2022 Regional Transportation Plan/ Sustainable Communities Strategy

Draft Program Environmental Impact Report
Executive Summary
SCH# 20211100331

prepared by

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prepared with the assistance of

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July 2022

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Executive Summary

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)[1] 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 cites 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
Aesthetic and Visual Resources		
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 a state scenic highway. Impacts would be significant and unavoidable.	**AES-1(a) Discouragement of Architectural Features that Block Scenic Views.** The implementing agency shall, or can and should, design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Setbacks and acoustical design of adjacent structures shall be preferentially used as mitigation for potential noise impacts arising from increased traffic volumes associated with adjacent land development. The use of sound walls, or any other architectural features that could block views from the scenic highways or other view corridors, shall be discouraged to the extent possible. Where use of sound walls is found to be necessary, walls shall incorporate offsets, accents, and landscaping to prevent monotony. In addition, sound walls shall be complementary in color and texture to surrounding natural features. **AES-1(b) Tree Protection and Replacement.** The implementing agency for new roadways, extensions, and widenings of existing roadways, trails and facility improvements shall, or can and should, avoid the removal of existing mature trees to the extent possible consistent with adopted local City and County policies as applicable. The implementing agency of a particular 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.	Significant and Unavoidable
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.	**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);	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	▪ 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	
Impact AES-3. 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.	**AES-3(a) Roadway and Project Lighting.** The implementing shall, or can and should, minimize roadway lighting to the extent possible, consistent with safety and security objectives, and shall not exceed the minimum height requirements of the local jurisdiction in which the project is proposed. This may be accomplished through the use of back shields, hoods, low intensity lighting, and using as few lights as necessary to achieve the goals of the project. As part of planning, design, and engineering for projects, project sponsors shall ensure that projects proposed near light-sensitive uses avoid substantial spillover lighting. Potential design measures include, but are not limited to, the following: ▪ Lighting shall consist of cutoff-type fixtures that cast low-angle illumination to minimize incidental spillover of light into adjacent properties and undeveloped open space. Fixtures that project light upward or horizontally shall not be used. ▪ Lighting shall be directed away from habitat and open space areas adjacent to the project site. ▪ Light mountings shall be downcast, and the height of the poles minimized to reduce potential for backscatter into the nighttime sky and incidental spillover of light onto adjacent private properties and undeveloped open space. Light poles will be 20 feet high or shorter. Luminary mountings shall have non-glare finishes. ▪ Exterior lighting features shall be directed downward and shielded in order to confine light to the boundaries of the subject project. Where more intense lighting is necessary for safety purposes, the design shall include landscaping to block light from sensitive land uses, such as residences. **AES-3(b) Glare Reduction Measures.** Implementing agencies shall, or can and should, minimize and control glare from transportation and infill development projects near glare-sensitive uses through the adoption of project design features such as: ▪ Planting trees along transportation corridors to reduce glare from the sun; ▪ Creating tree wells in existing sidewalks; ▪ Adding trees in new curb extensions and traffic circles; ▪ Adding trees to public parks and greenways; ▪ Landscaping off-street parking areas, loading areas, and service areas; ▪ Limiting the use of reflective materials, such as metal; ▪ Using non-reflective material, such as paint, vegetative screening, matte finish coatings, and masonry; ▪ Screening parking areas by using vegetation or trees; ▪ Using low-reflective glass; and	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	▪ 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.	
Air Quality		
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.	None required.	Less than Significant
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.	**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	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	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.	
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.	**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, bike lanes, bicycle-friendly intersections, and bicycle parking and storage facilities.	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	▪ 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).	
Impact AQ-4. 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.	T-2(a) – See Impact T-2.	Significant and Unavoidable
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.	**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_{10} and $PM_{2.5}$) impacts and their health risks shall be evaluated for individual projects. Localized particulate matter concentrations shall be estimated using procedures and guidelines consistent with U.S. EPA 2015's *Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*. If required based on the project-level hotspot analysis, project-specific mitigation shall be added to the project design concept or scope to ensure that local particulate (PM_{10} and $PM_{2.5}$) emissions would not reach a concentration at any location that would cause estimated cancer risk to exceed the SJVAPCD threshold of 20 in one million. Per 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	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	particulate matter, including roadways experiencing significant vehicle delays. The appropriate measures shall include one or more of the following methods, as appliable and as determined by a qualified professional. The implementing agency shall incorporate health risk reduction measures based on an analysis of individual sites and project circumstances. These measures may include: ▪ Avoid siting new sensitive land uses within 500 feet of a freeway or railway. ▪ Require development projects for new sensitive land uses to be designed to minimize exposure to roadway-related pollutants to the maximum extent feasible through inclusion of design components including air filtration and physical barriers. ▪ Do not locate sensitive receptors near the entry and exit points of a distribution center. ▪ Locate structures and outdoor living areas for sensitive uses as far as possible from the source of emissions. As feasible, locate doors, outdoor living areas and air intake vents primarily on the side of the building away from nearby high volume roadways or other pollution source. As feasible, incorporate dense, tiered vegetation that regains foliage year-round and has a long life span between the pollution source and the project. ▪ Maintain a 50-foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year). ▪ Install, operate, and maintain in good working order a central heating and ventilation (HV) system or other air take system in the building, or in each individual residential unit, that meets the efficiency standard of the MERV 13. The HV system should include the following features: ▫ Installation of a high efficiency filter and/or carbon filter-to-filter particulates and other chemical matter from entering the building. ▫ Use of either HEPA filters or ASHRAE 85 percent supply filters. ▫ Completion of ongoing maintenance. ▪ Retain a qualified HV consultant or Home Energy Rating Systems rater during the design phase of the project to locate the HV system based on exposure modeling from the mobile and/or stationary pollutant sources. ▪ Maintain positive pressure within the building. ▪ Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air. ▪ Achieve a performance standard of at least four air exchanges per hour of recirculation. Achieve a performance standard of 0.25 air exchanges per hour of unfiltered infiltration if the building is not positively pressurized. ▪ Require project owners to provide a disclosure statement to occupants and buyers summarizing technical studies that reflect health concerns about exposure to highway/freeway exhaust emissions.	
Impact AQ-6. Construction of the proposed transportation improvements and land use projects envisioned by the 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.		
Agriculture and Forestry		
Impact AG-1. 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.	**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.).	Significant and Unavoidable
Impact AG-2. 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
Biological Resources		
Impact BIO-1. 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	**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	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
would be significant and unavoidable.	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];	

Impact	Mitigation Measure(s)	Impact Finding
	▪ 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 Animal 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 Animal 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	

Impact	Mitigation Measure(s)	Impact Finding
	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.	

Impact	Mitigation Measure(s)	Impact Finding
	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. ▪ 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.	

Impact	Mitigation Measure(s)	Impact Finding

- 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

Impact	Mitigation Measure(s)	Impact Finding
	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.	
Impact BIO-2. 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.	**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	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	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. **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.	

Impact	Mitigation Measure(s)	Impact Finding
	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.	
Impact BIO-3. 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.	**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).	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	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.	
Impact BIO-4. 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
Impact BIO-5. 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.		
Cultural Resources		
Impact CR-1. 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.	**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	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	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.	
Impact CR-2. 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.	**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.	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
Impact CR-3. 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
Energy		
Impact E-1. 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
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.	None required.	Less than Significant

Impact	Mitigation Measure(s)	Impact Finding
Geology and Soils		
Impact GEO-1. 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
Impact GEO-2. 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
Impact GEO-3. 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.		
Impact GEO-4. 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.	**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.	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	▪ **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	
Greenhouse Gas Emissions and Climate Change		
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.	**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; ▪ 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 ▪ Incentives for construction workers to carpool and/or use electric vehicles to commute to and from the project site.	Significant and Unavoidable
Impact GHG-2. Proposed transportation improvements and land use projects envisioned by the proposed 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	**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	Significant and unavoidable

Impact	Mitigation Measure(s)	Impact Finding
significant impact on the environment. Impacts would be significant and unavoidable.	▪ 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 no-residential uses to reduce vehicle queuing and improve the pedestrian environment	
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_2 emission reduction targets of 16 percent by 2035 from 2005 levels. Impacts would be less than significant.	None required.	Less than Significant
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.	**GHG-4(a) 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	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	▪ 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	
Hazards and Hazardous Materials		
Impact HAZ-1. 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
Impact HAZ-2. 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.		
Impact HAZ-3. 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.	**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.	Significant and Unavoidable
Impact HAZ-4. 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
Hydrology and Water Quality		
Impact HYD-1. 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
or waste discharge requirements, or otherwise substantially degrade surface or ground water quality. Impacts would be less than significant.		
Impact HYD-2. 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.	**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.	Significant and Unavoidable
Impact HYD-3. 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	None required.	Less than Significant

Impact	Mitigation Measure(s)	Impact Finding
runoff. Impacts would be less than significant.		
Impact HYD-4. 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
Impact HYD-5. 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.
Land Use & Planning		
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.	None required.	Less than Significant
Impact LU-2. 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
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.		
Noise		
Impact N-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.	**N-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	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	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.	
Impact N-2. 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.	**N-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	Significant and Unavoidable

<table>
<tr><th>Impact</th><th>Mitigation Measure(s)</th><th>Impact Finding</th></tr>
<tr><td></td><td>repaving. The effectiveness of noise reduction measures shall be monitored by taking noise measurements and installing adaptive mitigation measures to achieve applicable standards.</td><td></td></tr>
<tr><td>Impact N-3. 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.</td><td>N-3(a) Vibration Mitigation for Construction of Transportation Projects. 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.
Caltrans Vibration Damage Potential Threshold Criteria
<table><tr><th></th><th colspan="2">Maximum PPV (in/sec)</th></tr><tr><th>Structure and Condition</th><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><tr><td colspan="3">Source: Transportation and Construction Vibration Guidance Manual (2020b)</td></tr></table>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</td><td>Significant and Unavoidable</td></tr>
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Impact	Mitigation Measure(s)	Impact Finding
	feasible, in consideration of geotechnical and structural requirements and conditions as defined as part of the geotechnical testing, if testing was feasible. ▪ Use cushion blocks to dampen noise from pile driving. ▪ Phase operations of construction equipment to avoid simultaneous vibration sources **N-3(b) Vibration Mitigation for Operation of Transportation Projects.** Where local vibration and groundborne noise standards do not apply, implementing agencies of 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	
Impact N-4. 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.	**N-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.	Significant and Unavoidable
Impact N-5. Transportation improvements and land use projects envisioned by the	**N-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	Significant and Unavoidable

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.	
Transportation		
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.	None required.	Less than Significant
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 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.	**T-2(a) Regional VMT Reduction Programs.** 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: ▪ 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	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	▪ 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	
Impact T-3. 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
Impact T-4. 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
Tribal Cultural Resources		
Impact TCR-1. Transportation projects and the land use scenario envisioned in the	**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	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.	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.	
Wildfire		
Impact WF-1. 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.	**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 wildlife 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	Significant and Unavoidable

Impact	Mitigation Measure(s)	Impact Finding
	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	

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