail centers.

Beyond new travel options, emerging vehicle technology is beginning to influence travel behavior and safety. For example, smartphone applications such as Google Maps and Waze better inform travelers regarding route options, comparative costs, and dynamic routing to avoid significant delays. Safety technology on newer vehicles can include autonomous driving, assisted braking, lane guidance, and attentiveness alerts, all of which could reduce risk of collisions. Such features will likely become standard on most vehicles in the coming years. As collisions decline, some congestion-related collisions could be reduced over time.

In other technologies, KCAG has adopted an EV Readiness Plan and Caltrans has identified SR 198 as an EV corridor need to support zero emission electric vehicle use in the KCAG region.

## **Transportation Demand Management/Transportation System Management**

Transportation Demand Management (TDM) refers to all programs and strategies that are intended to reduce the number of vehicle trips required over the transportation network or shift the distribution of trips between time periods across the network (FHWA 2012). Transportation System Management represents a variety of management techniques designed to improve the efficiency and effectiveness of the transportation system. These techniques improve operations and/or services of existing and future transportation networks (FHWA 2012). As well, the KCAG region is subject to SJVAPCD Rule 9410 – Employer-based Trip Reduction Program for projects that fall under that rule.

## **Vehicle Flow Management**

The Department of Energy's Fuel-Efficient Traffic Signal Management Program has assisted in increasing the number of synchronized traffic signals within the region to promote free flowing vehicle transportation conditions, less use of vehicle fuel, and decreased pollution due to less vehicle miles traveled. In the past, some jurisdictions have implemented minor design improvements to the existing transportation infrastructure in lieu of costly capital construction or reconstruction. In the future, signalization, channelization, and the construction of acceleration and deceleration lanes with ramp metering at key interchanges are expected to achieve roadway vehicle flow improvements.

## **Intermodal Transportation**

Transportation engineers and planners in the KCAG region have employed one or more of the following methods of enhancing intermodality to increase the use of the existing transportation capacity more efficiently:

- Coordinate transit routes and schedules with those of rail and bus service;
- Provide amenities and facilities for bicycle and pedestrian access to transit stops;
- Provide pedestrian and bicycle pathways within Community Districts to connect residents to businesses, community gathering places, and educational facilities.

## **Ridesharing**

Rideshare programs help reduce congestion and improve traffic flow. Regionally, Kings County participates in CalVans Vanpool and KCAPTA operates the KART Vanpools. The rideshare programs are designed to facilitate carpooling for commuters within central California.

## **Preferential Transit/Carpool Treatment/Electric Vehicle Charging**

Methods employed by local jurisdictions to encourage people to reduce their use of single-occupant vehicles include preferential parking for carpools and vanpools; subsidized transit passes; use of agency vans for vanpooling; and provision of an on-site transportation coordinator. Regional transit agencies strive to ensure that major developments within their service areas are transit accessible and that transit stops are located to promote transit use.

## **Shared Parking Facilities**

Parking management refers to programs that result in more efficient use of parking resources and can either provide an incentive or disincentive to single occupant vehicle use. Parking facilities that

are shared between multiple users and destinations are found within the region. Park and ride lots are a form of off-site shared parking facilities that facilitate ridesharing. There are also Park-and-ride facility facilities located in the KCAG region. KCAG's various jurisdictions may also construct parking structures and create parking legislation as feasible and necessary.

### 4.13.2 Regulatory Setting

#### **a. Federal Laws, Regulations, and Policies**

##### **Moving Ahead for Progress in the 21st Century Act**

The Moving Ahead for Progress in the 21st Century Act (MAP-21), was enacted in 2012. Through the medium-term plan development process, MAP-21 encourages Metropolitan Planning Organizations (MPOs), such as KCAG, to consult with officials responsible for other types of planning activities that are affected by transportation in the area (including State and local planned growth, economic development, environmental protection, airport operations and freight movements) or to coordinate its planning process, to the maximum extent practicable, with such planning activities (23 U.S.C. §134(g)(3)(A)).

Specifically, MAP-21 requires that the medium-term planning process provide for consideration of projects and strategies that will:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency;
- Increase the safety of the transportation system for motorized and non-motorized users;
- Increase the security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation; and
- Emphasize the preservation of the existing transportation system (23 U.S.C. §134(h)(1)).

##### **Fixing America's Surface Transportation Act**

Fixing America's Surface Transportation (FAST) Act builds on the changes made by MAP-21 and was signed into law in December 2015 (Public Law 114-94). The FAST Act authorizes \$305 billion through fiscal year 2020 for highways, highway and motor vehicle safety, public transportation, rail and research and technology programs and provides a dedicated source of federal funds for freight projects. The FAST Act expands the scope of consideration of the metropolitan planning process to include consideration of intercity transportation, including intercity buses, intercity bus facilities and commuter vanpool providers; improving transportation system resiliency and reliability; reducing or mitigating the stormwater impacts of surface transportation; and enhancing travel and tourism. In addition, it requires strategies to reduce the vulnerability of existing transportation infrastructure to natural disasters.



Under the FAST Act, the U.S. Department of Transportation requires that MPOs, such as KCAG, prepare long-range transportation plans and update them every four years if they are in areas designated as “nonattainment” or “maintenance” for federal air quality standards. Before enactment of the FAST Act and its predecessor, MAP-21, the primary federal requirements regarding long-range transportation plans were included in the metropolitan transportation planning rules (23 CFR Part 450 and 49 CFR Part 613). The FAST Act makes a number of changes to the statutes that underpin these regulations. Per federal requirements, long-range transportation plans must:

- Be developed through an open and inclusive process that ensures public input; seeks out and considers the needs of those traditionally under served by existing transportation systems; and consults with resource agencies to ensure potential problems are discovered early in the planning process;
- Be developed for a period of not less than 20 years into the future; long-range transportation plans must reflect the most recent assumptions for population, travel, land use, congestion, employment and economic activity;
- Have a financially constrained element, transportation revenue assumptions must be reasonable, and the long-range financial estimate must take into account construction-related inflation costs;
- Include a description of the performance measures and performance targets used in assessing the performance of the transportation system;
- Include a system performance report evaluating the condition and performance of the system with respect to performance targets adopted by the state that detail progress over time;
- Include multiple scenarios for consideration and evaluation relative to the state performance targets as well as locally-developed measures.
- Conform to the applicable federal air quality plan, called the State Implementation Plan, for ozone and other pollutants for which an area is not in attainment; and
- Consider planning factors and strategies in the local context.

On September 30, 2020, the United States Senate approved H.R. 8337, which provides fiscal-year 2021 appropriations to federal agencies for continuing projects and activities of the federal government. Included in this act is a 1-year, \$13.6 billion extension of the FAST Act.

## **Infrastructure Investment and Jobs Act**

The Infrastructure Investment and Jobs Act (IIJA) replaced the expired FAST Act and was signed into law in November 2021 (Public Law 117-58). The IIJA authorizes \$973 billion through Fiscal Year 2022 for investment in all modes of transportation as well as investment in water, power and energy, environmental remediation, public lands, broadband, and overall resilience. The Act distributes the federal funds in three ways (National Association of Counties [NACO] 2022):

- Authorizations from the federal Highway Trust Fund for highway and transit programs;
- Authorizations of appropriations from the General Fund of the U.S. Treasury, subject to annual appropriations process; and
- Advanced appropriations over five years, independent of the regular appropriations process.

Of the \$973 billion, \$550 billion is to be allocated for new investments, such as funding provided through a surface transportation authorization law. Of the \$550 billion dedicated to new

investments, \$284 billion will be distributed to the U.S. Department of Transportation in order to modernize and make improvements across all modes of transportation. Those funds are reserved for the following (NACO 2022):

- Roads & Bridges: \$110 billion
- Transit: \$39 billion
- Rail: \$66 billion
- Safety: \$11 billion
- Airports: \$25 billion
- Ports & Waterways: \$17 billion
- Electric vehicle chargers: \$7.5 billion
- Electric buses: \$7.5 billion
- Reconnecting Communities: \$1 billion

Counties and MPOs, such as KCAG, can access the IIJA funds competitively, through federal grant programs and competitive processes run by state departments of transportation and MPOs, through suballocations based on populations from state departments of transportation, and through federal formulas such as transit formulas and the formula (entitlement) component of the Airport Improvement Program. Overall, the IIJA establishes a new, long-term surface transportation reauthorization and significantly increases the number of competitive grant opportunities via supplemental appropriations to the U.S. Department of Transportation (NACO 2022).

Specifically, California can expect to receive approximately \$29.5 billion over five years in Federal highway formula funding for state highway and bridge projects. The IIJA will assist in repairing and rebuilding roads and bridges with a focus on climate change mitigation, resilience, equity, and safety for all users, including cyclists and pedestrians. Additionally, the IIJA will improve healthy, sustainable transportation options for millions of Americans; California can expect to receive approximately \$10.3 billion over five years to improve public transportation options across the state. Finally, the IIJA is expected to help modernize and expand passenger rail in California while improving freight rail efficiency and safety (U.S. Department of Transportation 2022).

## **b. State Laws, Regulations, and Policies**

### **California Transportation Plan**

The California Transportation Plan is prepared by the California State Transportation Agency every five years to provide a long-range policy framework to meet the State's future mobility needs and reduce greenhouse gas (GHG) emissions to goals set by the California Global Warming Solutions Act of 2006 (Assembly Bill [AB 32], discussed in Section 4.9, *Greenhouse Gas Emissions/Climate Change*) and implementing legislation Senate Bill (SB) 375 (discussed below). The most recent California Transportation Plan was adopted in 2021 (Caltrans 2021). The California Transportation Plan defines goals, performance-based policies, and strategies to achieve the State's collective vision for California's future statewide, integrated, multimodal transportation system by envisioning a sustainable system that improves mobility and enhances quality of life. The California Transportation Plan is developed in collaboration with transportation stakeholders such as KCAG. Through ongoing engagement, the California Transportation Plan is intended to provide goals and visions to support a fully integrated, multimodal, sustainable transportation system that supports the quality of life, prosperous economy, human and environmental health, and social equity.

## **California Transportation Commission Regional Transportation Plan Guidelines**

The California Transportation Commission (CTC) publishes and periodically updates guidelines for the development of long-range transportation plans, such as KCAG's proposed 2022 RTP/SCS. Pursuant to Government Code Section 65080(d), each regional transportation planning agency (RTPA) is required to adopt and submit an updated RTP to CTC and Caltrans every four years. KCAG is the designated RTPA for Kings County.

Under Government Code Section 14522, the CTC is authorized to prepare guidelines to assist in the preparation of RTPs. The most recent update to the RTP guidelines was published in 2017 and includes separate guidance for RTPAs and MPOs and new checklists for RTP content (CTC 2017).

## **Climate Action Plan for Transportation Infrastructure**

The Climate Action Plan for Transportation Infrastructure was adopted on July 12, 2021 (CalSTA 2021). 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 Climate Action Plan for Transportation Infrastructure builds on executive orders signed by Governor Gavin Newsom in 2019 and 2020 targeted at reducing GHG emissions in transportation, which account for more than 40 percent of all emissions, to reach the state's ambitious climate goals (CalSTA 2021).

## **State Regional Transportation Plan Requirements**

Government Code Sections 65080 et seq. state that MPOs must prepare and adopt a long-range transportation plan, such as an RTP, directed at achieving a coordinated and balanced regional transportation system, including, but not limited to, mass transportation, highway, railroad, maritime, bicycle, pedestrian, goods movement and aviation facilities and services. The plan must be action-oriented and pragmatic, considering both the short-term and long-term planning, and shall present clear, concise policy guidance to local and state officials. Each transportation planning agency must consider and incorporate, as appropriate, the transportation plans of cities, counties, districts, private organizations and state and federal agencies.

Pursuant to Government Code section 65080(d), MPOs, such as KCAG, that are located in nonattainment and monitoring areas must update their long-range transportation plans at least every four years.

The CTC has developed RTP guidelines to assist MPOs with developing their RTPs so that they are consistent with federal and state transportation planning requirements. The guidelines are updated and adopted periodically, as needed. For the first time, two separate guidelines were adopted in January 2017 to guide RTP development in MPOs and RTPAs. Both documents incorporate new legislation and the associated goals, particularly related to reducing GHG emissions and improving air quality. Both the 2017 RTP Guidelines for MPOs and the 2017 RTP Guidelines for RTPAs specify that the requirements outlined in the documents apply to all RTP updates begun following adoption (CTC 2017).

The 2017 RTP Guidelines include guidelines for regional travel demand modeling. The regional travel demand model guidelines are "scaled" to different sizes of MPOs. The guidelines also describe the methods for projecting of future travel demand, as well as the key assumptions typical of transportation demand models. In addition, the guidelines describe the consultation and coordination process, which are designed to foster involvement by all interested parties including

air quality agencies, discuss the environmental considerations of an RTP, and list the general contents of an RTP document (CTC 2017).

### **Senate Bill 375**

The Sustainable Communities and Climate Protection Act of 2008 (Chapter 728, Statutes of 2008) (SB 375) diversified the areas of study from past RTPs to include land use impacts and climate change issues. Specifically, SB 375 requires MPOs to prepare a SCS that demonstrates how the region will meet its GHG reduction targets through integrated land use, housing, and transportation planning. The SCS must identify a transportation network that, when integrated with the forecasted development pattern for the KCAG region, will reduce GHG emissions from automobiles and light trucks in accordance with targets set by the California Air Resources Board (CARB).

Under SB 375, some development and transportation projects assumed as a part of the proposed 2022 RTP/SCS may be eligible to use a streamlined version of the environmental review process. Among other criteria, these projects must be consistent with the land use designation, density, intensity, and policies of the proposed 2022 RTP/SCS, and fall within the identified criteria for development and transportation projects. Streamlining under SB 375 is described in more detail in Section 1.5.1, *Streamlining Under SB 375*.

### **Senate Bill 743**

SB 743 (2013) changed the way that public agencies evaluate the transportation impacts of projects under CEQA, recognizing that roadway congestion, while an inconvenience to drivers, is not itself an environmental impact. (See PRC Section 21099(b)(2) [“automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to [CEQA]”].)

Under SB 743, the Governor’s Office of Planning and Research (OPR) established VMT as the preferred metric for measuring transportation impacts of most projects in place of vehicle level of service (LOS) or related measures of congestion as the primary metric. The use of VMT for determining significance of transportation impacts has become commonplace since the certification of this provision and the release of OPR’s Technical Advisory on Evaluating Transportation Impacts in CEQA in December 2018 and, as of July 1, 2020, is the required metric statewide (OPR 2018).

For land use projects, SB 743 provides opportunities to streamline transportation analysis under CEQA for qualifying urban infill development near major transit stops in metropolitan regions statewide, as described in more detail in Section 1.5.3, *Streamlining Under SB 743*. Additionally, the legislation establishes that aesthetic and parking impacts of these projects are not considered significant impacts on the environment.

SB 743 can also substantially affect the review of transportation projects under CEQA. Some projects, such as expanding facilities for bicycle, pedestrian, or transit only use, will not result in adverse transportation impacts because they are assumed not to substantially increase automobile trips. However, for roadway capacity projects, the CEQA guidelines (Section 15064.3) give lead agencies some discretion over what metric is used to evaluate transportation impacts, as some roadway expansion projects can induce vehicle travel. If using a metric besides VMT, however, the change in vehicle travel should still be reported. A program-level assessment of roadway projects in a regional plan may also be used to streamline project level analysis (OPR 2018).

Caltrans has provided two guidance documents to address VMT impacts on the state highway system consistent with the requirements of SB 743 and the OPR Technical Advisory:

- The Transportation Analysis under CEQA (TAC) provides information to support CEQA practitioners in making CEQA significance determinations for transportation impacts of projects on the state highway system. These could include land use projects or transportation projects (Caltrans 2020b).
- The Transportation Analysis Framework (TAF) guides the preferred approach for analyzing the VMT attributable to proposed projects (induced travel) in various project settings, with particular focus on the analysis of induced travel associated with transportation projects which would add road capacity to the transportation system (Caltrans 2020c).

### **State CEQA Guidelines Section 15064.3 and OPR Technical Advisory**

*State CEQA Guidelines* Section 15064.3 implements SB 743 and establishes VMT as the most appropriate measure of transportation impacts. The primary components of Section 15064.3 include:

- Identifies VMT as the most appropriate measure of transportation impacts;
- Declares that a project's effect on automobile delay shall not constitute a significant environmental impact (except for projects increasing roadway capacity);
- Creates a rebuttable presumption of no significant transportation impacts for (a) land use projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor, (b) land use projects that reduce VMT below existing conditions, and (c) transportation projects that reduce or have no impact on VMT;
- Allows a lead agency to qualitatively evaluate VMT if existing models are not available; and
- Gives lead agencies discretion to select a methodology to evaluate a project's VMT, but requires lead agencies to document that methodology in the environmental document prepared for the project.

CEQA lead agencies were required to comply with the State Guideline Section 15064.3 no later than July 1, 2020. The OPR in its *Technical Advisory on Evaluating Transportation Impacts in CEQA* has provided some language regarding the use of VMT (OPR 2018). Specifically, a threshold of 15 percent less VMT per capita than existing average VMT for the area is relevant for analyzing impacts related to the 2022 RTP/SCS, pursuant to the following language:

Based on OPR's extensive review of the applicable research, and in light of an assessment by the CARB quantifying the need for VMT reduction in order to meet the State's long-term climate goals, OPR recommends that a per capita or per employee VMT that is 15 percent below that of existing development may be a reasonable threshold. [¶] Fifteen percent reductions in VMT are achievable at the project level in a variety of place types. [¶] Moreover, a 15 percent reduction is consistent with SB 743's direction to OPR to select a threshold that will help the State achieve its climate goals. As described above, section 21099 states that the criteria for determining significance must "promote the reduction in greenhouse gas emissions." In its document the CARB 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals, CARB assesses VMT reduction per capita consistent with its evidence-based modeling scenario that would achieve State climate goals of 40 percent GHG emissions reduction from 1990 levels by 2030 and 80 percent GHG emissions reduction levels from 1990 by 2050. Applying California Department of Finance population forecasts, CARB finds per-capita light-duty vehicle travel would need to be approximately 16.8 percent lower than existing, and overall per-capita vehicle travel would need to be approximately 14.3 percent lower than existing levels under that

scenario. Below these levels, a project could be considered low VMT and would, on that metric, be consistent with 2017 Scoping Plan Update assumptions that achieve climate state climate goals... [¶] In summary, achieving 15 percent lower per capita (residential) or per employee (office) VMT than existing development is both generally achievable and is supported by evidence that connects this level of reduction to the State's emissions goals.

The KCAG region has been assigned a 13 percent reduction in VMT per capita by 2035 by the California Air Resources Board for their 2022 RTP/SCS. This goal is being used as the threshold for this EIR regarding VMT reduction per SB 375.

#### *Assembly Bill 1358*

AB 1358, also known as the Complete Streets Act of 2008, amended the California Government Code Section 65302 to require that any substantive revisions to a city or county's Circulation Element include provisions for accommodations of all roadway users, including bicyclists and pedestrians.

### **California Bicycle Transportation Act**

The California Bicycle Transportation Act of 1994 requires all cities and counties to have an adopted bicycle master plan to apply for Bicycle Transportation Account funding source. Existing bicycle master plans and other modal plans adopted within the KCAG region are described below.

## **c. Regional and Local Laws, Regulations, and Policies**

### **Regional Transportation Planning Agency Transportation Plans**

As described in Section 1.2, *Project Background*, KCAG functions as both the federally-designated MPO and the State-designated regional transportation planning agency RTPA Kings County. Under federal regulations (23 CFR 450.322(c)) and State law (Government Code 65080(d)), KCAG is required to prepare a long-range (at least 20-year) transportation planning document, known as the RTP. The RTP must be updated every four years and must be consistent with the California Transportation Plan. The RTP is generally an action-oriented document used to achieve a coordinated and balanced regional transportation system.

The 2018 Regional Transportation Plan (2018 RTP) was the last regional transportation plan adopted by KCAG. As a foundation for this RTP, many of the policies and strategies from the 2018 RTP remain relevant and have been carried forward. RTP/SCS changes to the policies and strategies in the 2018 RTP were primarily made to ensure consistency of the proposed 2022 RTP/SCS with SB 375 and to delete strategies that were completed since the 2018 RTP/SCS. Upon approval, the proposed 2022 RTP/SCS will supersede all of the policies and strategies in the 2018 RTP. Therefore, the specific policies and strategies contained in the 2022 RTP are not included in this analysis.

### **County and City General Plans**

#### *County of Kings 2035 General Plan*

The County of Kings 2035 General Plan's Circulation Element provides the framework for a County-wide transportation. Circulation Element policies and implementation are designed to promote enhanced compatibility between transportation modes and land use, while serving to reduce the adverse air quality impacts of transportation (County of Kings 2010).

#### *City of Avenal General Plan 2035*

The City of Avenal General Plan 2035 Circulation Element provides a transportation strategy that allows for the circulation of people, goods, infrastructure, and communications. The Circulation Element identifies circulation improvements needed to provide adequate capacity for future land uses. The Circulation Element emphasizes streets that serve the full range of users, including bicycle, pedestrian, and transit mobility to reduce dependency on car usage (City of Avenal 2018).

#### *City of Corcoran General Plan 2025*

The City of Corcoran 2025 General Plan Circulation Element aims to provide a safe, efficient, and adequate circulation system for Corcoran. The Circulation Element focuses on participation in regional programs to alleviate traffic congestion and construct capacity improvements. In addition, the Circulation Element emphasizes alternative modes of transportation and roadway design standards (City of Corcoran 2007).

#### *City of Hanford 2035 General Plan*

The City of Hanford 2035 Transportation and Circulation Element includes goals for a balanced multimodal transportation network. The Transportation and Circulation Element focuses on improving mobility for all forms of transportation in existing transportation networks and identifying new routes and systems to support future growth (City of Hanford 2017).

#### *City of Lemoore 2030 General Plan*

The City of Lemoore 2030 General Plan Circulation Element includes policies related to the physical framework for development that the Lemoore circulation system is designed to serve, including policies for parking and public transportation. The Circulation Element includes planned improvements to accommodate buildout, anticipated intersection improvements, and additional pedestrian street improvements (City of Lemoore 2008).

### 4.13.3 Impact Analysis

#### **a. Methodology and Significance Thresholds**

The criteria for determining whether the RTP/SCS would have significant environmental impacts related to transportation and traffic were based in part on the environmental checklist in Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.) and on performance measures established by KCAG. Significant impacts to transportation would occur if the plan would:

1. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;
2. Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), specifically resulting in
  - a. An overall increase in total regional VMT above baseline (2020) conditions;
  - b. A change in VMT per capita in the region that fails to reach 13 percent below baseline (2020) VMT per capita conditions; or
  - c. A substantial increase in induced travel due to roadway capacity expansions;
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

4. Result in inadequate emergency access; or,
5. Impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan

VMT was estimated by KCAG using an RTP baseline year of 2020 and an RTP horizon year 2046. The model uses land use, socioeconomic, and road network data, auto operation costs, and other inputs to estimate travel patterns, roadway traffic volumes and performance measures.

Vehicle miles of travel (VMT) were estimated from the travel demand model by multiplying link volumes by link distances. The model estimates intrazonal trips (trips remaining within a TAZ) but does not assign these trips to the model road network. The intrazonal trips were multiplied by the estimated intrazonal distances to calculate intrazonal VMT.

The VMT analysis consists of two parts: evaluating the change in total VMT and evaluating the change in VMT per capita. The change in total VMT (region-wide) was evaluated for the proposed 2022 RTP/SCS against both the existing conditions baseline and future no project scenario. This methodology is consistent with the OPR Technical Advisory on Evaluating Transportation Impacts in CEQA and the CEQA Guidelines (OPR 2018).

## **b. Project Impacts and Mitigation Measures**

The following section describes transportation impacts associated with the transportation projects and land use scenario included in the proposed 2022 RTP/SCS. Section 4.13.3.c summarizes the impacts associated with capital improvement projects in the proposed 2022 RTP/SCS. Due to the programmatic nature of the proposed 2022 RTP/SCS, a precise, project-level analysis of the specific impacts associated with each individual transportation and land use project is not possible. In general, however, implementation of proposed transportation projects and future projects under the land use scenario envisioned by the proposed 2022 RTP/SCS could result in the transportation impacts as described in the following sections.

**Threshold 1:** Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities

**Impact T-1      TRANSPORTATION PROJECTS AND LAND USE PROJECTS ENVISIONED BY THE PROPOSED 2022 RTP/SCS WOULD NOT CONFLICT WITH ANY PROGRAM, PLAN, ORDINANCE OR POLICY ADDRESSING THE CIRCULATION SYSTEM, INCLUDING TRANSIT, ROADWAY, BICYCLE AND PEDESTRIAN FACILITIES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.**

The proposed 2022 RTP/SCS is intended to improve the circulation system for all modes of transportation so that motor vehicles and non-motorized vehicles can use the streets simultaneously and safely. Specifically, the proposed 2022 RTP/SCS includes goals and objectives on a federal, state, and regional level that aim to develop a transportation system that encourages and promotes the safe and efficient development, management, and operation of surface transportation systems to equitably and safely serve the mobility and accessibility needs of people and freight and foster economic growth and development, while minimizing transportation-related fuel consumption, air pollution, and greenhouse gas emissions. Overall, the goals and objectives included in the proposed 2022 RTP/SCS are intended to ensure that future transportation projects would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.



Roadway transportation projects included under the proposed 2022 RTP/SCS consist of primarily road rehabilitation, operational/safety improvements (i.e., intersection control type changes, pedestrian and bicycle crossing treatments, and intersection channelization improvements). Such projects would not generally result in capacity increases and are considered safety and overall circulation improvements. The 2022 RTP/SCS does include some new or widened lower-classification roadways. These improvements serve to provide access to developing parcels and are not considered congestion relief projects. Therefore, the proposed 2022 RTP/SCS would be consistent with the California Transportation Plan and individual jurisdiction General Plans, as well as the goals and objectives outlined within the 2018 RTP/SCS and the proposed 2022 RTP/SCS. Active transportation projects included under the proposed 2022 RTP/SCS would add new pedestrian and bicycle facilities including Class II and Class III bike routes, sidewalks, and multi-use paths. Bicycle and pedestrian improvement projects identified in the proposed 2022 RTP/SCS are aimed primarily at improving bicycle and pedestrian safety and accessibility. Pedestrian and bicycle facilities would be designed and constructed in compliance with applicable safety regulations, such as the California Manual of Uniform Traffic Control Devices (Caltrans 2021). Transit projects included under the proposed 2022 RTP/SCS would bolster the existing operational network and improve transit centers. Such projects would result in increased transit ridership and improved rider experiences. Therefore, the proposed 2022 RTP/SCS would be consistent with individual jurisdiction General Plans and specific modal Transportation Plans, as well as the goals and objectives included in the 2018 RTP/SCS and the proposed 2022 RTP/SCS.

Since the proposed 2022 RTP/SCS would result in additional and improved facilities to accommodate pedestrian, bicycle, and transit travel modes, there would not be substantial disruption of bicycle, pedestrian, and transit facilities. In addition, the proposed 2022 RTP/SCS would result in roadway capacity increases, congestion relief, safety improvements, and overall circulation improvements. Therefore, the proposed 2022 RTP/SCS would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. This impact would be less than significant.

### **Mitigation Measures**

No mitigation measures are required.

- Threshold 2:** Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), specifically resulting in
- a. An overall increase in total regional VMT above baseline (2020) conditions would be considered a significant impact;
  - b. A change in VMT per capita in the region that fails to reach 13 percent below baseline (2020) VMT per capita conditions would be considered a significant impact; or
  - c. A substantial increase in induced travel due to roadway capacity expansions would be considered a significant impact.

**Impact T-2 THE PROPOSED 2022 WOULD RESULT IN AN OVERALL INCREASE IN REGIONAL VMT ABOVE BASELINE (2020) CONDITIONS. THE PROPOSED 2022 RTP/SCS WOULD RESULT IN AN INCREASE IN VMT PER CAPITA BELOW THE ABOVE BASELINE (2020) CONDITIONS. REGIONAL VMT AND VMT PER CAPITA IMPACTS FROM IMPLEMENTATION OF THE PROPOSED 2022 RTP/SCS WOULD BE SIGNIFICANT AND UNAVOIDABLE. THE INDUCED TRAVEL IMPACT AT THE REGIONAL LEVEL WOULD BE LESS THAN SIGNIFICANT.**

Table 4.13-2 below compares the total daily regional VMT and VMT per capita for baseline conditions in 2015 and for anticipated 2046 conditions with implementation of the proposed 2022 RTP/SCS on all roadways for the KCAG region as a whole. The daily VMT and VMT per capita anticipated in 2046 without implementation of the proposed 2022 RTP/SCS are also provided in Table 4.13-2 for informational and comparative purposes.

### Overall Increase in Regional VMT

The KCAG model used to estimate VMT includes an operational analysis of the regional transportation system under the conditions shown in Table 4.13-2. As described in Section 4.13.1, *Setting*, regional VMT data accounts for all vehicle types and all travel within the region, including trips that originate and/or end outside of the KCAG region (pass-through trips), while an area's VMT per capita is the total VMT divided by the population of that area and is a measure of average vehicle miles each person travels on a typical weekday.

**Table 4.13-2 VMT Results Summary**

Scenario	Regional VMT	VMT per Capita <sup>1</sup>
Baseline Conditions (2020)	4,095,140	26.86
2046 Conditions with proposed 2022 RTP/SCS	5,467,919	29.93
2046 Conditions without proposed 2022 RTP/SCS	5,652,866	30.95

<sup>1</sup> VMT per capita is derived by dividing total regional VMT by the population size of 149,455 persons (2015) and 182,661 (2046).  
Source: KCAG 2022; DOF 2021

As shown, Table 4.13-2, the proposed 2022 RTP/SCS is projected to increase the total regional VMT above 2020 baseline conditions. Total regional VMT would increase by 1,372,779 miles with implementation of the proposed 2022 RTP/SCS, which would be an approximate 33.5 percent increase from the baseline 2020 conditions. Therefore, this impact would be significant.

For informational purposes, Table 4.13-2 shows that total regional VMT would increase by 1,557,726 miles without implementation of the proposed 2022 RTP/SCS, which would be an approximate 38.0 percent increase from baseline 2020 conditions. This demonstrates that

population growth in the KCAG region would increase daily VMT, regardless of implementation of the proposed 2022 RTP/SCS, and the VMT in 2046 with the proposed 2022 RTP/SCS would be lower than without the proposed 2022 RTP/SCS. Nevertheless, because total regional VMT would increase above baseline (2020) conditions, the impact is considered significant.

### Overall Increase in per Capita VMT

Table 4.13-2 shows that daily VMT per capita would increase from 27.03 to 29.93 by 2046 with implementation of the proposed 2022 RTP/SCS, an increase of approximately 10.7 percent. As such, the proposed 2022 RTP/SCS would increase above baseline (2015) VMT per capita conditions in 2046. Therefore, this impact would be significant.

For informational purposes, Table 4.13-2 shows without implementation of the proposed 2022 RTP/SCS, daily VMT per capital would increase from 27.03 to 30.95 by 2046. This would be an increase of approximately 14.5 percent. As such, VMT per capita in 2046 with the proposed 2022 RTP/SCS would be lower than without the proposed 2022 RTP/SCS. Nevertheless, because VMT per capita would increase, the impact is considered significant.

### Induced Travel

It should be noted that although this is a program-level analysis, and not project specific, some of the proposed 2022 RTP/SCS projects include expanding the capacity of locally maintained roads in Hanford and Lemoore.

Numerous studies and research suggest that an expansion of state highway capacity may induce travel (California Governor's Office of Planning and Research [OPR] 2018). According to OPR, the initial reduction in traffic congestion and travel times from increased capacity is attractive to travelers, resulting in great utilization on the improved facility and thereby increasing the total VMT. These types of projects may result in the following trip-making changes, which have implications for total VMT (OPR 2018):

- **Longer Trips.** The ability to travel a long distance in a shorter time increases the attractiveness of destinations that are further away, increasing trip length and VMT.
- **Changes in Mode Choice.** When transportation investments are devoted to reducing automobile travel time, travelers tend to shift toward automobile use from other modes, which increases VMT.
- **Route Changes.** Faster travel times on a route attract more drivers to that route from other routes, which can increase or decrease VMT depending on whether it shortens or lengthens trips.
- **Newly Generated Trips.** Increasing travel speeds can induce additional trips, which increases VMT. For example, an individual who previously telecommuted or purchased goods on the internet might choose to accomplish those ends via automobile trips as a result of increased speeds.
- **Land Use Changes.** Faster travel times along a corridor lead to land development further along that corridor; that development generates and attracts longer trips, which increases VMT. Over several years, this component of induced VMT can be substantial, e.g., approximately half of the total effect on VMT.

The KCAG travel demand model appropriately addresses and reflects the short-term induced VMT effects of longer trips, mode choice changes and route changes. Longer-term induced VMT effects

are specifically related to land use changes (i.e., discrete choice of housing and/or employment location decisions). The proposed 2022 RTP/SCS coordinates land use and transportation projects through the 2046 horizon year. The SCS identifies a land use strategy that supports the objectives of SB 375 to achieve, among other things: increased roadway optimization, increased modes of travel other than single occupancy automobiles, increased access to jobs and amenities, minimized increases in VMT and reduced GHG emissions. Among the strategies to meet these goals is a mix of land uses balanced to minimize VMT and maximize the ability for residents and visitors of the region to conduct everyday activities without the need to travel by car. Hence, the transportation system performance results discussed in the EIR's transportation impact analysis capture the effects of land use changes on overall travel demand in the region.

As described previously, there are no capacity-increasing state highway improvement projects included in the proposed KCAG 2022 RTP/SCS. The few capacity increasing roadway projects are limited to local, local collector or minor arterial locally owned facilities in Lemoore and Hanford. The need for these roadway projects is not for congestion relief but to provide necessary access to approved/planned residential developments of which over 98% is occurring within city limits – as such these projects are not considered VMT inducing. Also as documented in the 2022 RTP/SCS, based on federal performance metrics for congestion and travel time reliability – the state highway system and non-state roadways designated as part of the National Highway System in Kings are uncongested and reliable. As such, the requisite travel time savings (i.e., at least 15 minutes of travel time savings) needed to induce VMT changing behaviors is not present – particularly for these lower functional classification improvements.

The KCAG region has implemented several plans and programs to reduce induced travel. one of these programs are CalVans agricultural vanpool program that provides qualified agricultural workers with safe, affordable vans they can use to drive themselves and others to work. Another is the KCAG's 2019 Active Transportation Plan. The plan details gaps and deficiencies in the regional bike and pedestrian network, with cost estimates on filling in the regional bike network. In 2020, KCAG led the development of an Electric Vehicle Readiness Plan (EVRP). The EVRP found that public assurances of charger availability greatly increased plugin electric vehicle (PEV) uptake in the county, reducing potential CO2 emissions by over 100 million pounds, NOx emissions by nearly 250 tons by 2030, and other harmful tailpipe emissions.

Given the rural nature of Kings County and the local nature of the roadway projects included in the proposed 2022 RTP/SCS, induced vehicle travel effects would not be anticipated. Therefore, at the regional level additional VMT resulting specifically from induced travel demand would not be substantial, and the induced travel impact at the regional level would be less than significant.

The following mitigation measures would reduce VMT impacts.

## **Mitigation Measures**

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the proposed 2022 RTP/SCS where applicable for transportation projects. For land use projects under their jurisdiction, the County and incorporated cities in the KCAG region can and should implement the following mitigation measures. Project specific environmental documents may adjust these mitigation measures as necessary to respond to site specific conditions.

### *T-2(a) Regional VMT Reduction Programs*

Implementing agencies shall require implementation of VMT reduction strategies through TDM programs, impact fee programs, in-lieu fee programs, and other land use project conditions that reduce VMT. Programs shall be designed to reduce VMT from existing land uses, where feasible, and from new discretionary residential or employment land use projects. The design of programs and project specific mitigation shall focus on VMT reduction strategies that increase travel choices and improve the comfort and convenience of sharing rides in private vehicles, using public transit, biking, or walking. Modifications may include but are not limited to:

- Provide car-sharing, vanpool, bike sharing, and ride-sharing programs
- Implement or provide access to commute reduction programs
- Improve pedestrian or bicycle networks, or transit service
- Provide transit passes
- Encourage telecommute programs
- Incorporate affordable housing into the project
- Increase density
- Increase mixed uses within the project area
- Incorporate improved pedestrian connections within the project/neighborhood
- Incentivize development in low VMT communities
- Incentivize housing near commercial and offices
- Increase access to goods and services, such as groceries, schools, and daycare
- Incorporate neighborhood electric vehicle network
- Orient the project toward transit, bicycle, and pedestrian facilities
- Provide traffic calming
- Provide bicycle parking
- Limit parking
- Provide incentives to purchase electric vehicles
- Construct intelligent transportation system management/intelligent transportation system (TSM/ITS) measures such as ramp metering, signalization of intersections, and changeable message signs
- Provide a VMT mitigation bank or exchange program

### **IMPLEMENTING AGENCIES AND TIMING**

Implementing agencies for transportation projects are KCAG and transportation project sponsor agencies. Implementing agencies for land use projects are cities and counties. This mitigation measure shall, or can and should, be applied during project permitting and environmental review and implemented during project operation, as applicable.

### **Significance After Mitigation**

If implementing agencies adopt and require the mitigation measures outlined above, impacts would be reduced because less VMT would be added to the KCAG region. However, the implementation of project-level VMT-reducing measures, such as mixed uses, may not be feasible and cannot be

guaranteed on a project-by-project basis. Regional VMT-reduction programs, such as VMT banks, may also not be feasible as there are currently no procedures or policies in place to establish such facilities. Therefore, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

**Threshold 3:** Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)

**Impact T-3                    TRANSPORTATION AND LAND USE PROJECTS IMPLEMENTED UNDER THE PROPOSED 2022 RTP/SCS WOULD NOT SUBSTANTIALLY INCREASE HAZARDS DUE TO GEOMETRIC DESIGN FEATURES OR INCOMPATIBLE USES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.**

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The regional growth pattern of the proposed 2022 RTP/SCS does not define design level features of roadways. While the proposed 2022 RTP/SCS expands development and increases density in growth geographies, this growth would not impact geometric design features or roadway uses in a consistent way, as those design standards and uses are established and enforced at the local jurisdictional level. Specific transportation projects identified in the proposed 2022 RTP/SCS consist of widening existing roadways, rehabilitation projects, and median installation, all of which would result in improved circulation and safety. Future transportation projects would also be subject to design guidelines established by the State or the local jurisdiction with authority over the project, including curve radii on curving road segments, maximum road grade/slope, and minimum separating distance between intersections and driveways.

Construction activities resulting from implementation of the proposed 2022 RTP/SCS would be short term, intermittent, and geographically dispersed. At the regional level, these disruptions would be localized, and impacts would be limited and would not represent a significant impact to the operations of the regional transportation system. At the local level, construction activities could increase travel on local roads and result in detours or increased congestion in certain locations. The actual construction details of land use development projects and proposed transportation projects are not known, because the projects are in the early stages of planning. Construction impacts would be evaluated at the project level as more information about the timing, design, scope, and construction program are available. Generally, construction activities for land use development and transportation projects would be required to be conducted in accordance with, and subject to review by, all applicable State and/or local jurisdictions with authority over the project; thus, ensuring projects would be designed to minimize the potential for hazardous conditions and to ensure safe travel by all modes.

Future transportation projects would be required to conform to the design standards of the public agency responsible for implementation, including safety standards. As such, the proposed 2022 RTP/SCS would not negatively impact the design of transportation facilities by increasing hazards. Rather, investments would incentivize design improvements to make roadways safer. Therefore, the proposed 2022 RTP/SCS would not substantially increase hazards due to geometric design features or incompatible land uses, and the impact would be less than significant.

Similarly, the proposed 2022 RTP/SCS would not adversely impact the compatible use of transportation facilities. Rather, investments would incentivize design improvements to make roadways safer. The SCS does not introduce new agricultural uses or other similar uses that would result in increased incompatible vehicle uses on roadways in the region, such as slow-moving farm equipment. In addition, specific transportation projects under the proposed 2022 RTP/SCS would be subject to and would follow the allowable uses established by the State or the local jurisdiction with

authority over the project. Therefore, the proposed 2022 RTP/SCS would not substantially increase hazards due to incompatible uses.

Furthermore, the 2022 RTP/SCS does not include components that would result in changes in air traffic patterns that would result in substantial safety risks. To minimize any unanticipated safety risks, any development and subsequent planning decisions in proximity to airports would be subject to review under the State Aeronautics Act provided under Public Utilities Code §§ 21167 et seq. Specific projects that may affect navigable airspace are also subject to FAA review, as outlined under 14 CFR Parts 77.5, 77.7 and 77.9.

Overall, this impact would be less than significant.

### Mitigation Measures

No mitigation measures are required.

**Threshold 4:** Result in inadequate emergency access

**Threshold 5:** Impair or physically interfere with an adopted emergency response plan or emergency evacuation plan

**Impact T-4      TRANSPORTATION AND LAND USE PROJECTS IMPLEMENTED UNDER THE PROPOSED 2022 RTP/SCS WOULD NOT RESULT IN INADEQUATE EMERGENCY VEHICLE ACCESS, NOR WOULD PROJECTS IMPLEMENTED UNDER THE PROPOSED 2022 RTP/SCS IMPAIR IMPLEMENTATION OR PHYSICALLY INTERFERE WITH AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.**

Transportation infrastructure plays a key role in providing access to destinations during emergencies. These systems must be able to accommodate emergency response vehicles, personnel, and equipment. In the event of an emergency or disaster, the KCAG region's roads and other transportation networks can determine the success or failure of the region during the emergency and in recovery. The proposed 2022 RTP/SCS would not implement specific design features or specifications for new project-level development or other transportation facilities. However, the specific projects and programs identified in the proposed 2022 RTP/SCS would entail upgrades and improvements to existing transportation infrastructure, resulting in increased roadway capacity, congestion relief, circulation improvements, and overall roadway safety improvements. As such, implementation of the proposed 2022 RTP/SCS would improve performance of the transportation system in the KCAG region, which would improve emergency response and facilitate more effective emergency evacuation.

The actual design details of land use development projects and proposed transportation projects are not known, because the projects are in the early stages of planning. However, both Caltrans and local jurisdictions have design standards for new and existing development and roadways to ensure adequate passage of emergency vehicles. Standards include specifications related to clear width, effective turning radius and turnouts, curve radii on curving road segments, maximum road grade/slope, and minimum separating distance between intersections and driveways. Transportation projects would be subject to review with regard to emergency vehicle requirements by State and/or local jurisdictions with authority over the project as well as responsible emergency service agencies; thus, ensuring projects would be designed to meet all applicable emergency design standards.

Construction activities could temporarily impair emergency access points used for emergency vehicle access. However, standard construction procedures for development of a construction management plan would address these conditions and would require provision of alternative emergency vehicle access points. Specifically, in accordance with Caltrans permitting requirements, a traffic control plan would be required that adheres to the standards set forth in the California Manual of Uniform Traffic Control Devices (Caltrans 2021). As part of these requirements, there are provisions for coordination with local emergency services, training for flagmen for emergency vehicles traveling through the work zone, temporary lane separators that have sloping sides to facilitate crossover by emergency vehicles, and vehicle storage and staging areas for emergency vehicles. The Caltrans requirements also provide for construction work during off-peak hours and flaggers and include provisions for “Detour for Bike Lanes on Roads with Closure of One Travel Direction.” Measures similar to Caltrans requirements are typically applied to local projects, such as requiring at least two points of ingress/egress to residential developments for emergency access.

In addition, while implementation of proposed 2022 RTP/SCS’s land use scenario and transportation projects could temporarily impede emergency access at project locations during construction periods, construction projects would conform to State, regional, and local regulations requiring maintenance of emergency access during construction. Based on the above analysis, the impacts of the proposed 2022 RTP/SCS on emergency vehicle access and on interference with an adopted emergency response plan or emergency evacuation plan would be less than significant.

### **Mitigation Measures**

No mitigation measures are required.

### **c. Specific Proposed 2022 RTP/SCS Project That May Result in Impacts**

The analysis within this section discusses the transportation impacts associated with the transportation improvement projects included in the proposed 2022 RTP/SCS. The projects within the proposed 2022 RTP/SCS are evaluated herein in their entirety and are intended to improve circulation rather than cause adverse impacts. However, as described above, the proposed 2022 RTP/SCS would increase baseline 2020 regional VMT by approximately 1,372,779 miles in 2046, which would be an approximately 33.5 percent increase from the baseline 2020 conditions for 2046. This effect has been found to be a significant and unavoidable impact, as described above. The KCAG model used for this analysis does not have the capability to distinguish which project or projects would specifically result in increased regional VMT. However, any number of the proposed 2022 RTP/SCS projects that expand roadway capacity or improve traffic flow and circulation could presumably increase VMT. Thus, there are no specific transportation projects that can be listed in this section related to the adverse impacts of increased regional VMT in the KCAG region.

## **4.13.4 Cumulative Impacts**

The cumulative impacts analysis area for transportation consists of the KCAG region and the five adjoining counties. Movement within, through, and beyond the KCAG region is necessary for commuters, personal travel, and goods movement. Thus, it is important to consider both the KCAG region as well as the connection with the adjoining counties.

The federal, State, and regional laws, regulations, and policies outlined in Section 4.13.2, *Regulatory Setting*, apply to surrounding counties in the same manner as they apply to projects within the KCAG region, thereby avoiding the potential for cumulative conflict between the transportation planning for the KCAG region and the surrounding counties. Therefore, the potential cumulative



impacts resulting from the implementation of the proposed 2022 RTP/SCS related to conflict with programs, plans, and ordinances or policies addressing the circulation system would be less than significant, and the proposed 2022 RTP/SCS contribution would not be cumulatively considerable.

Development in the cumulative impact analysis area would result in significant and unavoidable increases in regional VMT as well as daily VMT per capita from baseline (2020) conditions, partially due to commuters travelling to and from employment in the adjoining counties. However, the proposed 2022 RTP/SCS is designed to maintain and foster the balance between jobs and housing within the KCAG region and provides a strategy to allocate growth in such a way as to achieve a more balanced jobs/housing ratio and to optimize transportation investments that support those land uses.

As discussed above, implementation of the 2022 RTP/SCS would increase daily VMT in 2046 compared to the baseline 2015 conditions. While the majority of the VMT would be expected to remain within the KCAG region, some portion of the VMT would inevitably extend to areas within the adjoining counties. The most reasonable assumption is that VMT to adjoining counties would be concentrated to the most heavily traveled roadways in the counties with the highest relative employment, such as I-5 and Fresno and Kern counties. The increased VMT in adjoining county areas would be in addition to the VMT generated from the increased population growth of such counties into the future. Per capita VMT in the cumulative impact area would be unlikely to reach 13 percent below the baseline VMT per capita by 2046 due to increased VMT in the region, both with and without implementation of the proposed 2022 RTP/SCS. The implementation of project-level VMT-reducing measures, such as mixed uses, may not be feasible and cannot be guaranteed on a project-by-project basis. Regional VMT reduction programs, such as VMT banks, may also not be feasible as there are no procedures or policies in place to establish such programs. Thus, cumulative impacts on VMT would be significant and the proposed 2022 RTP/SCS contribution to cumulative VMT impacts would be cumulatively considerable, and this contribution would remain cumulatively considerable post-mitigation.

Some types of transportation impacts are related to site- and project-specific characteristics and conditions and would not be significantly affected by other development outside of the KCAG region. As discussed in Impacts TRA-3 and TRA-4, there are existing federal, State, and local regulations that govern transportation hazards and emergency access associated with development and infrastructure projects. Regulations and oversight, as outlined in the impact analysis above, would effectively reduce the potential for individual projects to create a transportation hazards or emergency access impact within the KCAG region and surrounding counties. Thus, cumulative impacts related to the transportation hazards and emergency access would not be significant and the proposed 2022 RTP/SCS contribution would not be cumulatively considerable.

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## 4.14 Tribal Cultural Resources

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This section evaluates potential impacts to tribal cultural resources in the KCAG region from development facilitated by the proposed 2022 RTP/SCS.

### 4.14.1 Setting

#### **a. Ethnographic Context**

The KCAG region is located in the San Joaquin Valley with the Coast Ranges along the western edge; the Sierra Nevada Mountain range in the east; the Tehachapi's to the south; and the Sacramento Valley to the north. The area was primarily inhabited by Southern Valley Yokuts.

#### **Southern Valley Yokuts**

The project area is located at the very northern end of the San Joaquin Valley, an area historically occupied by the Penutian-speaking Yokuts (Kroeber 1925, Wallace 1978). Three geographical divisions of the Yokuts are the Northern Valley, Southern Valley, and Foothill Yokuts. The distinction between the three groups is primarily based on language dialect (Mithun 2001).

The Yokuts established large permanent village settlements, or closely associated smaller settlements, such as the Tulamniu village, located near the City of Taft in Kern County. Residential structures were most often of two types: single-family dwellings and larger communal residences that housed ten families or more. Villages frequently included mat-covered granaries and a sweathouse (Mithun 2001; Sutton et al. 2016).

The basic economic unit among the Yokuts was the nuclear family. The nuclear family was linked to totemic lineages based on patrilineal descent. Totem symbols were passed from father to offspring. Families that shared the same totem formed an exogamous lineage. Totems were associated with one of two moieties. This moiety division played a role during ceremonies and other social events (Wallace 1978).

Yokuts were split into self-governing local groups that included several villages. Each group had a chief who directed ceremonies, mediated disputes, handled punishment of those doing wrong, hosted visitors, and provided aid to the impoverished. In certain cases, settlements had two chiefs, one for each moiety. Other political positions included the chief's messenger and the spokesman (Wallace 1978).

Shamans were an important part of Yokut village life. A Yokut Shaman gained power through a dream or vision. If, after this vision, the man accepted the role as shaman, he would pray, fast, and acquire talismans to aid him in his future work. Shamans had the ability to heal the sick and served a primary role in religious life (Wallace 1978).

Yokuts subsistence strategy was based on a mixed economy focused on fishing, collecting, and hunting small game. Fishermen employed tule rafts and caught fish with nets, spears, basket traps, and bow and arrow. They often gathered mussels and hunted turtles in lakes, rivers, and streams. Wild seeds and roots contributed a large portion to the Yokuts diet. Tule roots were gathered, dried, and pounded into a flour which was prepared as a mush. Tule seeds and grass and flowering herb seeds were prepared in the same way. Leaves and stems of certain plants, such as clover and fiddle-neck, were also collected. Acorns, a staple of most California Native Americans, were not readily available in the ethnographic territory of the Yokuts. Some Yokuts tribes traded for acorns with

neighboring groups, such as the Salinan and Chumash to the west, the Foothill Yokuts to the east, and the Kawaiisu and Kitanemuk to the southeast (Kroeber 1925). Waterfowl was frequently hunted with snares, nets, and bow and arrow. Land mammals and birds contributed a smaller part of the Yokuts diet. Small game was occasionally taken in snares or traps or shot with bows and arrows (Wallace 1978; Sutton et al. 2016).

Yokuts technology depended primarily on tule. Stems of the plant served as the raw material for baskets, cradles, boats, housing, and many other items. Manos and metate were used to process food and animal hides (Sutton et al. 2016). Tools such as knives, projectile points, and scraping tools were made from imported lithic materials because stone was not readily available in the Central Valley. Some tools, such as bead drills, could be made from local obsidian (Sutton et al. 2016). Marine shells secured through trade with coastal groups were used as shell money and personal adornment items, such as Olivella beads (Sutton et al. 2016; Wallace 1978).

## **b. Tribal Cultural Resources**

Tribal cultural resources that could be present within the KCAG region include but are not limited to Native American burial sites, village or occupation sites, traditional resource gathering locations and natural landforms such as mountain peaks, ridge tops, or rivers. Such resources are present throughout the KCAG region, including known and documented sites as well as undocumented sites. Tribal cultural resources are likely to be present near areas of prior Native American occupation and activity, which includes areas both within and outside of areas of current development. Surficial archaeological deposits that are tribal cultural resources are more likely to be heavily disturbed within urban areas and more intact in rural settings; however, this does not preclude the presence of buried tribal cultural resources that may be significant in urban settings. For example, a tribal cultural resource that has been listed as a California Historical Landmark, Tulamni Indian Site Monument, is located near the City of Taft.

## **4.14.2 Regulatory Setting**

### **a. Federal Laws, Regulations, and Policies**

#### **Archaeological Resources Protection Act (ARPA)**

This regulation was enacted to protect archaeological resources and sites that are on public lands and Tribal lands, to foster increased cooperation and exchange of information between government representatives, the professional archaeological community, and private individuals. Section 4 of the statute and Sections 16.5-16.12 of the uniform regulations describe the requirements that must be met before federal authorities can issue a permit to excavate or remove any archaeological resource on federal or Tribal lands. The curation requirements of artifacts, other materials excavated or removed, and the records related to the artifacts and materials are described in Section 5 of the ARPA. This section also authorizes the Secretary of the Interior to issue regulations describing in more detail the requirements regarding these collections.

#### **American Indian Religious Freedom Act**

The American Indian Religious Freedom Act of 1978 (AIRFA) (42 U.S. Code Section 1996) pledges to protect and preserve the traditional religious rights of American Indians, Aleuts, Eskimos, and Native Hawaiians. It establishes a national policy that traditional Native American practices and beliefs, sites (and right of access to those sites), and the use of sacred objects shall be protected and

preserved. If a place of religious importance to American Indians could be affected by a federal undertaking, AIRFA promotes consultation with Indian religious practitioners, which could be coordinated with Section 106 consultation. Amendments to Section 106 of the National Historic Preservation Act (NHPA) in 1992 strengthened the interface between AIRFA and the NHPA by clarifying the following: (1) properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization could be determined to be eligible for inclusion in the NRHP; and (2) in carrying out its responsibilities under Section 106, a federal agency shall consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to properties described under (1).

## **Protection of Archaeological Resources**

The Archeological Resources Protection Act of 1979 (ARPA) (43 CFR Section 7) establishes uniform definitions, standards, and procedures to be followed by all federal land managers in providing protection for archaeological resources located on public lands and Native American lands. Under ARPA, additional requirements could apply to agency action if federal or Indian lands are involved. ARPA (1) prohibits unauthorized excavation on federal and Indian lands, (2) establishes standards for permissible excavation, (3) prescribes civil and criminal penalties, (4) requires agencies to identify archeological sites, and (5) encourages cooperation between federal agencies and private individuals.

## **Native American Graves Protection and Repatriation Act of 1990**

The intent of the Native American Graves Protection and Repatriation Act of 1990 (25 U.S. Code Section 3001) is to identify Native American affiliation or lineal descent and ensure the rightful disposition, or repatriation, of Native American human remains, funerary objects, sacred objects, and items of cultural patrimony that are in federal possession or control. The regulations implementing the requirements of Native American Graves Protection and Repatriation Act relating to the inadvertent discovery of human remains and objects of cultural patrimony of Native American origin on federal or Tribal lands are described in 43 CFR Section 10.4.

## **b. State Laws, Regulations, and Policies**

### **Assembly Bill 52**

The California Assembly Bill 52 of 2014 (AB 52) expanded CEQA by defining a new resource category, “tribal cultural resources.” AB 52 establishes that “a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment” (Public Resources Code [PRC] Section 21084.2). AB 52 further states when feasible, the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource (PRC Section 21084.3). PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe,” and meets either of the following criteria:

- a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k).
- b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section

5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified or adopted. AB 52 requires that lead agencies “begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project.” Native American tribes to be included in the process are those that have requested notice of projects proposed in the jurisdiction of the lead agency.

AB 52 (PRC Section 21084.3(b)) describes mitigation measures that may avoid or minimize the significant adverse impacts to TCRs. Examples include:

1. Avoiding and preserving the resources in place, including, but not limited to, planning and constructing to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria
2. Treating the resource with culturally appropriate dignity, taking into account the Tribal cultural values and meaning of the resource, including, but not limited to, the following:
  - a. protecting the cultural character and integrity of the resource
  - b. protecting the traditional use of the resource
  - c. protecting the confidentiality of the resource
3. Establishing permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places
4. Protecting the resource

### **c. Regional and Local Laws, Regulations, and Policies**

#### **Kings County General Plan**

The Kings County General Plan 2035, adopted in 2010, includes goals and policies relating to tribal cultural resources. As presented in the Resource Conservation Element, the objectives and policies pertaining to Tribal cultural resources include (Kings County 2010):

#### **RC OBJECTIVE 1.1**

Promote the rehabilitation or adaptation to new uses of historic sites and structures.

**RC Policy 1.1.3:** Encourage the protection of cultural and archaeological sites with potential for placement on the National Register of Historic Places and/or inclusion in the California Inventory of Historic Resources

#### **RC OBJECTIVE 1.2**

Identify potential archaeological and historical resources and, where appropriate, protect such resources.

- RC Policy 1.2.1:** Participate in and support efforts to identify significant cultural and archaeological resources and protect those resources in accordance with Public Resources Code 5097.9 and 5097.993.
- RC Policy 1.2.2:** Continue to solicit input from local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American Activity and/or to sites of cultural importance.
- RC Policy 1.2.4:** The County will respectfully comply with Government Code §65352.3 (SB18) by conducting formal consultations with tribes as identified by the Native American Heritage Commission on all general plan and specific plan amendments.
- RC Policy 1.2.5:** The County will respectfully comply with Government Code §6254.(r) and 6254.10 by protecting confidential information concerning Native American cultural resources. For example, adopting internal procedures such as keeping confidential archaeological reports away from public view or discussion in public meetings.
- RC Policy 1.2.6:** The County shall work in good faith with the Santa Rosa Rancheria Tachi Yokut Tribe (“Tribe”), the developer and other parties if the Tribe requests return of certain Native American artifacts from private development projects (e.g., for interpretive or educational value). The developer is expected to act in good faith when considering the Tribe’s request for artifacts. Artifacts not desired by the Tribe shall be placed in a qualified repository as established by the California State Historical Resources Commission (see Guidelines for the Curation of Archaeological Collections, May 1993). If no facility is available, then all artifacts shall be donated to the Tribe.
- RC Policy 1.2.7:** The County shall work with the developer of any “gated community” (i.e. not open to the public), to ensure that Native Americans are allowed future access, under reasonable conditions, to view/visit known sites within the “gated community.” If a village site is identified within a gated community project, the developer shall be conditioned to allow future access by Native Americans to view/visit that village site.

## **City of Avenal General Plan**

The City of Avenal General Plan 2035, adopted in 2018, includes goals and policies relating to Tribal cultural resources. As presented in the Conservation, Natural Resources, and Recreation Element, the goals and policies pertaining to Tribal cultural resources include (City of Avenal 2018):

**Goal NR 5** – Preserve and protect Avenal’s historic and cultural resources.

*Policy NR-5.2.* - Require construction to stop immediately if cultural resources, including tribal, archaeological, or paleontological resources, human bone or bone of unknown origin are uncovered during grading or other on-site excavation activities, until appropriate mitigation is implemented, including contacting the County Coroner and, if appropriate, the Native American Heritage Commission.

*Policy NR-5.3.* - Prohibit project personnel or others from collecting or retaining any artifacts found at a development project site.

*Policy NR-5.4.* - Continue to consult with tribes as required by California Government Code Section 65352.3 to accommodate tribal concerns about new development or policy changes.

*Policy NR-5.5.* - Protect tribal cultural resources in Avenal, including natural land formations, sacred sites, culturally significant plants and habitats, and evidence of human habitation before European settlement.

## **City of Hanford General Plan**

The City of Hanford 2035 General Plan, adopted in 2017, includes goals and policies relating to tribal cultural resources. As presented in the Open Space, Conservation, & Recreation Element, the goals and policies pertaining to Tribal cultural resources include (City of Hanford 2017):

### **Goal O6 - Protected sites of archaeological and paleontological significance.**

*Policy O46* - Archaeological Site Consultation Consult with appropriate Native American associations about potential archaeological sites in the beginning stages of the development review process.

*Policy O49* - Cultural Site Discovery Halt construction at a development site if cultural resources are encountered unexpectedly during construction.

There are no applicable goals, policies, or objectives for tribal cultural resources in the City of Corcoran or City of Lemoore General Plans.

## **4.14.3 Impact Analysis**

### **a. Methodology and Significance Thresholds**

In accordance with the requirements of AB 52, KCAG conducted AB 52 consultation as the lead agency for implementation of the 2022 RTP/SCS. KCAG sent letters on October 19, 2021, to five contacts of the Santa Rosa Rancheria Tachi Yokut Tribe, who had previously requested formal notice to consult. The Santa Rosa Rancheria Tachi Yokut Tribe responded on November 9, 2021, requesting the current mitigation measures and any biological reports KCAG may have. KCAG responded on December 7, 2021, with the sample mitigation measures and biological reports. No further response has been received and the consultation window is closed.

Appendix G of the *CEQA Guidelines* identifies the following criteria for determining whether a project's impacts would have a significant impact to Tribal cultural resources:

1. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
  - a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
  - b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of



Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.

## **b. Project Impacts and Mitigation Measures**

The following section discusses potential impacts and mitigation measures that may be associated with projects contained within the 2022 RTP/SCS. Due to the programmatic nature of the 2022 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2022 RTP/SCS could result in the impacts as described in the following section.

<b>Threshold 1:</b>	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: <ul style="list-style-type: none"><li>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</li><li>b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.</li></ul>
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### **Impact TCR-1      TRANSPORTATION PROJECTS AND THE LAND USE SCENARIO ENVISIONED IN THE 2022 RTP/SCS HAS THE POTENTIAL TO IMPACT TRIBAL CULTURAL RESOURCES. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

As stated above, AB 52 consultation did not result in identification of any tribal cultural resources. However, it is possible that Native American burial sites, village or occupation sites, traditional resource gathering locations, natural landforms of importance to the local Tribes, or other possible tribal cultural resources could exist in the KCAG region. Therefore, tribal cultural resources could be encountered during implementation of the transportation improvement projects included in the 2022 RTP/SCS and the land use scenario envisioned by the 2022 RTP/SCS. Effects on tribal cultural resources are highly dependent on the individual project site conditions and the characteristics of a project. Impacts to tribal cultural resources may include damage or destruction of the resources. Adherence to the requirements of AB 52 encourages tribal consultation with local Native American Tribes and requires the identification of project-specific impacts on tribal cultural resources and implementation of appropriate project-specific mitigation measures. If the transportation project sponsor agencies determine that a specific transportation or land use project could cause a substantial adverse change in the significance of a tribal cultural resource, the impact would be significant.

## **Mitigation Measures**

For transportation projects under their jurisdiction, KCAG shall implement, and transportation project sponsor agencies can and should implement Mitigation Measure TCR-1 below and Mitigation Measure CR-2(b) where applicable for projects implementing the proposed 2022 RTP/SCS with the potential to impact tribal cultural resources. Cities in the KCAG region and the county can and should implement these mitigation measures where relevant to land use projects implementing the 2022 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

### *TCR-1(a) Identified Tribal Cultural Resources Impact Minimization*

Transportation project sponsor agencies shall comply with AB 52, which may require formal Tribal consultation. If the implementing agency determines that a project may cause a substantial adverse change to a Tribal cultural resource, they shall implement mitigation measures identified in the consultation process required under Public Resources Code (PRC) Section 21080.3.2, or shall implement the following measures where feasible to avoid or minimize the project-specific significant adverse impacts:

- Avoidance and preservation of the resources in place, including, but not limited to: designing and building the project to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space to incorporate the resources with culturally appropriate protection and management criteria.
- Treating the resource with culturally appropriate dignity, taking into account the Tribal cultural values and meaning of the resource, including, but not limited to, the following:
  - Protecting the cultural character and integrity of the resource
  - Protecting the traditional use of the resource
  - Protecting the confidentiality of the resource
- Establishment of permanent conservation easements or other culturally appropriate property management criteria for the purposes of preserving or utilizing the resources or places.
- Native American monitoring by the appropriate tribe during soil disturbance for all projects in areas identified as sensitive for potential Tribal cultural resources and/or in the vicinity (within 100 feet) of known tribal cultural resources.

## **IMPLEMENTING AGENCIES AND TIMING**

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

## **Significance After Mitigation**

Mitigation Measure TCR-1(a) would require implementation of mitigation identified through Tribal consultation or other feasible mitigation to avoid impacts to identified Tribal cultural resources. This measure would protect the resource's character, traditional use, and confidentiality. Mitigation Measure CR-2(b) would ensure that impacts to unanticipated tribal cultural resources would be mitigated in consultation with Tribal representatives. Implementation of the above measures would

reduce impacts to Tribal cultural resources. However, it cannot be guaranteed that all future project-level impacts can be mitigated and as such, impacts would be significant and unavoidable.

### **c. Specific RTP/SCS Projects that May Result in Impacts**

All 2022 RTP/SCS projects that require construction may result in impacts to Tribal cultural resources and, therefore, are not specifically identified in table format below. All 2022 RTP/SCS transportation projects are referenced in Chapter 2, *Project Description*. Additional analyses and AB 52 consultation with local Tribes would be needed as the individual projects are implemented to determine the project-specific impact. The mitigation measures discussed above and potentially others requested by Tribal representatives on a project-by-project basis would apply to these specific projects.

#### **4.14.4 Cumulative Impacts**

The cumulative impact analysis area for Tribal cultural resources consists of the KCAG region and adjoining counties. Information regarding these adjoining counties can be found in Section 3.3.3.1, *Environmental Setting*. Tribal cultural resources are regionally specific and determined by the local Tribes. However, development in the cumulative impact analysis area would increasingly extend into previously undeveloped areas. The KCAG region would continue to develop under the SCS and could result in expansion of urban areas into undeveloped land and that development could encourage development in adjoining counties that have the potential to impact Tribal cultural resources. The increase in growth in previously undisturbed areas would contribute to regional impacts on Tribal cultural resources. Cumulative impacts would be significant.

Development in the KCAG area would increase under the 2022 RTP/SCS by increasing mobility and growth. The increase in growth in previously undisturbed areas contributes to regional impacts on Tribal cultural resources. If there may be tribal cultural resources at the location of a project site, Tribal consultation in accordance with AB 52 would help ensure protection of Tribal cultural resources. However, Tribal territory often crosses the boundaries of multiple jurisdictions within and outside of the KCAG region, and there could be several minor impacts to Tribal cultural resources that together would result in a significant cumulative impact. The cumulative impact would be significant, and the overall contribution of the 2022 RTP/SCS to significant cumulative Tribal cultural resources impacts, despite implementation of Mitigation Measure TCR-1(a) and TCR-1(b), would be cumulatively considerable.

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## 4.15 Wildfire

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This section evaluates impacts related to wildfire from implementation of the proposed 2022 RTP/SCS.

### 4.15.1 Setting

In California, the responsibility for wildfire prevention and suppression is shared by federal, State, and local agencies in California. Federal agencies are responsible for federal lands in Federal Responsibility Areas. California has determined that some non-federal lands in unincorporated areas with watershed value are of statewide interest and have classified those lands as State Responsibility Areas (SRAs) managed by the California Department of Forestry and Fire Protection (CAL FIRE). All incorporated areas and other unincorporated lands are classified as Local Responsibility Areas (LRAs).

#### **a. Wildfire Behavior and Controlling Factors**

Human influence on wildfire includes direct influences, such as the ignition and suppression of fires, and indirect influence through climate change, the alteration of native vegetation, fire suppression, and development patterns. Human-induced wildfire ignitions can change fire regime characteristics in two ways: (1) changing the distribution and density of ignitions and (2) changing the seasonality of burning activity. Human-induced ignition sources include escapes from debris and brush-clearing fires, electrical equipment malfunctions, campfires, smoking, fire play (e.g., fireworks), vehicles, and arson. Consequently, areas near human development more frequently experience fires than very remote or urban areas. Figure 4.15-1 displays the Fire Hazard Severity Zones (FHSZ) in the KCAG region.

Once a fire is started, the spread and behavior of a fire become a function of fuel characteristics, terrain, and weather conditions. People have intervened deliberately and dramatically in the natural fire regime through fire suppression and, more recently, actions that affect fuel connectivity. Historically, fire suppression was used to prevent and limit wildfires. Over time, this land management practice (combined with forest regrowth after extensive logging in the late 19th century) has led to a buildup of forest fuels and an increase in the occurrence and threat of large, severe fires. Contemporary fire management practices include fuel management activities that are intended to reduce the intensity and severity of wildfires. Reducing fuels through mechanical treatments and prescribed fire have been found to be effective at reducing fire frequency, fire severity, and annual area burned when applied at the landscape scale over an extended period of time.

Wildfire activity is closely related to temperature and drought conditions, and in recent decades, increasing drought frequency and warming temperatures have resulted in increased fire activity and the largest, most destructive, and deadliest wildfires in California history. Climate change will continue to produce conditions that facilitate a longer fire season, which, when coupled with human-caused changes in the seasonality of ignition sources, will produce more, longer, and bigger fires during more times of the year. According to California's Fourth Climate Change Assessment, Statewide Summary Report (OPR 2018), if greenhouse gas emissions continue to rise, the frequency of extreme wildfires burning over 25,000 acres could increase by 50 percent by 2100, and the average area burned Statewide could increase by 77 percent by the end of the century.

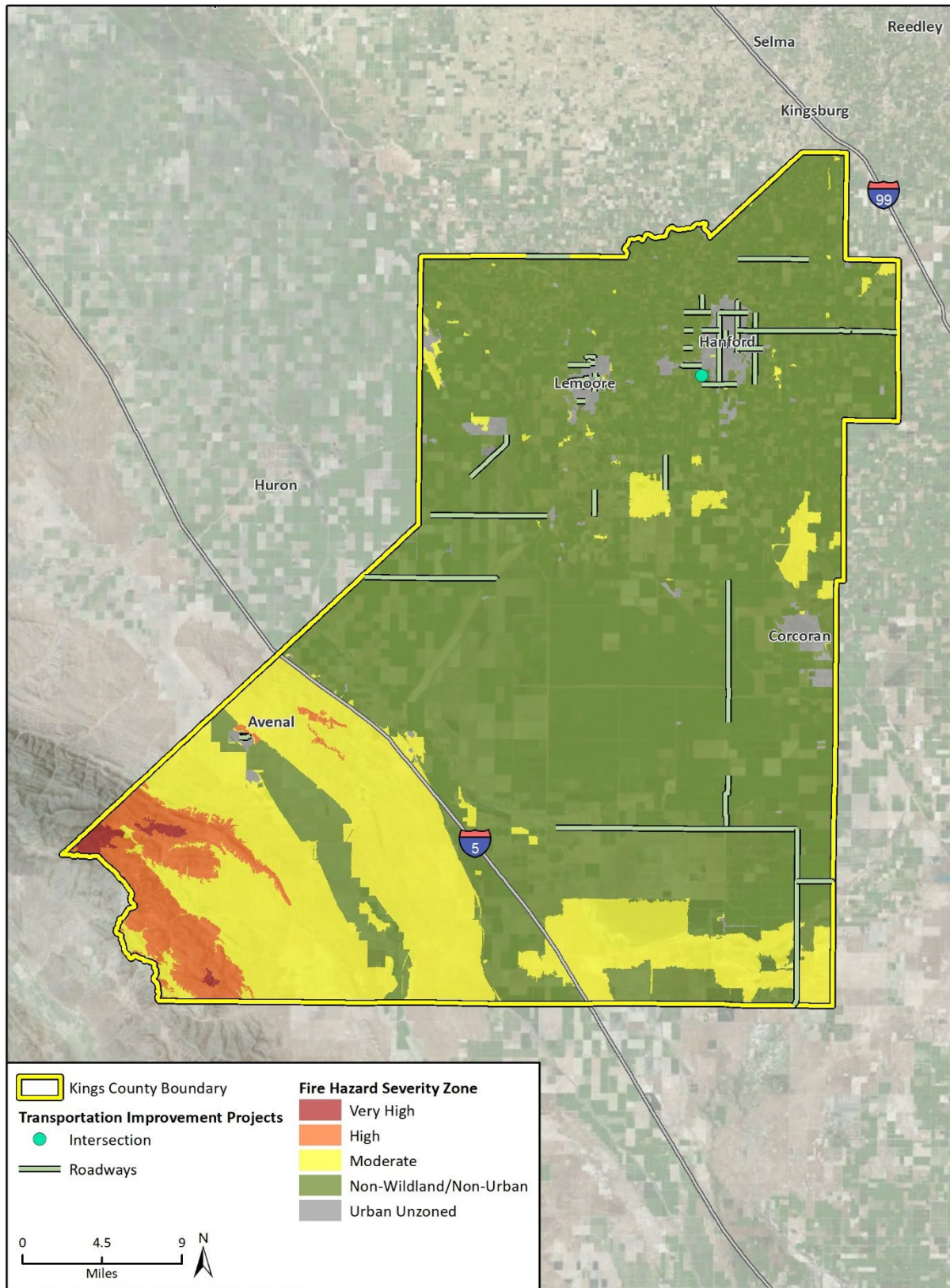
## **b. California Wildfire Hazards**

While all of California is subject to some degree of wildfire hazard, there are specific features that make certain areas more hazardous. CAL FIRE is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors (Public Resources Code [PRC] 4201-4204 and California Government Code 51175-89). Factors that increase an area's susceptibility to fire hazards include slope, vegetation type, and condition and atmospheric conditions. CAL FIRE has identified two types of wildfire risk areas: 1) Wildland Areas That May Contain Substantial Forest Fire Risks and Hazards and 2) Very High Fire Hazard Severity Zones. The first hazard area corresponds with those lands designated as SRAs, as described above, and the second hazard area corresponds with areas designated as LRAs. Each risk area carries with it code requirements to reduce the potential risk of wildfires. Under state regulations, areas within very high fire hazard risk zones must comply with specific building and vegetation management requirements intended to reduce property damage and loss of life within these areas.

Based on the Fire Hazard Severity Zone Map for Kings County, SRA's moderate hazard zones are present in the southwestern portions of the County and along Highway 33. High to Very High Fire Hazard Severity Zones are present in SRAs in the southwestern portions of the County (CAL FIRE 2007b). Moderate and High Fire Hazard Severity Zones have been mapped in LRAs in the County (CAL FIRE 2007a). The City of Avenal is located in a LRA and is the only community in the County listed as a community at risk by CAL FIRE. LRAs in the County are generally located in the southern portion of the County and along portions of the I-5 corridor, as well as scattered in the northern portion of the County. The locations of the 2022 RTP/SCS projects and mapped Fire Hazard Severity Zones are shown in Figure 4.15-1.

Urban fires are generally caused by humans that can be mitigated through proper building code requirements, fire flow minimums and zoning or subdivision ordinance requirements. Wildfire behavior is based on elevation, slope, and exposure. Because most of Kings County is essentially flat and sloping slightly towards topographic low points in the Tulare Lake Basin, fire hazard in much of the County is classified as moderate. However, elevations in the southwestern portion of the County are varied. The fire hazard in the steeply sloped southwestern county areas is classified as very high. Development that has spread into less densely populated, often hilly areas, has increased the number of people living in heavily vegetated areas that are prone to wildfire and more difficult to battle due to the hilly terrain. The area where wildlands meet urban development is referred to as the wildland-urban interface (WUI), where urban wildfires occur. Major property and losses of life can result from a fire in the wildlife-urban interface. However, this part of the County is mostly isolated and contains no urban settlements, hazards to life and property are considered minimal.

**Figure 4.15-1 KCAG Region Fire Hazards Severity Zone Map**



Imagery provided by Microsoft Bing and its licensors © 2021.

Additional data provided by the Department of Forestry and Fire Protection and CAL FIRE 2007/2008.

Fig. 4.15-1 Kings County Fire Hazard Severity Zone Map

## 4.15.2 Regulatory Setting

### a. Federal Laws, Regulations, and Policies

#### International Fire Code

The International Fire Code (IFC), created by the International Code Council (IFCC), is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The IFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The IFC and the International Building Code use a hazard classification system to determine what protective measures are required for fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the IFC employs a permit system based on hazard classification. The IFC is updated every three years and is the basis for the California Fire Code (CFC) (also updated triennially). Local jurisdictions, including the KCAG region cities, then adopt the CFC, in some cases with local amendments (IFCC 2021).

#### Federal Disaster Mitigation Act

The Disaster Mitigation Act of 2000 provided a new set of mitigation plan requirements that encourage state and local jurisdictions to coordinate disaster mitigation planning and implementation. States are encouraged to complete a “Standard” or an “Enhanced” Natural Mitigation Plan. “Enhanced” plans demonstrate increased coordination of mitigation activities at the state level and, if completed and approved, increase the amount of funding through the Hazard Mitigation Grant Program. The State of California Multi-Hazard Mitigation Plan (SHMP) complies with this act.

#### National Fire Plan

The U.S. Department of the Interior’s (DOI) National Fire Plan is intended to ensure an appropriate federal response to severe wildland fires, reduce fire impacts on rural communities, and ensure sufficient firefighting capacity in the future. The Rural Fire Assistance program is funded to enhance the fire protection capabilities of rural fire districts and safe and effective fire suppression in the wildland/urban interface. The program promotes close coordination among local, state, tribal, and federal firefighting resources by conducting training, equipment purchase, and prevention activities on a cost-shared basis (DOI 2000).

### b. State Laws, Regulations, and Policies

#### 2019 Strategic Plan for California

The 2019 Strategic Plan prepared by CAL FIRE and the California Natural Resources Agency lays out central goals for reducing and preventing the impacts of fire in the State. The goals are meant to establish, through local, State, federal, and private partnerships, a natural environment that is more resilient and human-made assets that are more resistant to the occurrence and effects of wildland fire (CAL FIRE 2019).

In addition to the 2019 Strategic Plan for California, individual CAL FIRE units develop fire plans, which are major strategic documents that establish a set of tools for each CAL FIRE unit for its local



area. Updated annually, unit fire plans identify wildfire protection areas, initial attack success, assets and infrastructure at risk, pre-fire management strategies, and accountability within their unit's geographical boundaries. The unit fire plan identifies strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work locally. The plans include contributions from local collaborators and stakeholders and are aligned with other plans for the area.

### **California Building Code (2019)**

Chapter 7A of the California Building Code (California Code of Regulations, Title 24, Part 2) includes specific requirements related to exterior wildfire exposure. These requirements establish minimum standards to protect buildings located in Fire Hazard Severity Zone within SRAs and WUI Fire Areas. This code includes provisions for ignition resistant construction standards for new buildings.

### **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 and occupancy, location, maintenance, removal, and demolition of buildings or structures or any appurtenances connected or attached to such building structures throughout California.

### **California Emergency Services Act**

The California Governor's Office of Emergency Services (Cal OES) is responsible for overseeing and coordinating emergency preparedness, response, recovery, and homeland security activities within the California. Section 8687.7 of the California Disaster Assistance Act required the development of a Standard Emergency Management System (SEMS) program, for managing multiagency and multijurisdictional responses to emergencies in California. The Cal OES Emergency Management Systems Unit is a multi-agency group charged with methodical review, evaluation, and approval of needed improvements to SEMS. State agencies are required to use SEMS and local government entities must use SEMS in order to be eligible for any reimbursement of response-related costs under the State's disaster assistance programs.

Cal OES serves as the lead State agency for emergency management and coordinates the State response to major emergencies in support of local government. SEMS provides the mechanism by which local governments request assistance from Cal OES, and Cal OES maintains oversight of the State's mutual aid system.

### **California Multi-Hazard Mitigation Plan**

The California Office of Emergency Services prepares the State Hazard Mitigation Plan (SHMP), which identifies hazard risks and includes a vulnerability analysis and a hazard mitigation strategy (Cal OES 2018). The SHMP is required under the Disaster Mitigation Act of 2000 for the State to receive federal funding. The Disaster Mitigation Act of 2000 requires a State mitigation plan as a condition of disaster assistance.

The SHMP represents the state's primary hazard mitigation guidance document - providing an updated analysis of the state's historical and current hazards, hazard mitigation goals and

objectives, and hazard mitigation strategies and actions. The plan represents the state's overall commitment to supporting a comprehensive mitigation strategy to reduce or eliminate potential risks and impacts of disasters in order to promote faster recovery after disasters and, overall, a more resilient state. State Hazard Mitigation Plans are required to meet the Elements outlined in FEMA's State Mitigation Plan Review Guide (revised March 2015, effective March 2016).

Cal OES is responsible for the development and maintenance of the State's plan for hazard mitigation. The State's multi-hazard mitigation plan was last approved by the Federal Emergency Management Agency (FEMA) as an Enhanced State Mitigation Plan in 2018. The plan is designed to reduce the effects of disasters caused by natural, technological, accidental, and adversarial/human-caused hazards. The SHMP sets the mitigation priorities, strategies, and actions for the state. The plan also describes how risk assessment and mitigation strategy information is coordinated and linked from local mitigation plans into the SHMP and provides a resource for local planners of risk information that may affect their planning area. The State of California is required to review and revise its mitigation plan and resubmit for FEMA approval at least every five years to ensure continued funding eligibility for certain federal grant programs.

### **Senate Bill 1241 (Kehoe) of 2012**

Senate Bill 1241 (Chapter 311, Statutes of 2012) requires cities and counties to address fire risk in SRAs and VHFHSZs in the safety element of their general plans. It also requires cities and counties to make certain findings regarding available fire protection and suppression services before approving a tentative subdivision map or parcel map.

### **Assembly Bill 3074 (Friedman) of 2020**

Assembly Bill 3074 (Chapter 259, Statutes of 2020) imposes additional fuel reduction requirements on a person who owns, leases, controls, operates, maintains or builds an occupied dwelling or structure in, upon, or adjoining wild lands within a very high fire hazard severity zone.

### **SRA Fire Safe Regulations**

The SRA Fire Safe Regulations CCR Title 14, Division 1.5, Section 1270 et seq. establishes CAL FIRE's basic wildland fire protection standards for new development and is applicable in all SRAs in California—areas where CAL FIRE is responsible for wildfire protection. Title 14 establishes minimum standards required for fire protection for emergency access, fuel modification (including a defensible space of 100 feet around structures), setback to property line, signage, and water supply. To comply with the standards, proposed development must include road and street networks that provide safe access for emergency wildland fire equipment and civilian evacuation concurrently. Newly constructed buildings and roads must post clearly visible signs, including names and contact numbers visible from the roadway. Emergency water for wildfire protection must be available and accessible in specified quantities. Finally, to reduce the intensity of a wildfire, strategic siting of fuel modification and greenbelts must meet specific requirements.

## **c. Local Laws, Regulations, and Policies**

### **Kings County General Plan**

The Kings County Health and Safety Element contains goals and policies with the specific intention of reducing or eliminating the long-term risk to people and property from natural or man-made hazards. It was adopted in January of 2010 and demonstrates the County's compliance with fire

prevention and protection requirements outlined in State law (Kings County 2010). The following goals, objectives and policies from the Health and Safety element pertain to wildfire from the County's General Plan:

### **HS OBJECTIVE A1.3**

Limit growth and development in hazard areas to minimize new areas susceptible to higher risk of natural hazards.

**HS Policy A1.3.1:** Implement natural hazards review criteria for new development that is based upon information provided in the Natural Hazards Section of the Health and Safety Element to improve long term loss prevention.

### **HS OBJECTIVE A1.4**

Maintain County building and construction standards and regulations to remain current with State and Federal requirements that serve to protect residents from natural hazards

**HS Policy A1.4.1:** Implement the current California Building Codes and any subsequent amendments as contained within California Code of Regulations Title 24 to improve disaster resistance of future buildings.

### **HS OBJECTIVE C2.2**

Provide quality fire protection services throughout the County by the Kings County Fire Department, and Fire safety preventative measures to prevent unnecessary exposure of people and property to fire hazards in both County LRAs and SRAs.

**HS Policy C2.2.1:** Community planning efforts should evaluate the projected need for Fire Department personnel and equipment and necessary funding support to maintain current levels of service as community growth occurs.

**HS Policy C2.2.2:** Development proposals and code revisions shall be referred to the County Fire Department for review and comment.

**HS Policy C2.2.3:** Use the 1997 Uniform Code for the abatement of Dangerous Buildings. All new structures to be occupied shall be built to current Fire Code Standards.

**HS Policy C2.2.4:** Review development proposals according to CalFire's "Fire Hazard Severity Zone Maps" to determine whether a site is located within a Very High Fire Hazard Severity Zone and subject to WUI Fire Area Building Standards and defensible space requirements as adopted under Senate Bill 1595 and effective January 1, 2009.

**HS Policy C2.2.5:** Forward for review and comment all proposed structures within the SRA to the California Department of Forestry and Fire Protection within all SRAs.

## **City of Avenal General Plan**

The Avenal General Plan Safety Element analyzes conditions in the City and surrounding area that may be hazardous to those who live and work there, such as flood inundation, fire, and hazardous materials (Avenal 2018). The Safety Element contains information on Wildfire Hazard Severity Zones and Historic Fires and Fire Responsibility Areas within the City.

### City of Corcoran General Plan

The Corcoran General Plan Safety Element analyzes conditions in the City and surrounding area that may be hazardous to those who live and work there, such as flood inundation, fire, and hazardous materials. The General Plan includes the following policies related to wildfire:

- Policy 4.4:** The City may coordinate fire protection services with Kings County and neighboring communities, including the maintenance of mutual aid and agreements with Tulare County, the Cities of Hanford and Lemoore and the California State Prison – Corcoran.
- Policy 4.12:** The City will encourage installation of fire safety devices in all residences and require such installation at the time of original construction, remodeling or expansion.
- Policy 4.14:** The City will encourage the community to become involved in promoting state and federal fire protection programs in school and civic functions.

### City of Hanford General Plan

Hanford’s General Plan Public Facilities and Services and Health and Safety Element of the identifies public health and property risks and seeks to improve living conditions to foster the physical health and well-being of Hanford’s residents. The Health and Safety Element outlines proactive disaster mitigation planning at the City level and aims to reduce the effects of a disaster by increasing response times, organizing resources, protecting critical community facilities, reducing liability exposure, and minimizing overall community impacts and disruption. The General Plan includes the following policies related to wildfire:

- Policy P50:** Prepare and periodically update a Fire Master Plan to plan for new growth identified in the land use element
- Policy P61:** Emergency Preparedness: Continue to upgrade preparedness strategies and techniques so as to be prepared when natural or manmade disaster occurs.
- Policy P62:** Fire Protection Education Programs: Continue to provide public education programs to raise awareness of potential fire and safety threats.
- Policy H1:** Kings County Multi-Jurisdictional Hazard Mitigation Plan: Integrate the mitigation measures of the Kings County Multi-jurisdictional Hazard Mitigation Plan where relevant and applicable.
- Policy H3:** Disaster Preparedness: Lead in the preparation for natural and man-made disasters by taking a proactive approach.
- Policy H10:** Emergency Routes: Continue to collaborate with Kings County Office of Emergency Management to establish and maintain an Emergency Operations Plan that includes identification of Hanford’s emergency evacuation routes and operational needs for first responders.

### City of Lemoore General Plan

The City of Lemoore General Plan Safety and Noise Element was adopted in 2012 and identifies the natural and man-made public and safety hazards within the city. This element establishes policies and programs to mitigate their potential impacts through preventive and responsive measures. Lemoore’s Safety and Noise Element states that most of the Planning Area is considered to have

either little or no threat or moderate threat of wildfire. The City of Lemoore has adopted guiding policies and implementation strategies for addressing wildfires and include the following:

- Implementation Policy SN-I-13: Ensure Fire Department personnel are trained in wildfire prevention, response and evacuation procedures.
- Implementation Policy SN-I-14: Continue the City's Weed Abatement Program administered by the Volunteer Fire Department to reduce fire hazards before the fire season.
- Implementation Policy SN-I-15: Enforce the Uniform Fire Code through the approval of construction plans and final occupancy permits.
- Implementation Policy SN-I-16: Utilize existing or new public awareness programs through the Volunteer Fire Department to highlight the dangers of open burning and how homeowners can protect their properties from wildfires.
- Implementation Policy SN-I-17: Update news media and City residents on current wildfire threat levels during drought periods.

### **Kings County Emergency Operations Plan**

The Kings County Emergency Operations Plan (EOP), adopted in 2015, addresses the County's planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and national security emergencies in or affecting the Kings County. The EOP focuses on large-scale disasters that pose major threats to life, property and the environment requiring unusual emergency responses (Kings County 2015).

The scope of this plan applies to any extraordinary emergency situation associated with any hazard, natural or human caused which may impact the Kings County that generates situations requiring planned, coordinated responses by multiple agencies or jurisdictions.

**Fresno-Kings Unit Strategic Fire Plan** The Fresno-Kings Unit (Unit) Strategic Fire Plan completed by a collaborative effort with the various stakeholders in the Unit, program managers, bureau managers and Battalion Chiefs (Unit 2020). The Unit Pre-Fire Engineer compiled the information from the various inputs and presented a document that is a comprehensive Strategic Fire Plan for the Unit that address the needs of the ever-changing environment within the Fresno-Kings Unit. The Unit Strategic Fire Plan establishes new goals and objectives for the Unit, establishes assets at risk, Pre-Fire Management Strategies, and Pre-Fire Management Tactics.

### **Local Hazard Mitigation Plan**

Due to the extensive history of natural disasters occurring throughout California, the State encourages communities to adopt Local Hazard Mitigation Plans (LHMPs) to gather hazard risk data and ensure local-level mitigation and preparedness. Local jurisdictions develop, adopt and update hazard mitigation plans to establish guiding principles for reducing hazard risk, as well as specific mitigation actions to eliminate or reduce identified vulnerabilities. The Kings County Local Hazard Mitigation Plan (Kings County 2012) serves to reduce or eliminate long-term risk to people and property from natural hazards and their effects in the KCAG region, including the cities of Avenal, Corcoran, Hanford, and Lemoore. It also involves community service areas of Armona, Home Garden, Kettleman City, and Stratford.

### 4.15.3 Impact Analysis

#### **a. Methodology and Significance Thresholds**

Appendix G of the State CEQA Guidelines identifies the following criteria for determining whether a project's impacts would have a significant impact on wildfire:

If located in or near SRAs or lands classified as very high fire hazard severity zones, would the project:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan.
2. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
4. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.
5. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

The methodology used for the following evaluation is based on a review of documents and publicly available information about wildfire conditions in the KCAG region to determine the potential for implementation of the potential for implementation of the 2022 RTP/SCS to result in increased wildfire risks. This includes city and county planning documents. This program-level analysis is based on an overall understanding of the key fire safety concerns that could result from implementation of the 2022 RTP/SCS. The evaluation of wildfire impacts reasonably assumes that the construction and development under the 2022 RTP/SCS would adhere to the latest federal, state, and local regulations, and conform to the latest required standards in the industry, as appropriate for individual projects.

#### **b. Project Impacts and Mitigation Measures**

This section discusses impacts and mitigation measures associated with transportation projects and the land use scenario contained within the 2022 RTP/SCS. Specific projects may generate wildfire impacts during construction and operation. The following section summarizes the impacts associated with capital improvement projects in the 2022 RTP/SCS. Due to the programmatic nature of the 2022 RTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible at this time. In general, however, implementation of proposed transportation improvement projects and future projects under the land use scenario envisioned by the 2022 RTP/SCS could result in the impacts as described in the following sections.

<b>Threshold 2:</b>	Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire
<b>Threshold 3:</b>	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
<b>Threshold 4:</b>	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
<b>Threshold 5:</b>	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires

Potential impacts associated with the proposed circulation and emergency access routes for 2022 RTP/SCS projects are discussed in Section 4.13, Transportation. As discussed therein, 2022 RTP/SCS projects would require adequate emergency access and the approval of project-specific on-site circulation plans that would comply with County design standards to accommodate emergency vehicles and service vehicles. Therefore, impacts associated with impairment of emergency response and evacuation plans would be less than significant and are not discussed further in this section.

**IMPACT WF-1 PROPOSED TRANSPORTATION IMPROVEMENTS AND LAND USE PROJECTS ENVISIONED BY THE 2022 RTP/SCS WOULD BE LOCATED IN OR NEAR VERY HIGH FIRE HAZARD SEVERITY ZONES, AND SIGNIFICANT RISKS OF LOSS, INJURY, OR DEATH FROM WILDFIRES OR DOWNSTREAM FLOODING OR LANDSLIDES WOULD OCCUR. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

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#### *Wildland Fire*

As shown in Figure 4.15-1, SRA's moderate hazard zones are present in the southwestern portions of the County and along Highway 33. LRA's Moderate Fire Hazard Severity Zones are present in the southern portion of the County and along portions of the I-5 corridor, as well as scattered in the northern portion of the County. LRA High Fire Hazard Severity zones are present in southwestern portions of the County. High to Very High Fire Hazard Severity Zones are also present in SRAs in the southwestern portions of the County (CAL FIRE 2007b).

The land use scenario envisioned by the 2022 RTP/SCS concentrates the forecasted population and employment growth in urban areas and corridors of the KCAG region, such as incorporated cities and unincorporated towns, where the risk of wildfire is less than in more rural, or mountainous areas where fuels are abundant and emergency response access is restricted. 2022 RTP/SCS transportation improvements, including roadway improvements, transportation demand management, and transit improvements, would not involve developing residential uses that would include occupants. While some transportation projects may include office or maintenance structures, occupation would be temporary and would not be situated in very high FHSZs or SRAs. Additionally, transportation projects associated with the 2022 RTP/SCS would improve mobility in the KCAG region, which could facilitate an expedited evacuation or escape during a wildfire. However, urban and outlying areas within the WUI are still at risk from wildfire.

Land use development envisioned in the proposed 2022 RTP/SCS that would be located within or less than two miles from an SRA would cause significant wildfire impacts because existing codes and regulations cannot fully prevent wildfires from damaging structures or populations. These projects would increase the exposure of transportation infrastructure to risk of loss or damage from wildfire. Additionally, fire related impacts may extend far beyond the fire footprint as damage to homes, infrastructure, and ecosystems, and diminished air and water quality could all occur. People residing in residential development could be exposed to smoke and air pollution from wildfires regardless of their location within urbanized areas or the WUI. Thus, impacts associated with slope, prevailing winds, and other factors that would exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or uncontrolled spread of a wildfire would be significant.

Requirements to adhere to the local hazard mitigation plan, as well as the local general plan policies and programs aimed at reducing the risk of wildfires through land use compatibility, training, sustainable development, brush management, public outreach, and service standards for fire departments would reduce the risk of wildfire for these projects. Additionally, CBC regulations have been prepared and adopted for the purpose of establishing minimum wildfire protection standards in conjunction with building, construction, and development in a SRA. Title 14 sets forth the minimum development standards for emergency access, including fuel modification, setback, signage, and water supply, which are intended to result in development that avoids or minimizes the hazards associated with development including associated infrastructure to roads, fuel breaks, emergency water sources, power lines or other utilities in wildfire-prone areas.

Although there are limited instances where the proposed land use pattern and planned transportation investments of 2022 RTP/SCS may result in growth in or near wildfire prone areas, substantial wildfire-related effects could still occur. The 2022 RTP/SCS plans for the construction and maintenance of associated infrastructure and envisions land development near SRAs. Title 14 sets forth the minimum development standards for emergency access, fuel modification, setback, signage, and water supply, which are intended to result in development that avoids or minimizes the hazards associated with development including associated infrastructure to roads, fuel breaks, emergency water sources, power lines or other utilities in wildfire-prone areas. Global climate change will pose an increasing threat to wildland areas and nearby urban environments. The 2022 RTP/SCS plans for the construction and maintenance of associated infrastructure and envisions land development within and near these areas. The potential for slope failure and landslides can be exacerbated in these regions in the aftermath of a wildfire. Due to the unpredictable nature of wildfires in California, it is anticipated that projects in the 2022 RTP/SCS could exacerbate wildfire risk both in exposure to wildfires and in the aftermath conditions as a result of runoff, post-fire slope instability, or drainage changes as a result of wildfires denuding a slope. Even with implementation of required policies and measures, it is not possible to prevent the proposed 2022 RTP/SCS projects from exposing people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Therefore, impacts would be significant.

### *Construction and Fire Risk*

There are proposed 2022 RTP/SCS transportation projects that are in or adjacent to SRAs. Construction activities for transportation and land use projects within the 2022 RTP/SCS involving the use of vehicles and heavy machinery could result in the ignition of a wildfire. During construction, heavy equipment and passenger vehicles driving on vegetated areas prior to clearing and grading could increase the risk of fire. Heated mufflers, explosives used during site preparation or line splicing, and improper disposal of cigarettes could potentially ignite surrounding vegetation. The use of heavy equipment, such as bulldozers and graders, has the potential to accidentally ignite



a fire from sparks created when equipment blades strike rocks or metal objects. If noticed by the equipment operator or other project specific personnel, small ignitions can easily be suppressed by the construction equipment and/or on-site fire watch personnel. A fire could also be started during a project's construction by project personnel improperly disposing of burning cigarettes in areas covered with wildland vegetation and within 50 feet of combustible material storage.

Moreover, if the introduction of invasive, non-native plants is not controlled during construction, a project site could progressively become dominated by non-native plants which tend to increase the frequency and severity of wildfires. Based on recent scientific evidence, it is likely that anthropogenic climate change will continue to chronically enhance the potential for western U.S. forest fire activity when fuels are not limiting. As discussed further in Section 4.9, Greenhouse Gas Emissions and Climate Change, increasingly difficult drought conditions and extreme weather events will continue to raise wildfire risk within the KCAG region.

New construction would be subject to the latest California Fire Code, which contains safety measures to minimize the threat from wildfires. Title 14 of the California Code of Regulations sets forth the minimum development standards for emergency access, fuel modification, setback, signage, and water supply, which help prevent loss of structures or life by reducing wildfire hazards. The codes and regulations would reduce the risk of loss, injury, or death from wildfire for new development envisioned by the proposed 2022 RTP/SCS, but not entirely. Therefore, impacts involving the installation or maintenance of associated infrastructure that may exacerbate fire risk would be significant.

#### *Exacerbated Fire Risks*

Slope failure and landslides can be exacerbated in regions in the aftermath of a wildfire. Hillsides can become denuded of vegetation and become unstable, increasing the potential for landslide risks and associated hazards downslope from such landslides. Potential impacts related to slope stability and landslides are discussed in Section 4.7, *Geology and Soils*. As discussed therein, stable slope conditions vary depending on location of the project within the region. Seismic related ground failure such as landslides may result from an earthquake in the KCAG region. Areas having high landslide susceptibility are located southwest of I-5 in the southwestern portion of the County and include the Kettleman Hills and land within the Coast Ranges. The majority of the remainder of the County, east of I-5, is mapped with no landslide susceptibility and limited areas with low susceptibility. In areas of high susceptibility to landslides (southwestern portion of the County), 2022 RTP/SCS projects would be required to conform with Chapter 5A of the Kings County Code of Ordinances, Flood Damage Prevention, prior to approval of construction. Even with this compliance, impacts exposing people or structures to significant risks, including landslides, as a result of post-fire slope instability would be significant.

This same issue applies to runoff and flooding potential after a wildfire with denuded and unstable hillsides. Potential impacts related to flooding, runoff, and drainage are discussed in Section 4.10, *Hydrology and Water Quality*. Projects would be required to comply with existing design guidelines and the County's Storm Water Management Program requirements for post-development peak stormwater flows and Best Management Practices to avoid and/or minimize flooding impacts and impacts to on-site and off-site drainage. Even through adherence to these regulations, impacts associated with exposure of people or structures to downslope or downstream flooding or landslides as a result of runoff due to post-fire slope instability would continue to be significant. However, even with adherence to these regulations, people or structures may still be exposed to downslope or downstream flooding or landslides as a result of runoff due to post-fire slope

instability, and impacts would be significant. The following mitigation measures would reduce this impact.

## **Mitigation Measures**

Transportation project sponsor agencies can and should implement, the following mitigation measures for applicable transportation projects that would result in wildfire impacts. The County and cities in the KCAG region can and should implement these measures, where relevant to land use projects implementing the 2022 RTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

### *WF-1(a) Wildfire Risk Reduction*

For individual transportation or land use project within or less than two miles from an SRA or very high fire hazard severity zones, the implementing agency shall require appropriate mitigation to reduce the risk. Examples of mitigation to reduce risk of loss, injury or death from wildfire include, but are not limited to:

- Require the use of fire-resistant vegetation native to the KCAG region and/or the local microclimate of the project site and discourage the use of fire-prone species especially nonnative, invasive species.
- Enforce defensible space regulations to keep overgrown and unmanaged vegetation, accumulations of trash and other flammable material away from structures.
- Provide public education about wildfire risk, fire prevention measures, and safety procedures and practices to allow for safe evacuation and/or options to shelter-in-place.
- Require adherence to the local hazard mitigation plan, as well as the local general plan policies and programs aimed at reducing the risk of wildfires through land use compatibility, training, sustainable development, brush management, public outreach, and service standards for fire departments.
- Ensure sufficient emergency water supply.
- Encourage the use of fire-resistant vegetation native to the KCAG region and/or the local microclimate of the project site and discourage the use of fire-prone species especially non-native, invasive species.
- Require a fire safety plan be submitted to and approved by the local fire protection agency. The fire safety plan shall include all of the fire safety features incorporated into the project and the schedule for implementation of the features. The local fire protection agency may require changes to the plan or may reject the plan if it does not adequately address fire hazards associated with the project as a whole or the individual phase of the project.
- Prohibit certain project construction activities with potential to ignite wildfires during red-flag warnings issued by the National Weather Service for the project site location. Example activities that should be prohibited during red-flag warnings include welding and grinding outside of enclosed buildings.
- Require fire extinguishers to be onsite during construction of projects. Fire extinguishers shall be maintained to function according to manufacturer specifications. Construction personnel shall receive training on the proper methods of using a fire extinguisher.
- Smoking and open fires shall be prohibited at individual transportation or land use projects sites included in 2022 RTP/SCS during construction and operations. A copy of the notification to all

contractors regarding prohibiting smoking and burning shall be provided to the respective County in the KCAG Region.

#### *WF-1(b) Fire Protection Plan*

Individual transportation or land use projects included in the 2022 RTP/SCS shall prepare a Fire Protection Plan that meets Kings County Fire Department requirements. The plan shall contain (but not be limited to) the following provisions:

- All construction equipment shall be equipped with appropriate spark arrestors and carry fire extinguishers.
- A fire watch with appropriate firefighting equipment shall be available at the Project site at all times when welding activities are taking place. Welding shall not occur when sustained winds exceed that set forth by the Kings County Fire Department unless a Kings County Fire Department y -approved wind shield is on site.
- A vegetation management plan shall be prepared to address vegetation clearance around all Wind Turbine Generators (WTGs) and a regularly scheduled brush clearance of vegetation on and adjacent to all access roads, power lines, and other facilities.
- Operational fire water tanks shall be installed prior to construction.
- Provisions for fire/emergency services access if roadway blockage occurs due to large loads during construction and operation.
- Cleared, maintained parking areas shall be designated; no parking shall be allowed in non-designated areas.
- The need for and/or use of dedicated repeaters for emergency services.
- Appropriate Hot work permits (such as cutting and welding permits) shall be obtained from the jurisdictional fire agency.
- Compliance with California PRC 4291, 4442, and 4443.

#### **IMPLEMENTING AGENCIES AND TIMING**

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

#### **Significance After Mitigation**

With implementation of Mitigation Measures WF-1(a) and WF-1(b), the risk of loss of structures and transportation infrastructure and the risk of injury or death due to wildfires would be reduced. These measures would make structures and transportation infrastructure more fire resistant and less vulnerable to loss in the event of a wildfire. These measures would also reduce the potential for construction of 2022 RTP/SCS projects to inadvertently ignite a wildfire. In addition, specific project impacts regarding wildfire risk would be addressed prior to project implementation during the planning and design process.

However, it is not possible to prevent a significant risk of wildfires or fully protect people and structures from the risks of wildfires in all cases. Therefore, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less than significant levels are feasible.

### c. Specific 2022 RTP/SCS Projects That May Result in Impacts

As discussed above, specific 2022 RTP/SCS projects that could result in significant wildfire impacts are those located within or less than two miles from an SRA or high fire hazard severity zones. These projects would increase the potential to ignite fires and therefore risk exacerbating the potential for loss or damage from wildfire. The public that would use that infrastructure and land uses developed within those areas and the maintenance personnel that would service that infrastructure or work within those areas would also be exposed to exacerbated risk of loss or damage due to wildfire. 2022 RTP/SCS projects that do not meet these criteria would have a lesser wildfire impact.

Table 4.15-1 shows all 2022 RTP/SCS projects that would occur within or less than two miles from an SRA. All transportation or land use projects located within or less than two miles from SRAs or lands classified as very high fire hazard severity zones would result in potentially exacerbated risks associated with Impact WF-1. Additional specific analysis described in the above mitigation measure would need to be conducted as individual projects are implemented to determine the magnitude of project-specific impacts.

**Table 4.15-1 RTP/SCS Planned and Programmed Projects Occurring In or Less Than 2 Miles from an SRA or Very High Fire Severity Zone**

Jurisdiction	Location	Description	Project Impacts
<b>Roadway Projects</b>			
Avenal	San Joaquin St to SR 269	Reconstruct and improve curb/ramps	WF-1
Avenal	Central Ave	Reconstruct and improve curb/ramps	WF-1
Avenal	Stanislaus St	Reconstruct and improve curb/ramps	WF-1
Avenal	Merced St	Reconstruct and improve curb/ramps	WF-1

#### 4.15.4 Cumulative Impacts

A wildfire ignited in the KCAG region could spread into adjoining counties as identified in Section 3.3.3.1, Cumulative Impact Methodology. Likewise, wildfires ignited in counties adjoining the KCAG region could spread into the KCAG region. Therefore, the cumulative impact analysis area for wildfire consists of the KCAG region and the adjoining counties.

The proposed 2022 RTP/SCS is not expected to substantially increase wildfires, but the occurrence of wildfires always exists within the KCAG region and transportation and land use projects under the proposed 2022 RTP/SCS could place people and structures within or less than two miles from an SRA or very high fire hazard severity zones. Construction and operation of projects would risk exacerbating these existing fire hazards by creating additional potential sources of fire ignition.

During construction and operation of the proposed 2022 RTP/SCS projects, if one of these cumulative projects were to simultaneously result in a wildland fire ignition during construction, they could combine and increase the severity of wildland fires beyond existing conditions. The combination of these projects being constructed concurrently could substantially increase the frequency of fire in the area above natural conditions. Cumulative impacts would be significant.

The land use scenario envisioned in the proposed 2022 RTP/SCS would result in some projects located within or less than two miles from an SRA or very high fire hazard severity zones, causing significant wildfire impacts, as existing codes and regulations cannot fully prevent wildfires from being generated and damaging structures or populations. These projects would increase the potential to ignite fires and therefore risk exacerbating the potential for loss or damage from

wildfire. This added risk could start wildfires that could spread outside the KCAG region impacting adjacent counties and communities. As a result, the land use scenario envisioned in the proposed 2022 RTP/SCS could result in a cumulatively considerable increase in wildfire risk. Mitigation measures described earlier in this section would minimize the contribution to this cumulative impact. However, the overall cumulative increase in fire frequency would continue to be substantial and the proposed 2022 RTP/SCS's contribution would be cumulatively considerable.

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## 4.16 Effects Less Than Significant

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Section 15128 of the California Environmental Quality Act (CEQA) Guidelines requires an EIR briefly describe any possible effects that were determined not to be significant. The environmental factors discussed below are in response to the checklist questions listed in Appendix G of the CEQA Guidelines that were not discussed in Sections 4.1 through 4.15 of the EIR.

### 4.16.1 Geology and Soils

1. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?

The 2022 RTP/SCS does not include projects that would require the use of septic tanks or alternative wastewater disposal systems. The expansion and/or improvement of streets, highways, transit facilities, airports, and related transportation infrastructure would not include elements that would require wastewater treatment or otherwise necessitate the development of septic systems.

Future infill and land development projects that may be implemented as a result of the 2022 RTP/SCS would be anticipated to connect to existing wastewater infrastructure. Any development projects in rural areas requiring septic tanks or alternative wastewater disposal systems would be required to comply with State Water Resources Control Board regulations for the siting, installation, operation, and maintenance of on-site wastewater treatment systems, pursuant to Assembly Bill 885. Septic systems in the KCAG region would be required to comply with the design standards set forth by the Kings County Code of Ordinances Section 5-82 *Plumbing Code Exceptions and Superseding Provisions*, which designates required minimum disposal area square footage and required leaching system design. Cities within the KCAG region would further require compliance with local ordinances. Therefore, impacts related to having soils incapable of adequately supporting the use of septic tanks and alternative wastewater disposal systems would be less than significant.

### 4.16.2 Mineral Resources

1. Would the project Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?
2. Would the project Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

The 2022 RTP/SCS primarily involves modifications to existing roadways, including improvements related to intersections, safety, and widening, as well as alternative transportation projects. In addition, infill and development projects envisioned by the 2022 RTP/SCS would be located within existing urbanized areas. In 1996, the County adopted a SMARA Ordinance (Chapter 17 of the Kings County Code of Ordinance) to establish itself as a lead agency for issuing SMARA permits within the unincorporated portions of the County. This ordinance requires a local permit, financial assurance, and a reclamation plan. These requirements are implemented through the conditional use permit process of the County Zoning Ordinance. Furthermore, the Kings County General Plan Resource Conservation Element requires that the County will only allow mineral extraction as a conditional use where land use conflicts are avoided, environmental resources are not substantially degraded, and proper reclamation is assured consistent with the requirements of the Kings County SMARA

Ordinance (Kings County 2009). Therefore, mineral extraction is limited to areas with compatible surrounding land uses that do not harm the natural environment. RC Policy H1.2.1 of the General Plan discourages mining operations near residential areas and other sensitive land uses unless all impacts can be mitigated.

There are no projects included in the 2022 RTP/SCS that would directly result in the extraction, exploration, or digging for mineral resources, or prevent such activities, and therefore would not result in the loss of availability of minerals. Impacts pertaining to mineral resources would be less than significant.

#### 4.16.3 Population and Housing

1. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
2. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Improvements associated with the 2022 RTP/SCS would not result in direct population growth beyond anticipated growth in the region. Rather, projects under the proposed 2022 RTP/SCS are designed to fully support the transportation needs of the growing population while implementing the infill development approach outlined in the 2022 RTP/SCS. The SCS is designed to accommodate growth by encouraging infill development in already urbanized areas. The transportation improvement projects under the 2022 RTP/SCS are intended and designed to support the land use patterns established in the SCS. Government Code Section 65080(b)(2)(B)(ii) requires that an RTP/SCS must accommodate all the population of the region, including all economic segments of the population, over the course of the planning period of the regional transportation plan. In compliance with the requirements, the proposed 2022 RTP/SCS includes strategies to accommodate new housing units through 2046. The housing strategies would continue the KCAG region's commitment to growth in infill areas but are also intended to protect current residents from displacement, preserve existing affordable housing, and produce new housing to secure long-term affordability for lower income populations. Therefore, the 2022 RTP/SCS is consistent with projected and planned growth. Further, all transportation improvement projects and land uses envisioned by the 2022 RTP/SCS are anticipated by the 2035 Kings County General Plan, as all improvements have been coordinated with the local jurisdiction. Therefore, population and housing growth impacts would be less than significant.

#### 4.16.4 Public Services

1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection; police protection; schools; parks; other public facilities?
  - a. Fire protection?
  - b. Police protection?
  - c. Schools?



- d. Parks?
- e. Other public facilities?

Transportation projects under the 2022 RTP/SCS would not generate demand for police or fire services, schools, parks, or other public facilities beyond what is already planned for in the cities and County of the KCAG region. The majority of these projects are related to maintenance and bicycle and pedestrian improvements that would not involve the construction of new public services infrastructure. Transportation projects would not increase the population of the KCAG region, and transportation projects would not require the removal or replacement of existing public service facilities.

Future growth and development may increase demand for public services; however, demand is not expected to exceed that already anticipated within the general plans and regional growth forecasts prepared for each respective area in which proposed SCS development would be located. Growth in the KCAG region would not be a result of the proposed 2022 RTP/SCS. The proposed 2022 RTP/SCS is designed to accommodate the people, households, and jobs identified in regional growth forecasts. While growth would occur, the proposed 2022 RTP/SCS distributes this growth consistent with adopted plans and would not induce population growth beyond what has been previously anticipated. Additionally, the proposed 2022 RTP/SCS includes land use strategies that would allow for denser, more compact development in identified infill development areas, and therefore service areas for existing providers are not anticipated to expand. The Kings County General Plan includes policies and implementation programs to ensure adequate public services are maintained. Policy D1.4.9 of the Land Use Element was established to maintain existing levels of service through the year 2025. The public facilities fees are allocated to specific uses for protection and public services including Countywide Public Protection, Sheriff, Fire, Library, and Animal Control. (County of Kings 2009). Cities have similar general plan policies. The KCAG region has planned for growth that would be accommodated by the proposed 2022 RTP/SCS, and thus the 2022 RTP/SCS would be consistent with Policy D1.4.9. Planning for growth will continue to occur throughout implementation Public Facility Impact Fees of the proposed 2022 RTP/SCS, and individual jurisdictions would increase services as necessary.

The number, location, physical sizes, and designs of future new and expanded fire and police protection facilities are unknown. As a result, specific environmental impacts associated with specific development cannot be speculated. However, if an individual jurisdiction chooses to increase fire or police protection facilities, the expansion of existing or development of new facilities would be subject to project-specific environmental review under CEQA whereby environmental impacts would be identified and mitigated accordingly. As mentioned above, growth that would be distributed by the proposed 2022 RTP/SCS has been accounted for within general plans and other regional growth forecasts. As such, any increased demand for fire or police protection facilities has been anticipated, and the proposed 2022 RTP/SCS would not induce growth such that increased fire or police protection facilities are necessary beyond what has already been determined by individual jurisdictions.

Future project sponsors are required by law to pay development impacts fees for schools at the time building permits are issued. The fees are used by a school district to mitigate impacts associated with long-term operation and maintenance of school facilities. Pursuant to Section 65996 of the California Government Code, payment of these fees fulfils complete mitigation of environmental impacts.

Through regulatory compliance, adequate parkland acreages would be maintained throughout the KCAG region. For a full discussion of parks, refer to Section 4.16.5, *Recreation*, below.

#### 4.16.5 Recreation

1. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
2. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The proposed 2022 RTP/SCS would accommodate the people, households, and jobs identified within KCAG's regional growth forecast. Transportation projects under the proposed 2022 RTP/SCS would not generate demand for parkland or recreational resources. However, the overall growth resulting from the land use pattern established by the proposed 2022 RTP/SCS would result in an increased demand for services including recreational facilities.

Development of the individual land use projects in the proposed 2022 RTP/SCS would be required on a project-by-project basis to pay development fees towards the applicable jurisdiction. Since the passage of the 1975 Quimby Act, cities and counties have been authorized to adopt ordinances requiring that developers set aside land, donate conservation easements, or pay fees that can be used for purposes of acquiring parkland to maintain identified parkland acreages per 1,000 in population. In accordance with the Quimby Act. The County of Kings General Plan OS Goal D1 states the County to provide for parks, recreation, and open space that will serve the current and future needs of County residents and visitors (County of Kings 2009). Cities throughout the KCAG region have similar requirements implemented into their General Plans. All future development under the proposed 2022 RTP/SCS would be required to comply with these regulations. The payment of fees or provision of parkland would go toward maintaining parks or providing new park space, which would also reduce use of existing recreational facilities. Reduced use of existing facilities would result in a corresponding decrease in deterioration of existing recreational facilities. Therefore, impacts related to recreation would be less than significant.

#### 4.16.6 Utilities and Service Systems

1. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
2. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable development during normal, dry and multiple dry years?
3. Would the project result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's demand in addition to the provider's existing commitments?
4. Would the project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?
5. Would the project comply with federal, state, and local management and reduction statutes related to solid waste?

Future infill and development projects envisioned by the proposed 2022 RTP/SCS would occur in urbanized areas and would connect to existing utilities. However, the proposed 2022 RTP/SCS does not induce a population beyond what is generally projected and accounted for in local and regional plans. The proposed 2022 RTP/SCS is not inducing population growth, but rather establishing a framework to accommodate anticipated growth. As such, any growth facilitated by the proposed 2022 RTP/SCS would not require new utilities facilities beyond what is already anticipated in regional growth forecasts, Capital Improvement Programs (CIP), and general plans.

Urban Water Management Plans (UWMPs) for the KCAG region estimate and pursue the efficient use of available water supplies identifying short-term and long-term water demand management measures. UWMPs are generally updated every five years to account for water demand resulting from the growth envisioned in general plan updates and updated population growth forecasts. Therefore, the current UWMPs applicable to the KCAG region generally account for the land development envisioned within the proposed 2022 RTP/SCS because it is largely consistent with relevant planning documents, such as general plans. Furthermore, Groundwater Sustainability Plans (GSPs) prepared under the Groundwater Sustainability Act are implemented in order to protect groundwater in the KCAG area. The proposed 2022 RTP/SCS would adhere to the water conservation requirements set forth within these plans. Regional growth forecasted within the proposed 2022 RTP/SCS, general plans, and other documents are accounted for in UWMPs and GSPs, and any growth facilitated by the proposed 2022 RTP/SCS would not be in excess of anticipated growth forecasts. Thus, proposed 2022 RTP/SCS would not result in insufficient water supplies or a determination by a wastewater treatment provider that inadequate capacity exists to serve the anticipated demand.

Transportation and land use development projects implementing the proposed 2022 RTP/SCS would be required to comply with the California Green Building Code and Senate Bill 1016, which require that construction operations recycle a minimum of 50 percent of waste generated. Similarly, land use projects would also be required to comply with federal, State, and local statutes and regulations related to solid waste, including a 50 percent diversion rate pursuant to Assembly Bill 939 and a future 75 percent diversion rate pursuant to Assembly Bill 341, as well as local jurisdiction goals and policies for recycling and diversion of solid waste. Compliance with these requirements would ensure that solid waste generated from land use development would be minimized to the extent practical, and that diversion rates would increase into the future, as development included in the 2022 RTP/SCS is built out. The Kings Waste and Recycling Authority Facility has the capacity to handle two or more times the current incoming tonnage without increasing staff or equipment (County of Kings 2009). There are two operational landfills in Kings County. The Avenal Regional Landfill is currently at 20% capacity and its projected closure year is 2056 (CalRecycle 2022). This landfill is adequate for handling existing solid waste and future waste generated through 2056. The proposed 2022 RTP/SCS would not generate solid waste in excess of State or local standards or conflict with federal, State, and local management and reduction statutes. Therefore, impacts related to utilities would be less than significant.

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## 5 Other CEQA Required Discussions

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This section discusses growth-inducing impacts, irreversible environmental impacts, and significant and unavoidable impacts that would be caused by the implementation of the 2022 RTP/SCS.

### 5.1 Growth Inducement

Section 15126.2(g) of the *State CEQA Guidelines* requires a discussion of a proposed project's potential to induce growth. Specifically, an EIR must discuss the ways in which a proposed project could foster or facilitate economic or population growth, such as by providing employment opportunities or removing obstacles to population growth. In addition, the EIR must discuss how the project may encourage and/or facilitate other activities that could significantly affect the environment. It cannot be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment. Economic and population growth does not necessarily create significant and direct physical changes to the environment. However, depending upon the type, magnitude, and location of growth, it can result in significant environmental effects. A project's growth inducing potential is considered significant if growth generated by the project could result in significant effects to one or more environmental issue areas.

#### 5.1.1 Employment, Household, and Population Growth

The proposed 2022 RTP/SCS was created using allocations based on the California Department of Finance (DOF) population projections (DOF 2021). The purpose of this forecast is to provide estimates of populations, households, and employment for the KCAG region. KCAG does not hold land use authority and cannot directly affect populations growth, as development would be facilitated through implementation of the 2022 RTP/SCS, rather than proposing individual growth-inducing projects. The 2022 RTP/SCS intends to address economic and community vitality by facilitating economic development and opportunities through infrastructure investments and transportation improvements. The proposed 2022 RTP/SCS forecast for populations, household, and employment is shown in Table 5-1 below.

**Table 5-1 Household and Employment Forecast for the KCAG Region**

	2020			2030			2040			2050		
	Pop.	HH's	Emp.	Pop.	HH's	Emp.	Pop.	HH's	Emp.	Pop.	HH's	Emp.
KCAG Region	154,745	44,200	48,000	165,752	47,300	51,500	176,940	50,500	54,900	185,868	53,000	57,700
<b>Increase<sup>1</sup></b>	—	—	—	<b>7.1%</b>	<b>7.0%</b>	<b>7.3%</b>	<b>14.3%</b>	<b>14.3%</b>	<b>14.4%</b>	<b>20.1%</b>	<b>19.9%</b>	<b>20.2%</b>

Pop. = Population; HH's = Households; Emp. = Employment

<sup>1</sup>"Increase" refers to the percent increase from 2020

Source: DOF 2021; Kittelson & Associates 2022

As discussed in Section 2.6, *Project Characteristics*, the RTP/SCS intends to provide framework on how to plan for expected growth, accommodate the inevitable growth of the region, and distribute growth. The land use scenario envisioned by the 2022 RTP/SCS would facilitate infill development projects within existing urbanized areas and therefore could redistribute growth patterns. As discussed in Section 4.12, *Land Use*, 2022 RTP/SCS projects have been anticipated by the general plans of applicable local jurisdictions, as all improvements have been coordinated with applicable local jurisdiction. The improvements are designed and intended to accommodate anticipated growth, which would occur regardless of the implementation of the 2022 RTP/SCS.

As discussed in Section 4.12, *Land Use*, the land use scenario envisioned in the proposed 2022 RTP/SCS was developed in close coordination with KCAG member agency planning staff and also builds on local general plans and general plan updates currently in process or completed. Central to the SCS is a land use plan identifying the general location of uses, residential densities, and building intensities within the region. The proposed 2022 RTP/SCS accounts for the land uses of four incorporated cities and numerous unincorporated communities. Starting with land uses allowed by existing, adopted local General Plans, the land use plan envisioned by the proposed 2022 RTP/SCS emphasizes more compact, infill development than what is generally provided for in existing general plans applicable to the region. This scenario which defines a pattern of future growth and transportation system investment for the region emphasizing a compact infill approach to land use and housing. Population and job growth is allocated principally within existing urban areas near public transit. The preferred land use scenario reflects the planned general plan growth detailed in the local agency's general plans. These growth patterns are consistent with growth historically seen in Kings County, with most residential and non-residential growth occurring within the incorporated cities of Avenal, Corcoran, Hanford, and Lemoore. Although Kings County is relatively rural, mixed-use infill and higher-density development are already seen in part of the urbanized areas. In addition, the mixed-use and infill development projects are encouraged in all the local agency general plans – most recently in Hanford general plan update. This includes a mix of infill development in downtown areas with some development in new growth areas but still within urban growth lines. Therefore, direct population growth impacts would be less than significant.

Implementation of the proposed 2022 RTP/SCS would create short-term economic growth in the region as a result of construction-related job opportunities. Implementation of the 2022 RTP/SCS would also generate additional employment opportunities for roadway, vehicle, and landscape maintenance, and public transit facility clean-up. The potential employment increase may subsequently increase the demand for support services and utilities, which could generate secondary employment opportunities. This additional economic growth would likely raise the existing revenue base within the region. Although such growth may incrementally increase economic activity in the KCAG region, significant physical effects are not expected to result from economic growth generated by the proposed 2022 RTP/SCS.

Furthermore, while development envisioned as part of the proposed 2022 RTP/SCS could result in additional commerce, industry, recreation, public services, and infrastructure throughout the region, this economic activity would be consistent with the regional growth forecast and local general plans. Forecasted growth would be accommodated under the proposed 2022 RTP/SCS, and thus would not be growth inducing, but rather reflect the regulatory mandate to house the forecasted population and be based on the latest planning assumptions.

The proposed 2022 RTP/SCS was developed to integrate forecasted population increases, employment opportunities, and housing needs within the KCAG area. Therefore, the proposed 2022

RTP/SCS is designed to accommodate growth that would occur with or without its adoption; it is not designed, nor is it anticipated to, induce population growth beyond the levels forecasted.

### 5.1.2 Removal of Obstacles to Growth

The majority of the transportation improvement projects included in the proposed 2022 RTP/SCS are in existing urbanized areas and transit corridors in the cities of Avenal, Corcoran, Hanford, and Lemoore; however, projects are also located in rural or semi-rural areas. Such transportation improvements can remove an obstacle to growth by either creating additional traffic capacity (in the case of a roadway widening) or providing new or easily facilitated access to undeveloped areas (in the case of a road extension). New infrastructure may also serve to accelerate or shift planned growth, or to encourage and intensify unplanned growth. These transportation network improvements would remove obstacles to growth in some areas of the region, which would support additional housing, population and economic growth, and could therefore be considered growth inducing.

However, the proposed 2022 RTP/SCS transportation improvements are designed to fully support the compact development approach outlined the SCS, and fully support the complementary transportation needs of the growing population. The SCS is designed to accommodate growth by encouraging infill and mixed-use development. The proposed 2022 RTP/SCS transportation improvement projects are intended and designed to support the land use projects established in the SCS. As a result, the proposed 2022 RTP/SCS would not induce growth beyond that anticipated by 2046; rather, it is intended to accommodate it by encouraging infill development within existing urban areas. Therefore, the proposed 2022 RTP/SCS is consistent with projected and planned growth. Further, all proposed 2022 RTP/SCS transportation improvement projects are anticipated by the general plans of the applicable local jurisdictions, as all improvements have been coordinated with the applicable local jurisdiction.

## 5.2 Irreversible Environmental Effects

Section 15126.2(d) of the *State CEQA Guidelines* requires a discussion of significant irreversible environmental changes that could result from implementation of a proposed project. These may include current or future uses of nonrenewable resources and secondary or growth-inducing impacts that commit future generations to similar uses. CEQA requires that irretrievable commitments of resources be evaluated to ensure that such current consumption is justified.

Although the proposed 2022 RTP/SCS forecasts to a horizon year of 2046, transportation improvement projects would have an indefinite life span, assuming regular maintenance of the proposed improvements and long-term occupancy of infill development. The proposed improvements would be located primarily in areas where transportation facilities already exist, where transportation facilities are already planned, or where transportation facilities are needed to support the new land use patterns identified in the SCS. Therefore, most proposed transportation projects are not generally expected to dramatically alter development patterns in the KCAG region and projects would support planned future development patterns. The proposed 2022 RTP/SCS would provide a foundation for local, regional, and State officials in making decisions aimed at achieving a coordinated and balanced transportation system.

Many of the adverse impacts that could occur from implementation of the proposed 2022 RTP/SCS are short-term in nature resulting primarily from construction of the proposed transportation and land use projects. Typical construction-related impacts can involve the following issues: noise, air



quality, aesthetics, and construction-related erosion and associated water quality impacts. In addition, though such materials would not be used in a wasteful manner, all construction activity would involve the use of non-renewable energy sources, potable water and building materials (see Section 4.6, *Energy*). The use of these resources during construction would increase demand and impact supplies across the KCAG region.

Long-term irreversible environmental impacts are associated with increased asphalt or concrete paving and related direct and cumulative impacts to geology and soils; biological and cultural resources (historic resources); transportation; and hydrology and water quality, as discussed in their respective sections of this EIR. In addition, the proposed 2022 RTP/SCS would result in an overall increase in the urbanized character of the region's cities, which would have long-term irreversible aesthetic impacts. Mitigation measures have been prescribed to minimize the long-term impacts of the 2022 RTP/SCS. However, in certain instances, as discussed in Section 5.3 below, impacts could remain significant with implementation of mitigation measures.

## 5.3 List of Significant and Unavoidable Impacts

The proposed 2022 RTP/SCS would result in the following significant and unavoidable impacts. For a full discussion on these impacts, please refer to the sections which they are discussed.

- Impact AES-1: Public views of scenic vistas and scenic resources within state scenic highways
- Impact AES-2: Degradation of existing visual character
- Impact AES-3: Increased light and glare
- Impact AQ-2: Result in a cumulatively considerable net increase in criteria pollutants
- Impact AQ-3: Result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment
- Impact AQ-4: Expose sensitive receptors to substantial particulate matter pollutant concentrations
- Impact AQ-5: Expose sensitive receptors to substantial TAC concentrations
- Impact AG-1: Conversion of Farmland to nonagricultural use and conflicts with agricultural uses, existing zoning, or a Williamson Act contract
- Impact BIO-1: Substantial adverse impact on special-status species
- Impact BIO-2: Substantial adverse impact on sensitive habitats, including sensitive natural communities and wetlands
- Impact BIO-3: Interference of wildlife movement
- Impact CR-1: Permanent loss of or damage to historic structures.
- Impact CR-2: Substantial adverse change in the significance of an archaeological resource
- Impact GEO-4: Cause a substantial adverse change in or disturb known and unknown paleontological resources
- Impact GHG-1: Generate GHG emissions that may have a significant impact on the environment
- Impact GHG-2: Result in a net increase in GHG emissions by 2046 compared to the existing baseline conditions
- Impact GHG-4: Conflict with the State's ability to achieve SB 32, EOs S-3-05 and B-55-18, and applicable local GHG reduction plan targets and goals

- Impact HAZ-3: Public and environmental hazards due to development on a hazardous material site
- Impact HYD-2: Substantially decrease groundwater supplies
- Impact HYD-5: Conflict with or obstruct implementation of a sustainable groundwater management plan
- Impact N-1: Substantial temporary increase in ambient noise levels in excess of standards established in local general plans or noise ordinances, and generation of absolute noise increase over existing noise levels
- Impact N-2: Permanent increase in ambient noise levels in excess of standards or over existing noise levels, and generation of absolute noise increase over existing noise levels
- Impact N-3: Generate excessive groundborne vibration levels
- Impact N-4: Expose sensitive receptors to noise levels in excess of standards established in a local general plan or noise ordinance
- Impact N-5: Exceed applicable exterior and interior noise thresholds due to close proximity to existing airports
- Impact T-2: Result in an overall increase in regional VMT or VMT per capita above baseline (2020) conditions
- Impact TCR-1: Impact tribal cultural resources
- Impact WF-1: Expose people or structures to significant risks associated with wildfire and install or maintain associated infrastructure that may exacerbate fire risk

## 6 Alternatives

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As required by Section 15126(d) of the State CEQA Guidelines, this EIR examines a reasonable range of alternatives to the proposed Project. Section 15126.6 of the CEQA Guidelines requires that an EIR “describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives.”

In addition, the CEQA Guidelines state the following:

- An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible. The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly discuss the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency’s determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are (i) failure to meet most of the basic project objectives, (ii), infeasibility, or (iii) inability to avoid significant environmental impacts. (CEQA Guidelines Section 15126.6(a)(c).)
- “Feasible” means capable of being accomplished within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. (CEQA Guidelines Section 15364.)

The primary objective of the Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) is to comply with applicable regulatory requirements, including California Transportation Commission (CTC) Guidelines and Senate Bill (SB) 375 regional greenhouse gas (GHG) reduction targets. KCAG’s specific objectives for the proposed Project are to additionally ensure that the transportation system planned for the KCAG region accomplishes the following:

- Serves regional goals, objectives, policies and plans.
- Responds to community and regional transportation needs.
- Promotes energy efficient, environmentally sound modes of travel and facilities and services.
- Promotes equity and efficiency in the distribution of transportation projects and services

The plan is designed to comply with the 2017 Regional Transportation Plan Guidelines for Metropolitan Planning Organizations adopted by the California Transportation Commission (CTC) on January 18, 2017. It is expected to be used as a guide by state and local officials as they strive to upgrade the overall transportation system in Kings County.

Each alternative analyzed during the RTP/SCS process was developed according to a theme to help ensure that choices regarding land use and transportation investments were consistent with one another. Land use choices in each alternative included development patterns, such as where to locate new housing, new job centers, and new mixed-use areas relative to existing communities (e.g., infill vs. converted farmland or open space). They also considered the density of new

development, which dictates the relative proportion of large-lot single-family housing to small-lot single-family housing and multifamily housing, and complementary uses, such as locating new housing near services and employment centers. Transportation investment choices in a alternative included decisions about spending levels on new roadway capacity, roadway maintenance, transit, and alternative modes of travel (e.g., bike and pedestrian). The alternative land use and transportation alternatives modeled and analyzed by KCAG are described in Chapter 13 *Sustainable Communities Strategy* of the Draft 2022 RTP/SCS and the proposed Project is described in detail Chapter 2 of this EIR.

## 6.1 Alternatives Development and Screening Process

During the development of the proposed 2022 RTP/SCS, KCAG explored various strategies that not only contribute to reducing GHG emissions, but also are practical to be deployed, given the highly rural setting in Kings County. SCS alternatives were created consisting of a combination of strategies, each with varying level of investment. Based on the in-depth analysis on the development direction of all the jurisdictions and the insight and perspective from the Stakeholder Advisory Group members, the approach of developing the SCS alternatives tailored to the needs of the region is encouraged to encompass all strategies with different degree of investment, other than choosing one over the other.

Four alternatives were evaluated by KCAG. The proposed Project evaluated throughout this EIR is Alternative A Current Trend. Alternative 1 (No Build) reflects Alternative A but with none of the new projects in the 2022 RTP being included, Alternative 2 reflects Alternative B, Alternative 3 reflects Alternative C, and Alternative 4 reflects Alternative D. A rejected alternative is discussed under **Error! Bookmark not defined.** *Alternatives Considered but Rejected.*

This alternatives analysis herein includes the following:

- **Alternative 1: No Build (SCS Scenario A, only 2018 RTP projects).** Transportation investments in this Alternative prioritize roadway rehabilitation and roadway system preservation and do not include new projects included in the 2022 RTP. No new roadway capacity of state highway facilities is assumed. Transportation investment in Alternative 1 is dedicated to roadway maintenance without the increased funding for alternative transportation improvements such as transit and bicycle/pedestrian improvements included in the 2022 RTP.
- **Alternative 2: Residential Infill Land Use (Tier 1 CIP List: SCS Scenario B).** The Residential Infill Land Use Alternative will reflect a positive market reaction to ADU/JADU activity in Kings County resulting from several legislative changes such as AB 1584 to reduce ADU restrictions as well as SB 9 which will ease restrictions on lot splits. This alternative reflects a reallocation of single-family detached dwelling unit (SFDU) growth which will decrease the numbers of new SFDU assumed to be developed and increase the assumptions for ADUs within high probability neighborhoods within the cities and developed unincorporated areas of Kings County. Several cities (e.g., Corcoran, Lemoore) are currently updating their zoning codes to facilitate ADU development.
- **Alternative 3: Current Trend Land Use with Enhanced Transportation Investment (Tier 1 CIP List: SCS Scenario C).** This alternative focuses on alternative transportation and emerging trends in transportation such as electromobility and broadband expansion as a means to reduce VMT and GHG emissions. The relative amount of investments in new roadway capacity is similar with the addition of high investment in the construction of bicycle and pedestrian facilities and passenger rail.

- **Alternative 4: Residential Infill with Enhanced Transportation Investment.** This alternative couples Residential Infill (Alternative 2) land use with the same enhanced investments described for Alternative 3. This includes the same enhanced investments in electromobility (i.e., ZEV charging infrastructure), broadband expansion (serving areas that currently have no or poor broadband access), active transportation infrastructure (advancing more projects identified in the active transportation plans) and passenger rail.

Each alternative is described and analyzed below to determine whether environmental impacts would be similar to, less than, or greater than those of the preferred project in the Project EIR. As required by CEQA, this section also includes a discussion of the “environmentally superior alternative” among those studied.

## 6.2 Alternatives Considered but Rejected

The CEQA Guidelines state that an EIR should identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency’s determination (CEQA Guidelines Section 15126.2(c)). Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are (i) failure to meet most of the basic project objectives, (ii), infeasibility, or (iii) inability to avoid significant environmental impacts (CEQA Guidelines Section 15126.6(c)).

For this EIR, two alternatives were considered by KCAG and rejected as infeasible during the scoping process for the RTP/SCS. these alternatives and the reasons for elimination are described below.

### 6.2.1 Aggressive VMT Reduction Alternative

Due to the nature of the KCAG region, certain aggressive VMT reducing measures are infeasible. For example, the region has a high variability in residential density and has a large rural component, with substantially longer trip lengths and therefore higher VMT for those in rural areas. These commuter trips are not easily replaced by transit, as longer transit trip lengths typically require multiple stops and/or transfers, making commuting via transit less attractive. The region also has high income variability, which further complicates the process of linking the residential and employment zones necessary to provide efficient urban transit and reduce commute trips.

There are also significant agriculture activities from farm workers making seasonal transient (field-to-field) trips and agriculture goods movements. These trips are not conducive to transit and often generate longer trip lengths and thus higher VMT. The VMT generated by these activities does not respond to VMT reduction strategies such as increased transit or telecommuting.

Other measures such as higher parking fees as well as tolling highway travel are only feasible in highly urbanized areas where increased transit services are available as an alternative mode. Therefore, an aggressive VMT reduction alternative was not considered as an alternative for detailed consideration in this EIR.

## 6.3 Alternative 1 No Build: Current Trend

### 6.3.1 Description

No Build (Current Trend) reflects the planned general plan growth detailed in the local agency general plans. These growth patterns are consistent with growth historically seen in

Kings County with most residential and non-residential growth occurring within the incorporated cities of Hanford, Lemoore, Corcoran, and Avenal. Although Kings County is a relatively rural area, mixed-use infill development and higher density development are already seen in part of the urbanized areas. In addition, the mixed use and infill development projects are encouraged in all the local agency general plans – most recently in Hanford general plan update. This includes a mix of infill development in downtown areas with some development in new growth areas but still within urban growth lines. Over 98 percent of countywide housing growth is projected to occur within incorporated cities with less than 2 percent growth in unincorporated communities. Likewise, 95 percent of employment growth under the Current Trend alternative is in the cities while 5 percent is in existing unincorporated communities.

The housing type distribution under Alternative 1 is approximately 77% detached single family homes over multi-family housing which constitute 23% of residential land use. The distribution of new residential development reflects a 83/17 percent split of single-family housing relative to new multi-family housing. Transportation investments in Alternative 1 prioritize roadway rehabilitation and roadway system preservation. No new roadway capacity of state highway facilities is assumed under this Alternative and does not include new projects added to the 2022 RTP, just projects included in the 2018 RTP.

### 6.3.2 Impact Analysis

#### **a. Aesthetics**

Implementation of this alternative would result in fewer visual impacts as compared to the proposed Project, because many of the proposed new roadways and road extensions, would not be constructed. Nevertheless, many transportation projects would still be constructed under this alternative with the potential to impact scenic vistas on designated scenic highways, along with the gradual transformation toward a more urban/suburban character would occur in many parts of the KCAG region. Because this alternative would continue the 2018 SCS growth trends rather than emphasizing an infill approach to land use and housing, more development would occur outside of existing urban areas, which may result in greater impacts to scenic resources in the less developed portions of the KCAG region. Thus, impacts related to visual character would be significant and unavoidable for this alternative, as they would be with the proposed Project. The overall level of impact resulting from combined transportation improvement and land use projects would be similar when compared to the proposed Project with some impacts greater while other impacts less but would remain significant and unavoidable.

#### **b. Agriculture and Forestry Resources**

This alternative would result in fewer transportation projects being constructed, including roadway widening and other projects that could directly convert agricultural land to non-agricultural use. However, because this alternative would continue current growth trends rather than emphasizing an infill approach to land use and housing, more development would be expected to occur outside of existing urbanized areas, including within areas currently used for agricultural production. Given this land use trend and the extent of Important Farmland in the KCAG region, impacts related to converting Important Farmland to non-agricultural use, conflicts between urban and agricultural land uses, and conflicts with existing agricultural zoning and/or Williamson Act contracts would be worse under this alternative than for the proposed Project. The Kings County General Plan and County Zoning Ordinance do not specify any land in the KCAG region as designated or zoned for

forestland or timberland. The overall impact to agriculture resources resulting from the No Build Alternative would be greater than under the Project.

### **c. Air Quality**

Implementation of this alternative would result in reduced short-term air quality impacts from construction activity, as fewer transportation projects would be implemented and therefore less construction activity would occur. Because emissions are directly correlated with VMT, it can be reasonably assumed that emissions for all pollutants would be higher under the No Project Alternative compared to the proposed Project. The land use in the No Project Alternative would contribute to more new growth in undeveloped areas compared to that of the proposed RTP/SCS. Because the proposed Project would include more transit and active transportation projects, it would likely result in lower VMT than the No Project Alternative. Therefore, this alternative would result in higher emissions than the proposed 2022 RP/SCS. If this alternative were selected, improvements in the transportation infrastructure and infill development projects anticipated under the proposed Project would not occur. Higher VMT as a result of fewer alternative transportation projects under this alternative would result in higher air pollutant emissions.

The No Project Alternative would not concentrate population adjacent to transit and other transportation facilities that could result in more people being exposed to elevated health risks from TACs. Accordingly, impacts related to TAC exposure to sensitive receptors would be less under this alternative than under the proposed Project but would remain significant and unavoidable.

Overall air quality impacts would increase under this alternative when compared to the proposed Project because VMT would be higher under this alternative. Under this alternative, TACs would be reduced due to reduced development near transit and transportation facilities. However, long term operational impacts related exposure of sensitive receptors to substantial hazardous air pollutant concentrations and objectionable odors would remain significant and unavoidable, as they would be for the proposed Project.

### **d. Biological Resources**

Future transportation projects developed under this alternative would result in fewer impacts to biological resources, as fewer roadway extensions, widening projects, and creek crossings would occur under this alternative. However, because this alternative would continue current regional growth trends rather than emphasizing an infill approach to land use and housing, more development would be expected to occur outside of existing urbanized areas, including in areas providing habitat for special status plant and animal species. Overall impacts to special status plants, animals, wetlands and/or riparian habitat and wildlife movement outside developed urban areas would therefore be greater than under the proposed Project. Impacts would remain significant and unavoidable, as they would be for the proposed Project.

### **e. Cultural Resource**

As described in Section 4.5, *Cultural Resources*, some of the proposed Project projects may be located in proximity to historical resources or include repair or replacement of potentially historical structures (e.g., bridges). Because fewer transportation projects would be developed under the No Project Alternative, these impacts would be reduced. In addition, because less infill development would occur under this alternative, fewer impacts involving redevelopment or demolition of existing structures resulting from land use development would occur. Impacts to historic resources would

therefore be reduced when compared to the proposed Project. However, project specific impacts may still be significant, as they are for the proposed Project.

Implementation of this alternative would involve less ground disturbance associated with transportation improvements than would occur under the proposed Project. However, because more land use development could occur outside of existing urbanized areas, more ground disturbance would be expected to occur in previously undeveloped areas. As such, the potential for uncovering known or unknown archaeological resources would increase under this alternative for new development but decrease for transportation projects. The overall level of impact resulting from combined transportation improvement and land use projects would be similar when compared to the proposed Project assuming relative equalization between the historic and archaeological impacts between the proposed Project and Alternative 1. Impacts to archaeological resources would remain significant and unavoidable, as they are for the proposed Project.

#### **f. Energy**

Because this alternative would result in less construction of transportation infrastructure, overall energy use associated with construction activities would be reduced when compared to the proposed Project. However, this alternative would not include many of the capital improvements envisioned under the proposed Project that would improve transportation efficiency and reduce regional energy demand, such as active transportation projects. Energy use will increase over time as the result of regional socioeconomic (population and employment) growth, regardless of implementation of the proposed Project. The No Project Alternative would result in similar total and per capita energy use as compared to the proposed Project. As discussed in Section 4.6, *Energy*, the proposed Project would not result in inefficient, unnecessary, or wasteful direct or indirect consumption of energy, and would be consistent with applicable energy conservation policies. Because the No Project Alternative would be similar in both total and per capita energy use, impacts would be similar when compared to the proposed Project and impacts related to inefficient, unnecessary, or wasteful direct or indirect energy consumption would be less than significant, as they are for the proposed Project.

#### **g. Greenhouse Gas Emissions**

The No Project Alternative would result in fewer impacts associated with GHG emissions during construction activities as fewer transportation infrastructure projects would be constructed compared to the proposed Project. However, operation of the No Project Alternative would result in conflicts with applicable GHG reduction plans, policies, and regulations, resulting in a greater impact compared to the proposed project. The No Project Alternative would not include the promotion of sustainable modes of travel, clean vehicle technologies and traffic operational improvements within the KCAG region that would help improve GHG emissions levels from mobile sources substantially. The overall impact of this alternative would be greater than the proposed project and remain significant and unavoidable.

#### **h. Hazards and Hazardous Materials**

This alternative would result in fewer infrastructure projects being constructed, thereby reducing hazardous material use, storage, and transportation resulting from construction of those projects. However, the volume of hazardous materials being transported to support land use development in the region would remain the same, as land use development would continue to occur under this alternative. Because future development under the No Project Alternative would be subject to



applicable hazardous materials regulations and programs, impacts relating to routine transport, use, or disposal of hazardous materials; risk of upset and accident conditions; emissions within one-quarter mile of a school; and airport hazards would be less than significant, similar to the proposed Project. Overall hazards and hazardous materials impacts would be similar under this alternative as under the proposed Project.

### **i. Hydrology and Water Quality**

This alternative would result in fewer transportation infrastructure projects being constructed. Therefore, this alternative would reduce water quality impacts resulting from construction-related erosion and sedimentation and would generate less water demand for dust suppression activities for transportation projects. These impacts would remain less than significant pursuant to compliance with existing regulations, as they are for the proposed Project.

Because this alternative would continue current growth trends and not include new transit and active transportation project that would encourage an infill approach to land use and housing, more development would be expected to occur outside of existing urbanized areas. As such, impervious surfaces would be expected to increase under this alternative. Because projects would be located in less developed areas, runoff would include fewer urban pollutants such as heavy metals from auto emissions, oil and grease than projects under the proposed Project. However, because more development would occur in and therefore be adjacent to agricultural areas, runoff from those adjacent agricultural areas would contain more fertilizers and pesticides. While projects under this alternative may require more grading and vegetation removal, including in proximity to creeks, less in-fill development may result in less disturbance of soils on previously contaminated sites. As such, water quality in creeks may be more impacted, but water quality within urban areas may be less impacted. Because of these tradeoffs, the No Project Alternative would result in impacts to water quality that are overall comparable to the proposed Project with some impacts greater while other impacts would be less; water quality impacts would remain less than significant, pursuant to compliance with existing regulations, as they are for the proposed Project.

### **j. Land Use and Planning**

As with the Project, this alternative would not be anticipated to divide an established community. As noted in Section 4.12, *Land Use*, the proposed Project includes a list of planned and programmed projects including local and regional capital improvements that have been anticipated or accounted for in local general plans and regional, statewide, and federal transportation improvement programs. In addition, the objective of the 2022 RTP/SCS is to provide for a comprehensive transportation system of facilities and services that meets public need for the movement of people and goods, and that is consistent with the social, economic, and environmental goals and policies of the region. The No Project Alternative would not provide the same number of capital improvements anticipated within applicable general plans and transportation improvement programs, nor would it guide development to explicitly meet social, economic, and environmental goals and policies of the region as anticipated under the Project. Due to the more dispersed land use pattern, the amount of undeveloped land impacted would be greater under this alternative.

Although the No Project Alternative would continue existing land use patterns and trends, it would increase the severity of several environmental impacts, as discussed herein. As such, it could result in conflicts with State and local policies and regulations adopted for the purpose of avoiding or mitigating environmental effects. Because environmental effects would generally increase under

this alternative, the overall impacts on land use would be greater under this alternative when compared to the proposed Project but would remain less than significant.

### **k. Noise**

From a programmatic perspective, fewer transportation infrastructure projects would result in less construction activity under the No Project Alternative. This would reduce temporary noise impacts throughout the KCAG region. In addition, because the number of infill projects would be less under the No Project Alternative, construction-related noise impacts on adjacent sensitive receptors would also decrease. However, construction noise would still occur, and impacts would continue to be significant, as they are for the proposed Project.

Although the number of transportation projects would be reduced as compared to the proposed Project, increased traffic volumes resulting from regional growth would continue to occur. Whether noise impacts would be greater or less than those anticipated under the proposed Project remains dependent on site specific considerations that cannot currently be known. Regionally, the difference in VMT between the No Project Alternative and the proposed Project (184,947 difference in 2046 distributed across the entire network) is not enough to noticeably change overall noise levels in the KCAG region. Mobile source noise levels resulting from traffic would therefore be similar under the No Project Alternative when compared to the proposed Project and would remain significant and unavoidable.

Overall, noise-related impacts across the region would be similar to the proposed Project and would continue to be significant and unavoidable.

### **l. Transportation**

This alternative would not include projects under the proposed Project as listed above, including new intersection projects, new bikeway and pedestrian projects (active transportation), new transit projects, new intelligent transportation system/transportation demand management projects and aviation projects. Many of these projects are intended to address VMT, and in many cases would serve as mitigation measures to reduce potential impacts associated with planned long-term development.

Overall, VMT within the KCAG region would increase as a result of regional population growth. As discussed in Section 4.15, *Transportation*, daily VMT in the KCAG region in 2046 would be 5,652,866 without implementation of the proposed Project. This would be 184,947 more regional VMT than would be generated with implementation of the proposed Project. Thus, under the No Project Alternative, there would be more than 3 percent increase in daily VMT in 2046 compared to conditions with the proposed Project in 2046. This alternative has a total 2046 VMT that is 3.27 percent higher than the project.

Under the No Project Alternative, new transit projects to increase capacity would not be implemented. Without these types of projects, operation of public transit may be unreliable or fail to meet the frequency and performance standards established by the transit agencies in the KCAG region. Thus, compared to the proposed Project, the No Project Alternative would have a greater adverse impact on transit service in the KCAG region.

Overall, the No Project Alternative would result in increased daily VMT in the KCAG region compared to the proposed Project and have adverse impacts to transit service as projects to increase capacity would not be implemented. Thus, overall, impacts to transportation would be greater under the No Project Alternative and would remain significant and unavoidable.

### **m. Tribal Cultural Resources**

Implementation of this alternative would involve less ground disturbance associated with transportation improvements than would occur under the proposed Project. However, because more land use development could occur outside of existing urbanized areas, more ground disturbance would be expected to occur in previously undeveloped or open space areas. As such, the potential to disturb tribal cultural resources, including ancestral remains and sacred sites, would increase under this alternative. Future projects would be required to comply with AB 52, which may require formal tribal consultation. Compliance with this requirement would reduce impacts to a less than significant level, similar to the proposed Project. However, because of the increased potential to disturb tribal cultural resources from development outside of urbanized areas and no mitigation applicable to this alternative, the overall impact of the No Project Alternative would be greater than under the proposed Project.

### **n. Wildfire**

The No Project Alternative would allow more housing near wildlands and would increase the vulnerability of people and structures to wildland fire. Under the No Project Alternative land use development could occur outside of existing urbanized areas and extend into more wildland areas. This impact, which is significant and unavoidable for the proposed Project, would be greater under the No Project Alternative and would remain significant and unavoidable.

## **6.4 Alternative 2: Residential Infill**

### **6.4.1 Description**

Alternative 2 (Residential Infill) reflects efforts in several jurisdictions currently revising their zoning codes to accommodate new accessory dwelling units (AB 1584) and lot split (SB 9) flexibility (Avenal, Corcoran, the County are currently updating their zoning codes). This alternative reflects the potential market response for increases in Accessory Dwelling Unit (ADU) development and lot-split activity in established detached single family residential areas of Kings County. This alternative reflects a reallocation of single-family detached dwelling unit (SFDU) growth which will decrease the numbers of new SFDU assumed to be developed and increase the assumptions for ADUs within high probability neighborhoods within the cities and developed unincorporated areas of Kings County. This effectively focuses more residential development nearer to downtown cores in close proximity to jobs and services. It also limits development in new growth areas by limiting the need for new residential development in unincorporated communities. Established residential neighborhoods in this alternative will absorb approximately 1,522 ADU units by 2035 providing higher residential density relative to the Project.

The higher housing density comes from a greater reliance on ADUs and multi-family housing. The housing type distribution under Alternative B is approximately 74% detached single-family homes over multi-family housing which constitute 26% of residential land use. The distribution of new residential development reflects a 64/33 percent split of single family housing relative to new multi-family housing or ADUs.

Identical to the Project, transportation investments in Alternative 2 prioritize roadway rehabilitation and roadway system preservation. No new roadway capacity of state highway facilities is assumed. Transportation investment in Alternative 2 is dedicated to roadway maintenance with increased

funding for alternative transportation improvements such as transit and bicycle/pedestrian improvements.

## 6.4.2 Impact Analysis

### **a. Aesthetics**

Implementation of this alternative would not result in the modification of existing transportation facilities within existing highway, roadway, or railroad rights-of-way. Identical to the Project, transportation investments in Alternative 2 prioritize roadway rehabilitation and roadway system preservation. No new roadway capacity of state highway facilities is assumed. Transportation investment is dedicated to roadway maintenance with increased funding for alternative transportation improvements such as transit and bicycle/pedestrian improvements. Because this alternative would emphasize an infill approach to land use and housing, less development would occur outside of existing urban areas, which may result in less impacts to scenic resources in the less developed portions of the KCAG region. Thus, impacts related to visual character would be less than the Project, but would remain significant and unavoidable for this alternative, as it would be with the proposed Project. The overall level of impact resulting from transportation improvements but less from land use projects, impacts would be less when compared to the proposed Project with less impacts overall but would remain significant and unavoidable.

### **b. Agriculture and Forestry Resources**

Land use development under this alternative would further concentrate higher density housing in transit and urban areas. Impacts from land use projects to agricultural resources would be less than impacts under the proposed Project, as development would not extend into agricultural land to the same extent impacting 422 less acres of Prime farmland compared to the proposed project. This impact would be less than for the proposed Project but would remain significant and unavoidable because some development on Important Farmland could still occur.

### **c. Air Quality**

Under this alternative, the land use development pattern would have higher densities in urban areas near transit. As such, it is likely that more sensitive receptors would be exposed to health risks from TACs during construction or operation. As a result, exposure to substantial hazardous air pollutant concentrations and objectionable odors would remain significant and unavoidable, as under the proposed Project.

Because this alternative would reduce VMT, it can be assumed that transportation related emissions of air pollutants would be reduced when compared to the proposed RTP/SCS. Impacts, however, would remain significant and unavoidable, as under the proposed Project.

### **d. Biological Resources**

This alternative would further emphasize an infill approach to land use and housing. As with the proposed Project, development would primarily occur in already urbanized areas and would not result in development of areas that provide habitat for special status plant and animal species. Overall impacts to special status plants, animals, wetlands and/or riparian habitat and wildlife movement outside developed urban areas would therefore be reduced when compared the proposed Project. However, impacts would remain significant and unavoidable.

### **e. Cultural Resources**

As described in Section 4.5, *Cultural Resources*, some of the proposed Project projects may be located in proximity to historical resources or include repair or replacement of potentially historical structures (e.g., bridges). Under this alternative, all of the projects that would include repair or replacement of potentially historic resources would still occur. Impacts to historical resources would therefore be similar compared to the proposed Project. Land use development impacts under this alternative could be greater as there is greater potential to redevelop and demolish historic structures in urbanized areas.

Land use development would be at a denser rate requiring less ground disturbance activities than under the proposed Project. As such, the potential for uncovering known or unknown archaeological resources as a result of land use development would be reduced under this alternative. Although overall archaeological resources impacts would be reduced, the potential would remain for unearthing known or previously unidentified resources. As such, impacts would remain significant and unavoidable.

### **f. Energy**

Energy use will increase over time as the result of regional socioeconomic (population and employment) growth, regardless of implementation of the proposed Project. As discussed in Section 4.6, *Energy*, the proposed Project would not result in inefficient, unnecessary, or wasteful direct or indirect consumption of energy, and would be consistent with applicable energy conservation policies. Because this alternative would reduce vehicular travel as shown through reduced VMT, energy use would be reduced. Impacts related to inefficient, unnecessary, or wasteful direct or indirect energy consumption would be reduced when compared to the proposed Project and would similarly remain less than significant.

### **g. Greenhouse Gas Emissions**

Alternative 2 would likely result in fewer impacts associated with GHG emissions during construction activities for housing projects on undeveloped land as the scale of construction would be smaller for infill development. Additionally, operational GHG impacts would likely decrease because the increased housing density envisioned by this alternative would reduce the need for a personal vehicle and subsequently reduce VMT. This compact development would also increase the effectiveness of public transit and multimodal transportation networks, which could further reduce GHG emissions beyond the proposed Project. The extent to which this alternative would reduce GHG emissions cannot be feasibly quantified at this time. It is assumed that GHG impacts would be less as compared to the proposed Project, but impacts would remain significant and unavoidable, as they are for the proposed Project.

### **h. Hazards and Hazardous Materials**

This alternative would result in similar infrastructure projects being constructed, thereby having similar hazardous material use, storage and transportation resulting from construction of those projects. The volume of hazardous materials being transported to support land use development in the region would remain the same. Because Alternative 2 would be subject to existing regulations and programs, impacts relating to routine transport, use, or disposal of hazardous materials; risk of upset and accident conditions; emissions within one-quarter mile of a school; airport hazards; and interference with emergency response and evacuation plans would be less than significant, similar

to the proposed Project. Overall hazards and hazardous materials impacts would be similar under this alternative as under the proposed Project.

### **i. Hydrology and Water Quality**

This alternative would further emphasize an infill approach to land use and housing. As such, land development would result in fewer impervious surfaces than would be expected under the proposed Project. Nonetheless, infill development would generate runoff that would include urban pollutants such as heavy metals from auto emissions, oil, and grease, similar to projects under the proposed Project. Therefore, impacts to water quality would be less than those of the proposed Project because less development would occur that would result in additional impervious surfaces. Infill development would generate runoff that would include urban pollutants similar such as heavy metals from auto emissions, oil, and grease, similar to the proposed Project. Therefore, impacts to water quality would be similar to water quality impacts of the proposed Project.

Overall hydrology and water quality impacts would be similar under Alternative 2 as the proposed Project and impacts would remain significant and unavoidable.

### **j. Land Use**

As noted in Section 4.12, *Land Use*, the proposed Project includes a list of planned and programmed projects including local and regional capital improvements that have been anticipated or accounted for in local general plans and regional, statewide, and federal transportation improvement programs. Higher density housing in urbanized areas, primarily infill, would be anticipated to result in greater conflicts with local land use plans as this alternative would prioritize higher density beyond existing growth projections and would be inconsistent with growth projections of local General Plans and Specific Plans.

Development under this alternative would be concentrated in urbanized areas and would consist of primarily infill projects. As such, the land use pattern under this alternative would not result in the physical division of communities and impacts would be similar to the proposed Project.

Development under this alternative could conflict with land use plans, policies, and programs through the shifting of development into urban areas and corridors requiring additional mitigation. As such, implementation of this alternative would conflict with State and local policies and regulations adopted for the purpose of avoiding or mitigating environmental effects.

Under this alternative, impacts related to physically dividing an established community would be similar and impacts due to a conflict with any land use plan, policy, or regulation would be greater as stated above when compared to the proposed Project and would remain less than significant.

### **k. Noise**

Land use development under this alternative would occur predominantly in infill areas. As such, increased noise levels from increased transit onto development in the area would be greater than under the proposed Project and would result in more sensitive receivers exposed to greater sound levels. Increased ambient noise levels for sensitive receivers in these areas would be significant and unavoidable under this alternative, as it is for the proposed Project.

Noise would generally be the same as compared to the proposed Project, as cumulative regional traffic volumes would increase regardless of implementation of the proposed Project or this alternative. Whether noise impacts would be greater or less than those anticipated under the

proposed Project remains dependent on site specific considerations that cannot currently be known. Regionally, the difference in VMT between the proposed Project and Alternative 2 is not enough to noticeably change overall noise levels in the region. Mobile source noise levels resulting from traffic would be slightly less under Alternative 2 than the proposed Project as this alternative would result in less VMT.

Construction and operation of future development under this alternative could be located in close proximity to a public airport or private airstrip, as under the proposed Project, and would result in exposure of people residing or working in the area to excessive noise levels. As under the proposed Project, this alternative could result in the exposure of people residing or working near public airports or private airstrips to excessive noise levels. Mitigation measures identified in Section 4.13, *Noise*, would continue to be required under this alternative and impacts would be similar as under the proposed Project and would remain significant and unavoidable.

Overall, noise-related impacts across the region would be similar to the proposed Project and would continue to be significant and unavoidable.

## **I. Transportation**

This alternative incorporates less dispersed land use and development and a more compact growth footprint than the proposed Project, and increased use of regional transit service to generate an increase in regional transit ridership and corresponding decrease in VMT. Like Alternative 1, overall, VMT within the KCAG region would increase as a result of regional population growth. As discussed in Section 4.15, *Transportation*, daily VMT in the KCAG region in 2046 would be 5,652,866 without implementation of the proposed Project. This would be 184,947 or the same regional VMT as the proposed Project.

## **m. Tribal Cultural Resources**

Under this alternative, land use development would occur in infill areas to a greater extent than the proposed Project. Higher density development within already urbanized areas would reduce ground disturbance, as less disturbance would occur outside these areas. As such, the potential to disturb tribal cultural resources, including ancestral remains and sacred sites, would decrease under this alternative. Future projects would still be required to comply with AB 52, which would encourage tribal consultation with local California Native American tribes and require the identification of project specific substantial adverse effects on tribal cultural resources and appropriate project specific mitigation measures. If it is determined that a specific project would result a substantial adverse change in the significance of a tribal cultural resource, the impact would be significant. This significant impact would occur for projects under Alternative 2, as it would for the proposed Project. Therefore, impacts would be significant and unavoidable, as they would be for the proposed Project but would be reduced compared to the proposed Project due to the reduced level of ground disturbance outside of urban areas.

## **n. Wildfire**

The land use pattern under this alternative would construct higher density housing in urban areas which would reduce the amount of land development within and near wildland urban interface areas. However, there is still the potential for development under this alternative to result in exacerbated wildfire risk. Exacerbated wildfire risk would result in additional impacts related to flooding, landslides, and other associated hazards. Under this alternative, mitigation would still be

required; however, impacts would still be significant and unavoidable, as under the proposed Project.

The proposed Project would focus housing on infill areas and would decrease the vulnerability of people and structures to wildland fire by reducing development in urban wildland interface areas. While development of both land use and transportation structures under this alternative would still be required to comply with the California Fire Code, and mitigation would still be required, impacts under this alternative would remain significant and unavoidable as potential risks from wildfire cannot be feasibly reduced to less than significant. Overall, wildfire impacts would be reduced when compared to the proposed Project but would remain significant and unavoidable.

## 6.5 Alternative 3: Current Trend Land Use with Enhanced Transportation Investment

### 6.5.1 Description

Alternative 3 couples the Current Trend (Alternative 1) land use with enhanced investments in electromobility (i.e., ZEV charging infrastructure), broadband expansion (serving areas that currently have no or poor broadband access), active transportation infrastructure (advancing more projects identified in the active transportation plans) and passenger rail. Based on the financial analysis of projected revenues relative to the capital/operating costs of the RTP Tier 1 list of projects, these additional investments can be absorbed without exceeding the projected revenue line.

Transportation investments for Alternative C are more focused on alternative transportation and emerging trends in transportation such as electromobility and broadband expansion to reduce VMT and GHG emissions. The relative amount of investment in new roadway capacity is lessened.

### 6.5.2 Impact Analysis

#### **a. Aesthetics**

This Alternative is more focused on alternative transportation and emerging trends in transportation combined with continuing current growth trends. Because of the investment in bicycle and pedestrian facilities and the development of infrastructure of alternative vehicles, and similar growth trends as the Project, the overall level of impact resulting from combined transportation improvement and land use projects would be similar when compared to the proposed Project, with some impacts greater while other impacts less but would remain significant and unavoidable.

#### **b. Agriculture and Forestry Resources**

This alternative would result in fewer transportation projects being constructed, including roadway widening and other projects that could directly convert agricultural land to non-agricultural use. However, because this alternative would continue current growth trends rather than emphasizing an infill approach to land use and housing, more development would be expected to occur outside of existing urbanized areas, including within areas currently used for agricultural production. Although less road construction would occur, this land use trend and the extent of Important Farmland in the KCAG region would similarly result in converting Important Farmland to non-agricultural use, conflicts between urban and agricultural land uses, and conflicts with existing



agricultural zoning and/or Williamson Act contract. Impacts would be similar under this alternative compared to the Project.

The overall impact to agriculture resources resulting from the Alternative 3 would be similar than under the Project.

### **c. Air Quality**

Under this alternative, the land use development pattern would be similar to the Project but emphasizes mobility improvements like bicycle and pedestrian facilities along with broadband and electromobility. The construction from this alternative would result in exposure to substantial hazardous air pollutant concentrations and objectionable odors would remain significant and unavoidable, as under the Project.

Because this alternative would reduce VMT 63,381 compared to the Project, it can be assumed that transportation related emissions of air pollutants would be reduced when compared to the proposed RTP/SCS, with impacts from TACs similar to the project following the same land use pattern. Impacts would still remain significant and unavoidable, as under the proposed Project.

### **d. Biological Resources**

This alternative would result in fewer impacts to biological resources, as fewer roadway extensions, widening projects, and creek crossings would occur under this alternative. However, because this alternative would continue current regional growth trends rather than emphasizing an infill approach to land use and housing, more development would be expected to occur outside of existing urbanized areas, including in areas providing habitat for special status plant and animal species. Overall impacts to special status plants, animals, wetlands and/or riparian habitat and wildlife movement outside developed urban areas would therefore be greater than under the Project. Emphasis on transportation investment in the construction of bicycle and pedestrian facilities and the encouragement of alternative fuel would also mean impacts outside of existing urbanized areas could occur. Impacts would remain significant and unavoidable, as they would be for the proposed Project.

### **e. Cultural Resources**

As described in Section 4.5, *Cultural Resources*, some of the proposed Project projects may be located in proximity to historical resources or include repair or replacement of potentially historical structures (e.g., bridges). Fewer road projects would be developed under this alternative with an emphasis on electromobility and transit. This would also mean less infill development would occur under this alternative and fewer impacts involving redevelopment or demolition of existing structures from resulting land use development. Impacts to historical resources would therefore be reduced compared to the proposed Project. However, project specific impacts may still be significant, as they are for the proposed Project.

Implementation of this alternative would also involve less ground disturbance associated with transportation improvements than would occur under the proposed Project. However, because more land use development could occur outside of existing urbanized areas, more ground disturbance would be expected to occur in previously undeveloped areas. As such, the potential for uncovering known or unknown archaeological resources would increase under this alternative for new development but decrease for transportation projects. The overall level of impact resulting from combined transportation improvement and land use projects would be similar when compared

to the proposed Project assuming relative equalization between the historic and archaeological impacts between the proposed Project and Alternative 3. Impacts to archaeological resources would remain significant and unavoidable, as they are for the proposed Project.

#### **f. Energy**

Energy use for alternative 3 would result in less construction of transportation infrastructure. Overall energy use associated with construction activities would be reduced compared to the proposed Project. However, this alternative would include many of the capital improvements envisioned under the proposed Project that would improve transportation efficiency and reduce regional energy demand, such as active transportation projects. Energy use will increase over time as the result of regional socioeconomic (population and employment) growth, regardless of implementation of the proposed Project. Alternative 3 would result in similar total and per capita energy use as compared to the proposed Project. As discussed in Section 4.6, *Energy*, the proposed Project would not result in inefficient, unnecessary, or wasteful direct or indirect consumption of energy, and would be consistent with applicable energy conservation policies. Because Alternative 3 would be similar in both total and per capita energy use, impacts would be similar when compared to the proposed Project.

#### **g. Greenhouse Gas Emissions**

Alternative 3 results in fewer impacts associated with GHG emissions during construction activities as fewer road infrastructure projects would be constructed compared to the proposed Project and would include the promotion of sustainable modes of travel, clean vehicle technologies and traffic operational improvements within the KCAG region. Operation of this alternative would result in less conflicts with applicable GHG reduction plans, policies, and regulations, resulting in a lesser impact compared to the proposed project's infrastructure impacts. Alternative 3 would have the same land use pattern as the Project and therefore have similar impacts associated with less compact development and greater area of disturbance from development. The overall impact of this alternative would be slightly less than the proposed project but remain significant and unavoidable.

#### **h. Hazards and Hazardous Materials**

Fewer infrastructure projects would be constructed under Alternative 3, thereby reducing hazardous material use, storage, and transportation resulting from construction of those projects. However, the volume of hazardous materials being transported to support land use development in the region would remain the same, as land use development would continue to occur under this alternative similar to the Project. Because future development under this Alternative would be subject to applicable hazardous materials regulations and programs, impacts relating to routine transport, use, or disposal of hazardous materials; risk of upset and accident conditions; emissions within one-quarter mile of a school; and airport hazards would be less than significant, similar to the proposed Project. Overall hazards and hazardous materials impacts would be similar under this alternative as under the proposed Project.

#### **i. Hydrology and Water Quality**

Alternative 3 would result in fewer transportation infrastructure projects being constructed. Therefore, this alternative would reduce water quality impacts resulting from construction-related erosion and sedimentation and would generate less water demand for dust suppression activities

for transportation projects. These impacts would remain less than significant pursuant to compliance with existing regulations, as they are for the proposed Project.

Because this alternative would continue current growth trends and not include new transit and active transportation project that would encourage an infill approach to land use and housing, more development would be expected to occur outside of existing urbanized areas. As such, impervious surfaces would be expected to increase under this alternative. Because projects would be located in less developed areas, runoff would include fewer urban pollutants such as heavy metals from auto emissions, oil and grease than projects under the proposed Project. However, because more development would occur in and therefore be adjacent to agricultural areas, runoff from those adjacent agricultural areas would contain more fertilizers and pesticides. While projects under this alternative may require more grading and vegetation removal, including in proximity to creeks, less in-fill development may result in less disturbance of soils on previously contaminated sites. As such, water quality in creeks may be more impacted, but water quality within urban areas may be less impacted. Because of these tradeoffs, Alternative 3 would result in impacts to water quality that are overall comparable to the proposed Project with some impacts greater while other impacts would be less; water quality impacts would remain less than significant, pursuant to compliance with existing regulations, as they are for the proposed Project.

## **j. Land Use**

As with the Project, this alternative would not be anticipated to divide an established community. As noted in Section 4.12, *Land Use*, the Project includes a list of planned and programmed projects including local and regional capital improvements that have been anticipated or accounted for in local general plans and regional, statewide, and federal transportation improvement programs. In addition, the objective of the Project is to provide for a comprehensive transportation system of facilities and services that meets public need for the movement of people and goods, and that is consistent with the social, economic, and environmental goals and policies of the region. Alternative 3 would not provide the same number of capital improvements anticipated within applicable general plans and transportation improvement programs, nor would it guide development to explicitly meet social, economic, and environmental goals and policies of the region as anticipated under the Project. Due to the similarly dispersed land use pattern, the amount of undeveloped land impacted would be the same under this alternative. It would also encourage the construction of bicycle and pedestrian facilities and the development of infrastructure for and the implementation of alternative fuel vehicles and broadband investment.

Although Alternative 3 would mostly continue existing land use patterns and trends, it would be similar to the Project regarding impacts. As such, it would not result in conflicts with State and local policies and regulations adopted for the purpose of avoiding or mitigating environmental effects similar to the Project. Because environmental effects would generally be the same under this alternative, the overall impacts on land use would be similar under this alternative when compared to the Project but would remain less than significant.

## **k. Noise**

Because this Alternative would construct fewer transportation infrastructure projects resulting in less construction activity under this Alternative, less transportation infrastructure projects would reduce temporary noise impacts throughout the KCAG region. In addition, because the number of infill projects would be less under this alternative, construction-related noise impacts on adjacent

sensitive receptors would also decrease. However, construction noise would still occur, and impacts would continue to be significant, as they are for the proposed Project.

Although the number of transportation projects would be reduced as compared to the Project, increased traffic volumes resulting from regional growth would continue to occur. Whether noise impacts would be greater or less than those anticipated under the Project remains dependent on site specific considerations that cannot currently be known. Regionally, the difference in VMT between this alternative and the proposed Project (63,381 difference in 2046 distributed across the entire network) is not enough to noticeably change overall noise levels in the KCAG region. Mobile source noise levels resulting from traffic would therefore be similar under Alternative 3 when compared to the proposed Project and would remain significant and unavoidable.

## **I. Transportation**

This alternative emphasizes transit and ridesharing and also encourages fuel efficient vehicles and the construction of bicycle and pedestrian facilities. Alternative 3 would generate 63,381 less regional VMT in 2046 compared to regional VMT for the Project. – a decrease of VMT reduction of 248,328, or 4.5 percent. This decrease in VMT would be better than the Project. Overall, this alternative still increases regional and per capita VMT above adopted thresholds, therefore, impacts related to transportation would remain significant but less than the Project.

### **m. Tribal Cultural Resources**

Implementation of Alternative 3 would involve less ground disturbance associated with transportation improvements than would occur under the proposed Project. However, because more land use development could occur outside of existing urbanized areas, more ground disturbance would be expected to occur in previously undeveloped or open space areas. As such, the potential to disturb tribal cultural resources, including ancestral remains and sacred sites, would increase under this alternative. Future projects would be required to comply with AB 52, which may require formal tribal consultation. Compliance with this requirement would reduce impacts to a less than significant level, similar to the proposed Project. However, because of the increased potential to disturb tribal cultural resources from development outside of urbanized areas and no mitigation applicable to this alternative, the overall impact of this alternative would be greater than under the proposed Project and be significant and unavoidable.

### **n. Wildfire**

This Alternative would allow a similar amount of housing near wildlands and would increase the vulnerability of people and structures to wildland fire. Under this Alternative, land use development could occur outside of existing urbanized areas and extend into more wildland areas. This impact, which is significant and unavoidable for the Project, would be similar under this Alternative and would remain significant and unavoidable.

## **6.6 Alternative 4: Residential Infill with Enhanced Transportation Investment**

### **6.6.1 Description**

Alternative 4 couples the Residential Infill described in Alternative 2. This includes a mix of infill development in downtown areas encouraging transit with some development in new growth areas

but still within urban growth lines. with the same enhanced transportation investments described for Alternative C. This includes the same enhanced investments in electromobility (i.e., ZEV charging infrastructure), broadband expansion (serving areas that currently have no or poor broadband access), plus active transportation infrastructure (advancing more projects identified in the active transportation plans) and passenger rail.

## 6.6.2 Impact Analysis

### a. Aesthetics

Implementation of this alternative would result in residential infill development and the modification of existing transportation facilities within existing highway, roadway, or railroad rights-of-way. Many of the proposed projects are at-grade with the surrounding environment. As such, most of the road and highway improvements are not likely to result in massive obstructions or blockages of surrounding views nor modify or substantially alter existing scenic resources viewed from a scenic vista. This Alternative is intended to encourage infill development and changes to both land use patterns and transportation improvements. Thus, impacts related to visual character would be significant and unavoidable for this alternative, as they would be with the Project. The overall level of impact resulting from combined transportation improvement and land use projects would be similar when compared to the proposed Project with some impacts greater while other impacts less but would remain significant and unavoidable.

### b. Agriculture and Forestry Resources

Emphasis on residential infill land use development under this alternative would mean higher density housing would be concentrated in transit and urban areas. Impacts from land use projects to agricultural resources would be less than impacts under the proposed Project, as development would not extend into agricultural land to the same extent impacting 422 less acres of Prime farmland compared to the proposed project. This impact would be less than for the proposed Project but would remain significant and unavoidable because some development on Important Farmland could still occur.

### c. Air Quality

Under Alternative 4, the land use development pattern would have higher densities in urban areas near transit. As such, it is likely that more sensitive receptors would be exposed to health risks from TACs during construction or operation. As a result, exposure to substantial hazardous air pollutant concentrations and objectionable odors would remain significant and unavoidable, as under the proposed Project.

Because this alternative would reduce VMT, it can be assumed that transportation related emissions of air pollutants would be reduced when compared to the proposed RTP/SCS. Impacts, however, would remain significant and unavoidable, as under the proposed Project.

### d. Biological Resources

This alternative would further emphasize an infill approach to land use and housing. As with the proposed Project, development would primarily occur in already urbanized areas and would not result in development of areas that provide habitat for special status plant and animal species. Overall impacts to special status plants, animals, wetlands and/or riparian habitat and wildlife

movement outside developed urban areas would therefore be reduced when compared the proposed Project. However, impacts would remain significant and unavoidable.

#### **e. Cultural Resources**

As described in Section 4.5, *Cultural Resources*, some of the proposed Project projects may be located in proximity to historical resources or include repair or replacement of potentially historical structures (e.g., bridges). Under this alternative, all of the projects that would include repair or replacement of potentially historic resources would still occur. Land use development impacts under this alternative could be greater as there is greater potential to redevelop and demolish historic structures in urbanized areas.

Land use development would be at a denser rate requiring less ground disturbance activities than under the proposed Project. As such, the potential for uncovering known or unknown archaeological resources as a result of land use development would be reduced under this alternative. Although overall archaeological resources impacts would be reduced, the potential would remain for unearthing known or previously unidentified resources. As such, impacts would remain significant and unavoidable. The overall level of impact resulting from combined transportation improvement and land use projects would be similar when compared to the proposed Project assuming relative equalization between the historic and archaeologic impacts between the proposed Project and Alternative 4. Impacts to archaeological resources would remain significant and unavoidable, as they are for the proposed Project.

#### **f. Energy**

Energy use will increase over time as the result of regional socioeconomic (population and employment) growth, regardless of implementation of the proposed Project. As discussed in Section 4.6, *Energy*, the proposed Project would not result in inefficient, unnecessary, or wasteful direct or indirect consumption of energy, and would be consistent with applicable energy conservation policies. Because this alternative would reduce vehicular travel as shown through reduced VMT, energy use would be reduced. Impacts related to inefficient, unnecessary, or wasteful direct or indirect energy consumption would be reduced when compared to the proposed Project and would similarly remain less than significant.

#### **g. Greenhouse Gas Emissions**

Alternative 4 would likely result in fewer impacts associated with GHG emissions during construction activities for transit projects as the scale of construction would be smaller. Additionally, operational GHG impacts would likely decrease because the increased housing density envisioned by this alternative would reduce the need for a personal vehicle and subsequently reduce VMT. This compact development would also increase the effectiveness of public transit and multimodal transportation networks, which could further reduce GHG emissions beyond the proposed Project. The extent to which this alternative would reduce GHG emissions cannot be feasibly quantified at this time. It is assumed that GHG impacts would be less as compared to the proposed Project, but impacts would remain significant and unavoidable, as they are for the proposed Project.

#### **h. Hazards and Hazardous Materials**

Implementing this alternative would result in similar infrastructure projects being constructed, thereby having similar hazardous material use, storage and transportation resulting from

construction of those projects. The volume of hazardous materials being transported to support land use development in the region would remain the same. Because Alternative 4 would be subject to existing regulations and programs, impacts relating to routine transport, use, or disposal of hazardous materials; risk of upset and accident conditions; emissions within one-quarter mile of a school; airport hazards; and interference with emergency response and evacuation plans would be less than significant, similar to the proposed Project. Overall hazards and hazardous materials impacts would be similar under this alternative as under the proposed Project.

### **i. Hydrology and Water Quality**

Alternative 4 would emphasize an infill approach to land use and housing. As such, land development would result in fewer impervious surfaces than would be expected under the proposed Project. Nonetheless, infill development would generate runoff that would include urban pollutants such as heavy metals from auto emissions, oil, and grease, similar to projects under the proposed Project. Therefore, impacts to water quality would be less than those of the proposed Project because less development would occur that would result in additional impervious surfaces. Infill development would generate runoff that would include urban pollutants similar such as heavy metals from auto emissions, oil, and grease, similar to the proposed Project. Therefore, impacts to water quality would be similar to water quality impacts of the proposed Project.

Overall hydrology and water quality impacts would be similar under Alternative 4 as the proposed Project and impacts would remain significant and unavoidable.

### **j. Land Use**

As noted in Section 4.12, *Land Use*, the proposed Project includes a list of planned and programmed projects including local and regional capital improvements that have been anticipated or accounted for in local general plans and regional, statewide, and federal transportation improvement programs. Higher density housing in urbanized areas, primarily infill, would be anticipated to result in greater conflicts with local land use plans as this alternative would prioritize higher density beyond existing growth projections and would be inconsistent with growth projections of local General Plans and Specific Plans.

Development under this alternative would be concentrated in urbanized areas and would consist of primarily infill projects. As such, the land use pattern under this alternative would not result in the physical division of communities and impacts would be similar to the proposed Project.

Development under this alternative could conflict with land use plans, policies, and programs through the shifting of development into urban areas and corridors requiring additional mitigation. As such, implementation of this alternative would conflict with State and local policies and regulations adopted for the purpose of avoiding or mitigating environmental effects.

Under Alternative 4, impacts related to physically dividing an established community would be similar and impacts due to a conflict with any land use plan, policy, or regulation would be greater as stated above when compared to the proposed Project and would remain less than significant.

### **k. Noise**

The land use development under Alternative 4 would occur predominantly in infill areas. As such, increased noise levels from increased transit onto development in the area would be greater than under the proposed Project and would result in more sensitive receivers exposed to greater sound

levels. Increased ambient noise levels for sensitive receivers in these areas would be significant and unavoidable under this alternative, as it is for the proposed Project.

Noise would generally be the same as compared to the proposed Project, as cumulative regional traffic volumes would increase regardless of implementation of the proposed Project or this alternative. Whether noise impacts would be greater or less than those anticipated under the proposed Project remains dependent on site specific considerations that cannot currently be known. Regionally, the difference in VMT between the proposed Project and Alternative 4 is not enough to noticeably change overall noise levels in the region. Mobile source noise levels resulting from traffic would be slightly less under Alternative 4 than the proposed Project as this alternative would result in less VMT.

Construction and operation of future development under this alternative could be located in close proximity to a public airport or private airstrip, as under the proposed Project, and would result in exposure of people residing or working in the area to excessive noise levels. As under the proposed Project, this alternative could result in the exposure of people residing or working near public airports or private airstrips to excessive noise levels. Mitigation measures identified in Section 4.13, *Noise*, would continue to be required under this alternative and impacts would be similar as under the proposed Project and would remain significant and unavoidable.

Overall, noise-related impacts across the region would be similar to the proposed Project and would continue to be significant and unavoidable.

## **I. Transportation**

This alternative emphasizes transit and ridesharing and encourages fuel efficient vehicles and the construction of bicycle and pedestrian facilities. Alternative 4 would generate 63,381 less regional VMT in 2046 compared to 5, the proposed Project. VMT proposed in this Alternative would be better than the proposed Project. Overall, Alternative 4 decreases regional and per capita VMT, but would still increase overall VMT. Impacts related to transportation would be less under Alternative 4 but remain significant and unavoidable as under the proposed Project.

## **m. Tribal Cultural Resources**

Under Alternative 4, land use development would occur in infill areas to a greater extent than the proposed Project. Higher density development within already urbanized areas would reduce ground disturbance, as less disturbance would occur outside these areas. As such, the potential to disturb tribal cultural resources, including ancestral remains and sacred sites, would decrease under Alternative 4. Future projects would still be required to comply with AB 52, which would encourage tribal consultation with local California Native American tribes and require the identification of project specific substantial adverse effects on tribal cultural resources and appropriate project specific mitigation measures. If it is determined that a specific project would result a substantial adverse change in the significance of a tribal cultural resource, the impact would be significant. This significant impact would occur for projects under Alternative 4, as it would for the proposed Project. Therefore, impacts would be significant and unavoidable, as they would be for the proposed Project but would be reduced compared to the proposed Project due to the reduced level of ground disturbance outside of urban areas.



## n. Wildfire

The land use pattern under Alternative 4 would construct higher density housing in urban areas which would reduce the amount of land development within and near wildland urban interface areas. However, there is still the potential for development under this alternative to result in exacerbated wildfire risk. Exacerbated wildfire risk would result in additional impacts related to flooding, landslides, and other associated hazards. Under this alternative, impacts would be less but mitigation would still be required and impacts would still be significant and unavoidable, as under the proposed Project.

The proposed Project would focus housing on infill areas and would decrease the vulnerability of people and structures to wildland fire by reducing development in urban wildland interface areas. While development of both land use and transportation structures under this alternative would still be required to comply with the California Fire Code, and mitigation would still be required, impacts under this alternative would remain significant and unavoidable as potential risks from wildfire cannot be feasibly reduced to less than significant. Overall, wildfire impacts would be reduced when compared to the proposed Project but would remain significant and unavoidable.

## 6.7 Environmentally Superior Alternative

*State CEQA Guidelines* Section 15126.6 requires that an EIR identify the environmentally superior alternative among the alternatives analyzed. Section 15126.6(d)(2) states that if the No Project Alternative is identified as the environmentally superior alternative, the EIR shall also identify an environmentally superior alternative from among the other alternatives analyzed. This section compares the impacts of the four alternatives under consideration to those of the proposed Project in compliance with the *State CEQA Guidelines*.

Table 6-1 shows whether each alternative would have impacts that are more positive or negative compared to the proposed Project for each of the issue areas studied.

Based on the above analysis and summary in Table 6-1, Alternative 4 is the environmentally superior alternative, assuming all environmental issue areas are weighted equally. Under Alternative 4, land use patterns would be concentrated in residential infill areas and have enhanced transportation investments to reduce VMT and GHG emissions. Alternative 4 would have less impacts to air quality, biology, energy, agriculture and forestry, GHG emissions, transportation (reduced VMT), and wildfire.

The No Build Alternative (Alternative 1) would have a similar land use pattern compared to the proposed Project resulting in similar impacts, but would not include additional projects that have been added to the 2022 RTP (not included in the 2018 RTP). These would include additional transit and active transportation projects that would assist in reducing VMT and GHG emissions and meeting State Climate goals. As shown in Table 6-1, Alternative 1 would result in greater impacts than the proposed Project in the issue areas of agriculture and forestry, GHG, land use, transportation, tribal cultural resources, and wildfires.

The proposed Project was selected over Alternative 4 as overall, it was determined to better meet the identified objectives developed by KCAG in preparing the RTP/SCS. The proposed project better serves regional goals, objectives, policies and plans of the County and the cities in the KCAG region, better meets community and regional transportation needs while still promoting energy efficient, environmentally sound modes of travel and facilities and services, and promotes equity and efficiency in the distribution of transportation projects and services

**Table 6-1 Impact Comparison of Alternatives**

Issue	Proposed Project Impact Classification	Alternative 1: No Build	Alternative 2: Residential Infill	Alternative 3: Current Trend Land Use with Enhanced Transportation Investment	Alternative 4: Residential Infill with Enhanced Transportation Investment
Aesthetics	SU	=	+	=	=
Air Quality	SU	=	=	+	+
Biology	SU	=	+	+	+
Cultural Resources	SU	=	=	=	=
Energy	LTS	=	-	=	+
Agriculture and Forestry	SU	-	+	=	+
GHG and Climate Change	SU	-	+	+	+
Hazards and Hazardous Materials	SU	=	=	=	=
Hydrology and Water Quality	LTS	=	=	=	=
Land Use Planning	LTS	-	=	=	=
Noise	SU	=	=	=	=
Transportation	LTS	-	=	+	+
Tribal and Cultural Resources	SU	-	+	-	+
Wildfire	SU	-	+	=	+
+ Superior to the proposed project (reduced level of impact)					
- Inferior to the proposed project (increased level of impact)					
= Similar level of impact to the proposed project					

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