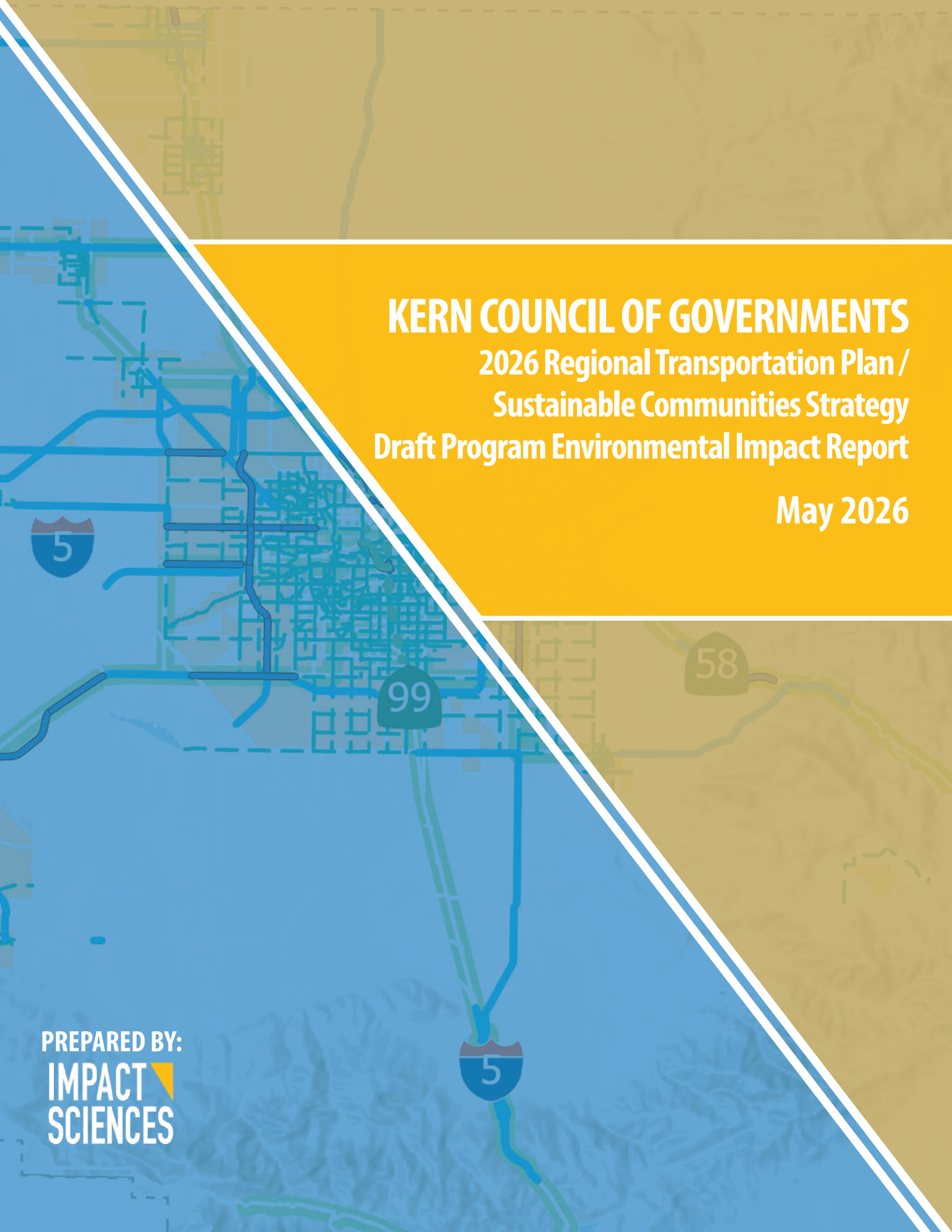


KERN COUNCIL OF GOVERNMENTS

2026 Regional Transportation Plan / Sustainable Communities Strategy Draft Program Environmental Impact Report

May 2026

PREPARED BY:
IMPACT SCIENCES

KERN COUNCIL OF GOVERNMENTS
2026 REGIONAL TRANSPORTATION PLAN

Draft Program Environmental Impact Report

Prepared for:

Kern Council of Governments
1401 19th Street, Suite #300
Bakersfield, California 93301

Prepared by:

Impact Sciences, Inc.
445 S. Figueroa Street, Suite 2550
Los Angeles, California 90071

May 2026

TABLE OF CONTENTS

Section			Page
1.0	Introduction		1.0-1
2.0	Executive Summary		2.0-1
3.0	Project Description		3.0-1
4.0	Environmental Impact Analysis		4.0-1
	4.1	Aesthetics	4.1-1
		4.1.1 Environmental Setting	4.1-1
		4.1.2 Regulatory Framework	4.1-10
		4.1.3 Environmental Impacts	4.1-19
		4.1.4 Cumulative Impacts	4.1-33
	4.2	Agriculture and Forestry Resources	4.2-1
		4.2.1 Environmental Setting	4.2-1
		4.2.2 Regulatory Framework	4.2-18
		4.2.3 Environmental Impacts	4.2-33
		4.2.4 Cumulative Impacts	4.2-56
	4.3	Air Quality	4.3-1
		4.3.1 Environmental Setting	4.3-1
		4.3.2 Regulatory Framework	4.3-18
		4.3.3 Environmental Impacts	4.3-33
		4.3.4 Cumulative Impacts	4.3-68
	4.4	Biological Resources	4.4-1
		4.4.1 Environmental Setting	4.4-1
		4.4.2 Regulatory Framework	4.4-32
		4.4.3 Environmental Impacts	4.4-44
		4.4.4 Cumulative Impacts	4.4-68
	4.5	Cultural and Tribal Resources	4.5-1
		4.5.1 Environmental Setting	4.5-1
		4.5.2 Regulatory Framework	4.5-9
		4.5.3 Environmental Impacts	4.5-21
		4.5.4 Cumulative Impacts	4.5-37
	4.6	Energy	4.6-1
		4.6.1 Environmental Setting	4.6-1
		4.6.2 Regulatory Framework	4.6-20
		4.6.3 Environmental Impacts	4.6-32
		4.6.4 Cumulative Impacts	4.6-41
	4.7	Geology and Soils	4.7-1
		4.7.1 Environmental Setting	4.7-1
		4.7.2 Regulatory Framework	4.7-18
		4.7.3 Environmental Impacts	4.7-26
		4.7.4 Cumulative Impacts	4.7-41
	4.8	Greenhouse Gases	4.8-1
		4.8.1 Environmental Setting	4.8-1
		4.8.2 Regulatory Framework	4.8-10

TABLE OF CONTENTS (continued)

Section		Page
	4.8.3 Environmental Impacts	4.8-43
	4.8.4 Cumulative Impacts	4.8-60
4.9	Hazards and Hazardous Materials	4.9-1
	4.9.1 Environmental Setting	4.9-1
	4.9.2 Regulatory Framework	4.9-10
	4.9.3 Environmental Impacts	4.8-20
	4.9.4 Cumulative Impacts	4.9-35
4.10	Hydrology and Water Resources	4.10-1
	4.10.1 Environmental Setting	4.10-1
	4.10.2 Regulatory Framework	4.10-26
	4.10.3 Environmental Impacts	4.10-42
	4.10.4 Cumulative Impacts	4.10-64
4.11	Land Use and Planning	4.11-1
	4.11.1 Environmental Setting	4.11-1
	4.11.2 Regulatory Framework	4.11-11
	4.11.3 Environmental Impacts	4.11-29
	4.11.4 Cumulative Impacts	4.11-37
4.12	Mineral Resources	4.12-1
	4.12.1 Environmental Setting	4.12-1
	4.12.2 Regulatory Framework	4.12-6
	4.12.3 Environmental Impacts	4.12-7
	4.12.4 Cumulative Impacts	4.12-11
4.13	Noise	4.13-1
	4.13.1 Noise Characteristics and Effects	4.13-1
	4.13.2 Vibration Characteristics and Effects	4.13-4
	4.13.3 Environmental Setting	4.13-6
	4.13.4 Regulatory Framework	4.13-15
	4.13.5 Environmental Impacts	4.13-25
	4.13.6 Cumulative Impacts	4.13-38
4.14	Population, Housing & Employment	4.14-1
	4.14.1 Environmental Setting	4.14-1
	4.14.2 Regulatory Framework	4.14-7
	4.14.3 Environmental Impacts	4.14-15
	4.14.4 Cumulative Impacts	4.14-21
4.15	Public Services and Recreation	4.15-1
	4.15.1 Fire Protection	4.15.1-1
	4.15.2 Police Protection	4.15.2-1
	4.15.3 Schools	4.15.3-1
	4.15.4 Library Services	4.15.4-1
4.16	Transportation and Traffic	4.16-1
	4.16.1 Environmental Setting	4.16-1
	4.16.2 Regulatory Framework	4.16-16
	4.16.3 Environmental Impacts	4.16-32
	4.16.4 Cumulative Impacts	4.16-49

TABLE OF CONTENTS (continued)

Section Page

4.17 Utilities and Service Systems....4.17-1
4.17.1 Definitions....4.17-1
4.17.2 Solid Waste....4.17-3
4.17.3 Wastewater....4.17-18
4.18 Wildfire....4.18-1
4.18.1 Environmental Setting....4.18-1
4.18.2 Regulatory Framework....4.18-7
4.18.3 Environmental Impacts....4.18-16
4.18.4 Cumulative Impacts....4.18-26

5.0 Alternatives....5.0-1

6.0 Other CEQA Considerations....6.0-1

7.0 List of EIR Preparers....7.0-1

8.0 References....8.0-1

Appendices

1.0 Notice of Preparation

Comments on Notice of Preparation

LIST OF FIGURES

Figure		Page
3.0-1	Kern COG Planning Area	3.0-3
3.0-2	Transit Priority and Strategic Employment Place Types	3.0-23
3.0-3	Transit Priority and Strategic Employment Place Types – Metro Bakersfield	3.0-24
3.0-4	Forecasted Development Pattern Kern Region 2035	3.0-25
3.0-5	Constrained Projects Map (2026-2049)	3.0-37
3.0-6	RTP Bicycle Network	3.0-38
4.2-1	Kern County Farmland	4.2-3
4.3-1	Kern County Air Pollution Control Districts Boundary Map	4.3-3
4.3-2	CalEnviroScreen 3.0 Results	4.3-26
4.3-3	Housing and Employment within 500 feet under the 2049 RTP Plan	4.3-48
4.3-4	Housing and Employment within 500 feet under the 2049 No Project	4.3-49
4.4-1	Kern County Native Vegetation, Wildlife Preservation, and Conservation	4.4-15
4.4-2	Resource Areas: Farmland, Habitat, Open Space, and Government Lands	4.4-41
4.5-1	Kern County Cultural Resources	4.5-8
4.6-1	Kern County Wind and Solar Farms	4.6-9
4.7-1	Kern County Geological Provinces	4.7-4
4.7-2	Significant Faults Located in Kern County	4.7-6
4.7-3	Kern County Landslide Susceptibility Map	4.7-15
4.7-4	Proposed RTP Projects Near Active Faults	4.7-31
4.9-1	Airports in Kern County	4.9-11
4.9-2	Sensitive Receptors within 0.25 mile of Highways Under the 2049 RTP Plan	4.9-28
4.9-3	Sensitive Receptors within 0.25 mile of Highways Under the 2049 No Project	4.9-29
4.10-1	Tulare Lake Hydrologic Region	4.10-3
4.10-2	FEMA Flood Zones in Kern County	4.10-25
4.11-1	Kern COG Land Uses	4.11-2
4.11-1b	City of Bakersfield Land Uses	4.11-3
4.11-2	Oil and Gas Resources	4.11-9
4.11-3	Kern County Wind and Solar Farms	4.11-10
4.12-1	Mineral Resources in Kern County	4.12-4
4.13-1	A-Weighted Decibel Scale	4.13-3
4.13-2	Typical Levels of Groundborne Vibration	4.13-5
4.15.5-1	Resource Areas: Farmland, Habitat, Open Space, and Government Lands	4.15.4-11
4.16-1	Countywide Regional Transportation Systems	4.16-3
4.16-2	Metro Bakersfield Regional Transportation Systems	4.16-4
4.16-3	2020 Level of Service	4.16-44
4.16-4	Level of Service 2022 RTP (2049)	4.16-45
4.18.1-1	Kern County Wildfire Hazard Severity Zones	4.18.1-19

LIST OF TABLES

Table		Page
1.0-1	Cumulative Impact Analysis Geographies	1.0-12
2.0-1	Existing and 2049 Population, Households, and Employment	2.0-4
2.0-2	Summary of Growth for 2026 RTP and Alternatives	2.0-7
2.0-3	Summary of Project Impacts, Mitigation Measures, and Residual Impacts	2.0-9
3.0-1	Existing and 2049 Population, Households, and Employment	3.0-9
3.0-2	RTP Goals, Performance Measures and Smart Mobility Framework Place Types Adapted for Kern County	3.0-18
3.0-3	Results of Greenhouse Gas Emissions and Vehicle Trips Reductions	3.0-32
3.0-4	Proposed Greenhouse Gas Emissions and Vehicle Trips Reduction Strategies	3.0-33
3.0-5	2026 RTP Transportation Projects -- 2026 through 2049 Transit and Other	3.0-36
3.0-6	2026 RTP Transportation Projects -- Summary of Constrained Project Costs	3.0-41
3.0-7	Bicycle Facility Mileage in Kern County	3.0-40
4.1-1	Caltrans Scenic Highways Program: Examples of Visual Quality Intrusions	4.1-4
4.2-1	Kern County Summary and Change by Land Use Category	4.2-6
4.2-2	Kern County Land Use Summary 2004-2022	4.2-7
4.2-3	Number of Williamson Act Acres in Kern County in 2020	4.2-6
4.2-4	2026 RTP Land Consumption	4.2-26
4.3-1	Ambient Air Quality Standards	4.3-6
4.3-2	National and California Ambient Air Quality Standard Designations for Kern County	4.3-10
4.3-3	Ambient Air Quality in Kern County – California and National Standards	4.3-19
4.3-4	Criteria Pollutant Emissions from Mobile Sources	4.3-38
4.3-5	PM2.5 Emissions from Heavy Duty Diesel Vehicles (tons/day)	4.3-45
4.4-1	Rare and Endangered Plant Species Recorded in Kern County	4.4-22
4.4-2	Special Status Wildlife and Fish Species in Kern County	4.4-27
4.4-3	City Policies and Ordinances Relevant to Biological Resources in Kern County	4.4-40
4.5-1	Historic Resources in Kern County	4.5-1
4.5-2	City Policies and Ordinances Relevant to Cultural Resources in Kern County	4.5-21
4.5-3	2026 RTP Freight Rail Projects	4.5-26
4.6-1	Alternative Fuel Stations	4.6-10
4.6-2	Gasoline and Diesel Consumption	4.6-35
4.6-3	Residential Energy Use	4.6-36
4.7-1	Major Potentially Active Faults in Kern County	4.7-5
4.7-2	Modified Mercalli Intensity Scale	4.7-8
4.8-1	Comparison of Global Pre-Industrial and Current GHG Concentrations	4.8-7
4.8-2	Top Five GHG Producer Countries and the European Union (Annual)	4.8-8
4.8-3	GHG Emissions in California	4.8-9
4.8-4	Annual Total Mobile Source GHG Emissions -2024 Compared to 2049	4.8-48
4.8-5	Annual Total Mobile Source GHG Emissions -1990 Compared to 2035	4.8-56
4.8-6	SB 375 Light Duty Vehicle Greenhouse Gas Emissions and Vehicle Trips Reductions	4.8-58
4.9-1	Kern County DTSC EnviroStor Sites	4.9-4

LIST OF TABLES (continued)

Table		Page
4.9-2	Description of Regulatory Agency Databases	4.9-5
4.9-3	Airports in Kern County	4.9-9
4.9-4	Sensitive Receptors within 0.25 mile of RTP Projects	4.9-26
4.10-1	Climate in the Kern Region	4.10-2
4.10-2	SWP "Table A" Deliveries to KCWA	4.10-10
4.10-3	Kern County Water Demand	4.10-15
4.10-4	Summary of Agricultural Water Demand (afy)	4.10-15
4.10-5	2024 303(d) List of Impaired Water Bodies Kern County	4.10-17
4.10-6	Comparison of SWP Water Quality Criteria	4.10-19
4.10-7	Plan Lane Miles	4.10-50
4.10-8	Residential Existing and Future Water Use (Million Gallons per Year)	4.10-59
4.11-1	Kern COG Land Uses	4.11-4
4.11-2	Affected Land Uses within 150 Feet of Transportation Facilities	4.11-36
4.13-1	Outside to Inside Noise Attenuation (dB(A))	4.13-7
4.13-2	Reference Noise Levels for Various Rail Operations	4.13-9
4.13-3	Exterior Noise Exposure Adjacent to Nearby Rail Lines	4.13-10
4.13-4	Demolition and Construction of Equipment Source Noise Levels	4.13-12
4.13-5	Vibration Levels Associated with Construction Equipment	4.13-14
4.13-6	Noise Abatement Criteria	4.13-17
4.13-7	Construction Vibration Damage Criteria	4.13-18
4.13-8	Land Use Compatibility for Community Noise	4.13-20
4.13-9	City of Bakersfield General Plan, Noise Level Performance Standards* Exterior Noise Level Standards	4.13-24
4.13-10	Sensitive Receptors within 0.25 mile of Proposed 2022 RTP Projects	4.13-28
4.13-11	Types and Duration of Noise Generated from Transportation Projects	4.13-29
4.13-12	Outdoor Construction Noise Levels	4.13-30
4.13-13	Vibration Source Levels for Construction Equipment	4.13-35
4.14-1	Housing Option Preferences	4.14-3
4.14-2	Growth Trends for Kern County and Cities	4.14-6
4.14-3	2026 RTP Housing Types in 2049	4.14-17
4.15.2-1	Kern County Sheriff's Substations Location	4.15.2-2
4.15.4-1	Kern County Library Facilities	4.15.4-1
4-15.5-1	Kern County Park Types	4.15.4-5
4.15.5-2	Kern County Parks	4.15.4-5
4.16-1	Urban Functional Classification System-Definitions	4.16-2
4.16-2	Rural Functional Classification System-Definitions	4.16-5
4.16-3	Passengers Transported by Kern County Transit Operators	4.16-6
4.16-4	Plan Impacts on Key Transportation Measures vs. Existing and 2049 No Project	4.16-39
4.17-1	Active Solid Waste Landfills in Kern County	4.17-4
4.17-2	Active Transfer Stations in Kern County	4.17-5
4.17-3	Solid Waste Generated in Kern County	4.17-16
4.17-4	Wastewater Flow and Capacity of Treatment Facilities in the Kern COG Region	4.17-19
5.0-1	Summary of Growth for 2026 RTP and Alternatives	5.0-8
5.0-2	All Alternatives – Transportation Performance Summary	5.0-8

LIST OF TABLES (continued)

Table		Page
5.0-3	Comparison of Alternatives to the 2026 RTP	5.0-9
5.0-4	Criteria Pollutant Emissions from Mobile Sources – No Project Alternative (2049) vs. Plan (2049)	5.0-14
5.0-5	PM2.5 Emissions from Heavy Duty Diesel Vehicles (tons/day) – No Project (2049) vs. Plan (2049)	5.0-15
5.0-6	Annual Gasoline and Diesel Consumption – No Project (2049) vs. Plan (2049)	5.0-18
5.0-7	Annual Total On-Road Mobile Source GHG Emissions – 2020 Compared to 2049 – No Project vs. Plan	5.0-19
5.0-8	Annual Total On-Road Mobile Source GHG Emissions – 1990 Compared to 2035 – No Project vs. Plan	5.0-20
5.0-9	Criteria Pollutant Emissions from On-Road Mobile Sources – Old Plan (2049) vs. Plan (2049)	5.0-29
5.0-10	PM2.5 Emissions from Heavy Duty Diesel Vehicles (tons/day) – Old Plan (2049) vs. Plan (2049)	5.0-30
5.0-11	Annual Gasoline and Diesel Consumption – Old Plan (2049) vs. Plan (2049)	5.0-31
5.0-12	Annual Total On-Road Mobile Source GHG Emissions – 2024 Compared to 2049 – Old Plan (2049) vs. Plan (2049)	5.0-32
5.0-13	Annual Total Mobile Source GHG Emissions – 1990 Compared to 2026 Plan and Old Plan (2022)	5.0-33
5.0-14	Annual Gasoline Consumption	5.0-40
5.0-15	Annual Total Mobile Source GHG Emissions – 2024 Compared to 2049 – Infill Alternative (2049) vs. Plan (2049)	5.0-41
5.0-16	Annual Total Mobile Source GHG Emissions – 1990 Compared to 2035 Plan and Old Plan	5.0-41
5.0-17	Impact Comparison Among RTP and Alternatives	5.0-47
5.0-18	Summary of Better/Worse Impacts Between All Alternatives and the Proposed Project	5.0-49

1.0 INTRODUCTION

1.1 SUMMARY

The Kern Council of Governments (Kern COG) prepared this Program Environmental Impact Report (PEIR), pursuant to the California Environmental Quality Act (CEQA), for the 2026 Regional Transportation Plan (2026 RTP, RTP, Plan, or Project). The 2026 RTP is a long-range regional transportation plan that provides a blueprint to help achieve a coordinated regional transportation system by creating a vision for transportation investment throughout the region and identifying regional transportation and land use strategies to address mobility needs. The 2026 RTP includes a policy element that is shaped by goals, policies and performance indicators, a description of planning assumptions for regional growth and future needs for travel and goods movement, a Sustainable Communities Strategy (SCS) that identifies planning strategies and illustrative development patterns that would reduce greenhouse gas (GHG) emissions and a plan of action for the region to pursue to meet identified transportation needs. The PEIR for the 2026 RTP serves as an informational document to inform decision-makers and the public of the potential environmental consequences of approving the proposed Plan. The PEIR includes mitigation measures designed to help avoid or minimize significant environmental impacts.

Individual transportation projects are preliminarily identified in the 2026 RTP; however, this PEIR analyzes potential environmental impacts from a regional perspective and is programmatic in nature. As such, it does not specifically analyze these individual projects. Project-specific analysis must be performed by the appropriate implementing agency prior to approval of individual projects. Project-specific planning and implementation undertaken by each implementing agency will depend on a number of issues, including policies, programs, and projects adopted at the local level; restrictions on federal, state, and local transportation funds; the results of feasibility studies for particular corridors; and further environmental review of proposed projects.

Pursuant to SB 375, the Sustainable Communities and Climate Protection Act of 2008 (as will be discussed in more detail below), Kern COG has developed a land use distribution pattern and land use scenarios in the SCS portion of the RTP to meet GHG reduction targets set by the California Air Resources Board (CARB). This PEIR programmatically analyzes this land use distribution pattern (as part of the project analysis) as well as alternative land use distribution patterns (in the alternatives chapter).

Although not required to do so, local jurisdictions are encouraged by Kern COG to consider the proposed actions and strategies provided in Chapter 4: Sustainable Communities Strategy, of the Plan, including strategies addressing land use, the transportation network, Transportation Demand Management (TDM), Transportation Systems Management (TSM), and clean vehicle technology.

1.2 PURPOSE AND LEGAL AUTHORITY

Pursuant to the federal transportation planning law, including the Fixing America's Surface Transportation Act (FAST Act), and state transportation planning law, including SB 375, as a Metropolitan Planning Organization (MPO), Kern COG must prepare a regional transportation plan for its metropolitan planning area every four years to ensure that the plan adequately addresses future transportation needs and meets state GHG reduction targets. Pursuant to SB 375, Kern COG must prepare an SCS to meet GHG reduction targets identified by CARB.

1.2.1 2026 Regional Transportation Plan

The 2026 RTP defines the region's mobility needs and issues through 2049, sets forth an action plan of projects and programs to address the needs consistent with the adopted policies, and documents the financial resources needed to implement the plan. The 2026 RTP is a 25-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It has been developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, state, and federal agencies. Regional transportation improvement projects proposed to be funded, in whole or in part, in the state transportation improvement program must be included in an adopted RTP. Kern COG does not implement individual projects included in the RTP; individual projects are implemented by local jurisdictions and other agencies (in general, throughout this EIR, these agencies are referred to collectively as implementing agencies). The RTP includes the following key components:

- Transportation Planning Policies
- Planning Assumptions and Growth Trends
- Sustainable Communities Strategy
- Strategic Investments
- Financial Constraints
- Future Transportation Planning (beyond 2049)
- Monitoring progress

1.2.2 Sustainable Communities Strategy

As part of the 2026 RTP, Kern COG prepared an SCS in accordance with the Sustainable Communities and Climate Protection Act of 2008 (SB 375). SB 375 helps achieve state GHG reduction targets established by AB 32 and the more recent SB 32. The requirement of an SCS under SB 375 more closely ties regional transportation planning with land use and regional housing planning under the Regional Housing Needs

Allocation (RHNA) process. The SCS provides regional-scale planning for land use and transportation, with the goal of reducing the amount that people drive and thereby reducing associated GHGs. The SCS is required to:

- Use the most recent planning assumptions, considering local general plans and other factors;
- Identify the general location of uses, residential densities, and building intensities within the region;
- Identify areas within the region sufficient to house all the population of the region;
- Identify areas within the region sufficient to house an eight-year projection of the regional housing need;
- Identify a transportation network to service the transportation needs for the region;
- Gather and consider the best practically available scientific information regarding resource areas and farmland in the region;
- Consider the state housing goals;
- Set forth a forecasted development pattern for the region, which together with the transportation network and transportation policies, achieves regional GHG reduction targets; and
- Comply with Section 176 of the federal Clean Air Act which requires conformity with the State Implementation Plan. (Govt. Code §65080(b)(2)(B)).

MAP 21 and FAST Act

With the passage of the 'Moving Ahead for Progress in the 21st Century' (MAP-21) federal transportation authorization legislation in 2012, transportation system performance planning and monitoring also became a federal mandate.[1] This commitment to a national performance management and reporting system was further solidified with the passage of the subsequent federal transportation authorization package (the 'FAST Act') in 2015 and continues under the Infrastructure Investment and Jobs Act (IIJA) of 2021. Kern COG uses quantitative performance measures to evaluate how well the RTP may achieve the regional goals established in the Plan.

1 U.S. Department of Transportation. *MAP-21 – Moving Ahead for Progress in the 21st Century*. Available online at: https://www.fhwa.dot.gov/map21/, accessed March 30, 2026.

Further, MAP-21 continues to require, as under prior planning law, that "a long-range transportation plan shall include a discussion of the types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan" (23 USC § 134(i)(2)(B)).[2] Consultation and public outreach activities have been undertaken in conjunction with the Plan and PEIR development processes. Kern COG is coordinating efforts to comply with MAP-21 planning requirements with efforts undertaken through the CEQA outreach process. As such, the Plan has placed emphasis on these planning requirements, including those that prescribe coordinated planning and consideration of environmental resources.

Section 65080 of the California Government Code

Kern COG is also required to prepare an RTP pursuant to Section 65080 of the California Government Code. The state requirements largely mirror the federal requirements and require each transportation planning agency in urban areas to adopt and submit an updated RTP to the California Transportation Commission (CTC) and the California Department of Transportation (Caltrans) every four years. To ensure a degree of statewide consistency in the development of RTPs, the CTC under Government Code Section 14522 prepared RTP Guidelines. The adopted guidelines include a requirement for program level performance measures, which include objective criteria that reflect the goals and objectives of the RTP. In addition, the initial years of the plan must be consistent with the FTIP.[3]

Sustainable Communities and Climate Protection Act of 2008

State planning law further requires, pursuant to the Sustainable Communities and Climate Protection Act of 2008, Senate Bill (SB) 375 (Chapter 728, Statutes of 2008) that an RTP include an SCS component to reduce greenhouse gas (GHG) emissions from passenger vehicles (automobiles and light-duty trucks). SB 375 is part of California's overall strategy to reach GHG emissions reduction goals required by Assembly Bill (AB) 32, by promoting integrated transportation planning with the goal of creating more sustainable communities.[4]

Pursuant to SB 375, the SCS prepared by Kern COG is required to meet reduction targets for greenhouse gas (GHG) emissions by 9 percent per capita by 2020 and 15 percent per capita by 2035 compared to 2005, as set by the California Air Resources Board (CARB). The most recent targets were established by CARB in

---

2 Federal Highway Administration. *Title 23, U.S.C.* Available online at: https://www.fhwa.dot.gov/map21/docs/title23usc.pdf, accessed March 30, 2026.

3 California Legislative Information. *Chapter 2.5 Transportation Planning and Programming [65080-65086.5].*

4 California Legislative Information. 2008. *Senate Bill No. 375, Chapter 728*.

October 2018. CARB is required to update the regional targets no later than 2026. CARB staff began the target update process in 2024 with a public workshop and plans to conclude it in 2026 with Board approval of the new targets.[5] However, the new targets are not anticipated to be available until after the RTP is adopted and therefore, Kern COG is using the current targets.

According to Section 65080(b)(2)(B) of the California Government Code, the SCS must:[6]

- Identify existing land use.
- Identify areas to accommodate long-term housing needs.
- Identify areas to accommodate an eight-year projection of regional housing needs.
- Identify transportation needs and the planned transportation network.
- Consider resource areas and farmland.
- Consider state housing goals and objectives.
- Set forth a forecasted growth and development pattern.
- Comply with federal law for developing an RTP.

The RTP outlines Kern COG's plan for attaining the GHG emissions reduction targets set forth by CARB by integrating the transportation network and land use strategies with forecasted land use patterns that respond to projected growth, housing needs, changing demographics, and transportation demands.

In addition, Kern COG is required to submit to CARB the SCS (along with associated required modeling), developed as part of the Plan, for the purpose of determining whether the GHG emissions reduction targets have been met. Furthermore, SB 375specifically states that the SCS developed as part of the RTP cannot dictate local General Plan policies. Rather, the Act is intended to provide a regional policy foundation that local government may build upon if they so choose, and generally includes the quantitative growth projections from each city and county in the region going forward. Qualifying projects that meet criteria established by SB 375 and are consistent with the SCS are eligible for streamlined environmental review under CEQA.[7]

---

5 California Air Resources Board. Available online at: https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets

6 California Legislative Information. *Chapter 2.5 Transportation Planning and Programming [65080-65086.5].*

7 CEQA streamlining provisions are also available for eligible projects meeting the criteria established by Senate Bill 226, *CEQA Guidelines* Section 15183.3 (Streamlining for Infill Projects) and for eligible projects meeting the criteria established by Senate Bill 743 (Steinberg, 2013), Public Resources Code Section 21155.4 (Exemptions).

SB 32 (Statutes of 2016, Chapter 249) extended the state's GHG reduction target under AB 32, requiring achievement of a 40 percent reduction from 1990 levels of GHG emissions by 2030, as initially directed by Executive Order B-30-15. In California's 2022 Climate Change Scoping Plan (2022 Scoping Plan), CARB, the state agency tasked with furthering the state toward its long-term GHG reduction targets, provides the framework for the state to achieve its 2030 target as mandated by SB 32. These statewide efforts extend to achieve the state's target of achieving an 85 percent reduction from 1990 levels by 2045 as established by Executive Order S-3-05. CARB identifies passenger vehicle-sourced GHGs as a sector where notable reductions are required, which can be partially achieved through implementation of the land use and transportation strategies in RTP.

National Environmental Policy Act

Adoption of the Plan is solely at the discretion of Kern COG's Board and does not require approval by any federal agency; therefore, it is not subject to NEPA (Public Law 91-190).[8] However, Kern COG recognizes that lead agencies that pursue construction and operation of the transportation projects that are included in the Plan may seek federal funding, federal permits, federal approvals, or authorization to cross over lands administered by an agency of the federal government that would constitute a federal action, thus triggering the procedural provisions of NEPA. Therefore, Kern COG has chosen to include a statement of purpose and need (see **Chapter 2.0, Project Description**) to enable proponents of individual projects included in the Plan to use this PEIR in full or in part to serve as a functional equivalent environmental review, as appropriate, for individual projects that may involve a subsequent federal action triggering the procedural provisions of NEPA. Activities that constitute a federal action include, but are not limited to, the use of federal funds, right-of-way permits on federal lands, federal leases, and discretionary permits issued by federal agencies. To the extent that the proposed action is adequately characterized, analyzed, and sufficient mitigation measures have been considered to avoid or reduce the anticipated adverse direct, indirect, and cumulative effects of the proposed federal action.

1.3 SCOPE AND METHODOLOGY

This PEIR fulfills the requirements of CEQA. It is a programmatic document that provides a region-wide assessment of the significant environmental effects of implementing the programs, policies, and projects included in the 2026 RTP. A PEIR:

> *may be prepared on a series of actions that can be characterized as one large project and are related either: (1) geographically, (2) as logical parts of the chain of contemplated actions, (3) in connection with issuance of rules, regulations, plans or other general criteria to govern the conduct of a*

8 U.S. Fish and Wildlife Services. *The National Environmental Policy of 1969*. Available online at: https://www.fws.gov/r9esnepa/RelatedLegislativeAuthorities/nepa1969.PDF

> *continuing program, or (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.*[9]

This PEIR provides a regional consideration of cumulative effects and includes broad policy alternatives and program mitigation measures that are equally broad in scope. This PEIR also provides a regional scale analysis and a framework of mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies in the region as individual planning, development, and transportation projects are identified, designed, and move through the planning, review, and decision-making process.

A PEIR may serve as a first-tier document for later CEQA review of individual projects included in the program. These project-specific CEQA reviews will focus on project-specific impacts and mitigation measures and need not repeat the broad analyses contained in the EIR. As discussed by the California Supreme Court, "it is proper for a lead agency to use its discretion to focus a first-tier EIR on only the…program, leaving project-specific details to subsequent EIRs when specific projects are considered."[10]

As such, the focus of the environmental analysis in the 2026 RTP PEIR is on regional-scale and cumulative impacts of implementation of the 2026 RTP (and identified alternatives). The long-range planning horizon of more than 20 years, as well as the regional scale of the RTP, necessitate that the highway, arterial goods movement, and transit projects included in the Plan (and the alternatives) be described at a conceptual level. This PEIR addresses environmental impacts at the appropriate scale and to the level that they can be assessed without undue speculation. There is an inherent uncertainty in modeling large-scale effects so far into the future; the modeling results represent reasonable best efforts to identify impacts. Much of the modeling is based on inputs that are estimated based on current practice; for example, in analyzing GHG emissions associated with development, energy use factors and emission rates are based on current energy consumption and emission rates. However, various regulations require (and the marketplace provides for) much more efficient use of energy (e.g., Energy Star appliances) than at present, while at the same time, energy providers are required to use much larger proportions of renewable energy sources in the future, resulting in lower emissions per unit energy. However, there are no revised factors to estimate per capita or per household reduced energy consumption in 2049.

The degree of specificity in an EIR corresponds to the degree of specificity of the underlying activity being evaluated.[11] Also, the adequacy of an EIR is determined in terms of what is reasonably feasible, in light of

---

9 *State CEQA Guidelines* §15168

10 *In re Bay Delta* (2008) 43 Cal. 4th 1143, 1174

11 *State CEQA Guidelines* §15146

factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project.[12] The activity being evaluated in this PEIR is the long-term (through the year 2049) 2026 RTP, including the SCS. This Draft EIR strives to provide as much quantitative detail as feasible regarding the regional environmental impacts of the Plan. However, not all impacts can be feasibly and/or accurately quantitatively analyzed at a regional level and/or up to the year 2049.

State CEQA Guidelines §15146(b) provides that an EIR prepared for the adoption of a general plan should focus on the secondary environmental effects to be expected following adoption, but that the EIR need not be as detailed as one prepared for the specific construction projects that follow. Further, *State CEQA Guidelines* §15152(c) states that when a lead agency is using the tiering process for a large-scale planning approval, such as a general plan, the development of detailed site-specific information may not be feasible and can be deferred to project-specific CEQA documents. Since the 2026 RTP is even broader in scope and has a longer time horizon than many general plans, such detail is not required in this PEIR.

The geographic scope and complexity of the 2026 RTP played an important role in determining the appropriate level of detail to include in this PEIR. Kern County encompasses more than 8,171 square miles and, in 2024, the population in Kern County was estimated to be 910,300 persons.[13] The Kern region is unique in that it contains the San Joaquin Valley, mountain, and desert sub-regions. The region's large jurisdiction and dispersed centers support agriculture, oil and gas production, renewable energy, military, aerospace, recreation, and other activities where abundant lands, unique geographic features, and transportation linkages are important in supporting and enhancing the region's economic pursuits. As a result, the 2026 RTP is very complicated and highly diverse, consisting of many transit, highway, and phased arterial projects, as well as a comprehensive SCS.

Significant environmental effects of the 2026 RTP were identified by employing multiple analytical methods, including spatial analysis; transportation, noise, land use, and air quality modeling; and other quantitative, ordinal, and qualitative techniques. Spatial analysis using Geographic Information Systems (GIS) was employed to evaluate the potential effects of the major freeway, rail and transit projects on resource categories including land use, biological/open space and water resources. Transportation, noise, and air quality simulation models were used to estimate the transportation, noise, and air quality impacts. Project and policy elements of the 2026 RTP and alternatives were incorporated into the modeling analyses and the illustrative land use mapping. The specific techniques used to evaluate each potential environmental effect are described in each resource/issue section in **Section 4.0** of this document.

---

12 *State CEQA Guidelines* §§15151, 15204(a)

13 Kern COG, 2026.

1.4 BASELINE FOR DETERMINING SIGNIFICANCE

The PEIR must identify significant impacts that would be expected to result from implementation of the 2026 RTP. A significant impact is defined as a "substantial or potentially substantial, adverse change in the environment."[14] Significant impacts are determined by applying explicit significance criteria to compare the future Plan conditions to the existing environmental setting.[15] The existing setting is described in detail in each resource section of **Section 4.0** of this PEIR, and represents existing conditions at the time the EIR NOP was published (April 21, 2025), or other representative data to describe current regional conditions.

1.5 THRESHOLD OF SIGNIFICANCE

CEQA gives the lead agency the responsibility and broad discretion in determining whether an adverse environmental effect identified in an EIR should be classified as "significant" or "less than significant."[16] Under Section 15064(b), "the significance of an activity may vary with the setting," and, as a result, an inflexible definition of what constitutes a significant effect is not always possible. The lead agency has discretion to set its own significance criteria, which requires the lead agency to make a policy judgment about how to distinguish impacts that are adverse but significant from impacts that are adverse but not significant.[17] A lead agency may select a standard of significance based on its judgment.[18] The standards of significance used in an EIR may also rely upon policies adopted and implemented by the lead agency.[19] The criteria for determining significance are included in each resource section in **Section 4.0** of this PEIR.

1.6 PROPOSED 2026 RTP AND ALTERNATIVES

When considering whether or not the range of alternatives to be evaluated in an EIR is adequate, several principles apply. The "discussion of alternatives need not be exhaustive," and the requirement to discuss alternatives is "subject to a construction of reasonableness."[20] "An EIR need not consider every conceivable alternative to a project."[21]

Under CEQA, perfection is not the standard governing a lead agency's proposed range of project alternatives. Rather, in preparing an EIR, a lead agency must make an objective, good-faith effort to provide

---

14 Public Resources Code §21068

15 *State CEQA Guidelines* §15126.2(a)

16 *State CEQA Guidelines* § 15064(b)

17 *Eureka Citizens for Responsible Gov't v City of Eureka* (2007) 147 Cal.App.4th 357

18 *Sierra Club v. City of Orange* (2008) 163 Cal.App.4th 523, 541

19 *Mira Mar Mobile Community v. City of Oceanside (2004) 119 Cal.App.4th 477*

20 *Residents Ad Hoc Stadium Committee v. Board of Trustees* (1979) 89 Cal.App.3d 274, 286.

21 *State CEQA Guidelines* §15126.6(a)

information permitting a reasonable choice of alternatives that would feasibly attain most of the basic objectives of the project, while avoiding or substantially lessening the project's significant adverse environmental impacts.[22]

State CEQA Guidelines §15126.6(d) requires an EIR to include sufficient information about each alternative in order to allow meaningful evaluation, analysis, and comparison with the proposed project. An EIR must discuss alternatives to a project in its entirety, but is not required to discuss alternatives to each particular component of a project. CEQA does not require an EIR to consider multiple variations on the alternatives analyzed.

This PEIR evaluates a reasonable range of alternatives for the 2026 RTP that brackets the range of potential impacts that could occur under a spectrum of changes to individual components of the RTP. These alternatives are briefly described below. More detailed information about each of these alternatives is presented in **Section 5.0**.

1. The No Project Alternative includes only those transportation projects that are included in the first year of the previously conforming transportation plan and/or Transportation Improvement Plan (TIP), or have completed environmental review by January 2026.

2. The Old Plan Alternative is an update of the adopted 2022 RTP to reflect the most recent growth estimates, transportation planning decisions, and assumptions.

3. The Countywide Infill Alternative would result in new growth being accommodated as infill development.

The Plan and each alternative maintain a constant total for population, households, and jobs in 2049.

1.7 APPROACH TO CUMULATIVE IMPACT ANALYSIS

Section 15130 of the *State CEQA Guidelines* requires that an EIR evaluate potential environmental impacts that are individually limited but cumulatively significant. CEQA defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (*State CEQA Guidelines* § 15355). "'Cumulatively considerable' means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (*State CEQA*

22 *California Oak Foundation v. Regents of University of California* (2010) 188 Cal.App. 4th 227, 275-276.

Guidelines § 15065(a)(3)). This means that cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

The proposed Plan includes region-wide transportation projects and projected land use development patterns in Kern County to accommodate projected regional growth through 2049. As such, the impacts of the 2026 RTP are cumulative on a regional scale. Therefore, the environmental analysis included in each issue area of this PEIR is, in essence, a cumulative analysis of the potential impacts of the transportation projects and land use strategies in the 2026 RTP. Furthermore, this PEIR considers other regional-scale projects that have similar regional-scale impacts that could overlap with impacts of the 2026 RTP, for identified CEQA impact areas. Such regional-scale cumulative projects include RTP plans for neighboring jurisdictions (Los Angeles, Ventura, San Luis Obispo, Santa Barbara, Monterey, Kings, Tulare, Inyo, and San Bernardino Counties) as well as Air Quality Management Plans for Kern County and neighboring jurisdictions. CEQA allows for analysis of cumulative impacts based on a list of cumulative projects or projections of growth. This PEIR uses a combination of approaches. The analysis of cumulative impacts is qualitative and based on anticipated growth in adjacent jurisdictions, assuming that each jurisdiction will adopt an RTP and AQMP as applicable and that growth will be consistent with Department of Finance (DOF) forecasts.

Cumulative impacts occur in one of two ways: 1) impacts from one project overlap with impacts from another project, so for example, with respect to the 2026 RTP, traffic from Kern County could overlap with traffic from an adjacent County to impact the same transportation facilities (the Kern County Travel Demand Model accounts for travel from adjacent jurisdictions); 2) the other way that cumulative impacts occur is when a resource is of value to a broader community than just the immediate project vicinity, for example, impacts to a cultural or biological resource that has more than local significance, for example State or even national significance, impacts to such a resource would be cumulative with impacts to other resources of similar significance wherever they occur in the state or across the entire US.

The geographic area for evaluation of cumulative impacts is the area within which impacts of the proposed Plan could overlap with impacts of other regional-scale projects. In general, the areas that could experience overlapping impacts are on the periphery of the region, where growth from the proposed Plan and growth in accordance with other plans could occur and result in overlapping impacts. The potential for cumulative or overlapping impacts is contemplated at five geographies (see **Table 1.0-1, Cumulative Impact Analysis Geographies**). Although there is some potential for categories to overlap, for example, impacts to recreational resources occur at the local level for local resources and at the adjacent County, San Joaquin Valley, and State level (and even global level) for some resources that are used by people from far and wide. For purposes of the cumulative analysis, the qualitative discussion identifies how impacts could overlap; **Table 1.0-1, Cumulative Impact Analysis Geographies,** provides an approximate guide of the

primary focus of the cumulative analysis and is not intended to limit the geography of a particular cumulative analysis where impacts may overlap at a number of levels.

Table 1.0-1
Cumulative Impact Analysis Geographies

Kern County	Kern County and Adjacent Jurisdictions	San Joaquin Valley	State of California
Aesthetics	Biological Resources	Air Quality – Regional Impacts	Agriculture and Forestry Resources
Public Services – Fire, Police, Schools, Recreation (Local Facilities)	Transportation and Traffic	Cultural Resources	Public Services – Recreation (Regional Facilities)
Air Quality -- Localized Impacts			Public Utilities – Energy, Solid Waste
Land Use and Planning			Water Supply
			Greenhouse Gas Emissions
Noise			
Population and Housing			
Hydrology			

1.8 GROWTH PATTERNS

The 2026 RTP includes an SCS that encourages growth in transit nodes and centers to balance out the ratio of jobs to housing. This growth pattern results in substantially less consumption of vacant, open space/recreation and agricultural land compared to the No Project: 25.7 square miles or 16,448 acres under the Plan, compared to up to 25.3 square miles or 16,192 under the No Project condition. This PEIR analyzes the impacts of the RTP growth forecast in addition to impacts from the RTP transportation projects.

Analysis of the land use distribution pattern and alternate land use scenarios necessarily includes analysis of the growth distribution and anticipated land use development necessary to accommodate the growth. However, because locations, densities, orientation, timing, and other site-sensitive factors related to development are not specified in the Plan and cannot be specified by Kern COG as they do not have land use authority, Kern COG cannot reliably quantify the impacts from such anticipated development. Kern COG can nevertheless programmatically analyze these impacts and provide mitigation measures to address them.

1.9 MITIGATION MEASURES

CEQA requires that Kern COG identify all feasible mitigation measures in the PEIR that will avoid or substantially lessen the significant environmental effects of the project. (Public Resource Code Sections 21002, 21081(a)(1); *State CEQA Guidelines* Section 15126.4(a)). CEQA, however, does not require a lead agency to undertake identified mitigation measures, even if those measures are necessary to address a project's significant environmental effects, if the agency finds that the measures "are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency" (Public Resource Code Section 21081(a)(2); City of Marina v. Bd. of Trustees of the Calif. State Univ. (2006) 39 Cal.4th 341, 366; see also Smart Rail v. Exposition Metro Line Construction Authority (2013) 57 Cal.4th 439).

Furthermore, SB 375 specifically provides that nothing in an SCS supersedes the land use authority of cities and counties, and that cities and counties are not required to change their land use policies and regulations, including their general plans, to be consistent with the SCS or an alternative planning strategy (Government Code Section 65080(b)(2)(K)). Moreover, cities and counties have plenary authority to regulate land use through their police powers granted by the California Constitution, art. XI, §7, and under several statutes, including the local planning law (Government Code Sections 65100–65763), the zoning law (Government Code Sections 65800–65912), and the Subdivision Map Act (Government Code Sections 66410–66499.37). As such, Kern COG has no authority to implement mitigation related to land use plans and projects in the 2026 RTP. With respect to the transportation projects in the 2026 RTP, these projects are to be implemented by Caltrans, county transportation commissions, local transit agencies, and local governments (i.e., cities and counties), and not Kern COG. Kern COG also has no authority/jurisdiction to require these agencies to implement project-specific mitigation measures.

The implementing agencies and local lead agencies are responsible for identifying project-specific mitigation measures and ensuring adherence to such mitigation measures. This PEIR identifies measures that Kern COG will encourage implementing and local agencies to use on a project-specific basis, as appropriate. In general, the terms "local agency," and "implementing agency" are used throughout this PEIR to identify agencies that will act as lead agencies for different types of individual projects. Individual projects that are anticipated to occur pursuant to the 2026 RTP consist of planning projects (general plans, specific plans, climate action plans, etc.), development projects including Transit Priority Projects (TPPs) and other similar projects, and transportation projects.

In general, "local agency" is used to refer to a public agency that would propose a planning project or a public infrastructure project and/or an agency that would be lead agency for individual development projects. "Project sponsor" is typically used to refer to an applicant (that could be public or private, an

organization or an individual) that proposes a project. "Implementing agency" is used to refer to an agency responsible for implementing a project. In this document, project-implementing agencies are those that are responsible for carrying out (reviewing, approving, constructing) transportation projects.

This PEIR addresses a large region with a variety of transportation and development projects to be implemented over 23 years. As such, the PEIR identifies programmatic mitigation measures to be implemented by Kern COG on a regional scale and identifies mitigation measures that Kern COG will encourage implementing and local agencies to employ as feasible and appropriate as part of project-specific environmental review. As discussed in each section, mitigation measures in this PEIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this PEIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP PEIR, mitigation measures included in this PEIR (or their equivalent) should be required by the lead agency as appropriate and applicable.

Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this PEIR is intended to supersede existing regulations and policies of individual jurisdictions. While compliance with existing regulations, such as the Uniform Building Code and California Building Code, is not necessarily considered mitigation, for purposes of the analysis, regulations are included where appropriate to provide additional information on the methods available to reduce potential impacts.

In sum, this PEIR provides a regional-scale analysis and a framework of mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies within the County. As individual planning, development, and transportation projects are identified, this PEIR should guide design, planning, review, and decision-making processes. As authorized by *State CEQA Guidelines* and case law, the mitigation measures included in this PEIR are less detailed than those that would be part of a project-specific EIR, and the selection of detailed mitigation measures is properly deferred to future project-specific CEQA reviews. Kern COG's role is to prioritize and facilitate transportation projects consistent with adopted procedures. Kern COG does not directly implement transportation projects, nor does it conduct project-specific environmental review. SB 375 specifically addresses the role of metropolitan planning organizations (MPOs), such as Kern COG, and it explicitly does not provide Kern COG with the authority to regulate land use. Therefore, Kern COG has no ability to impose or enforce mitigation measures within the authority of local jurisdictions.

Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective

jurisdictions. Lead agencies may use, amend, or not use measures identified in this PEIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

1.9.1 Transportation Project Mitigation

As previously discussed, Kern COG's role is to prioritize and facilitate transportation projects consistent with its adopted procedures. Most individual projects in the RTP will be implemented by Caltrans, Golden Empire Transit District (GET), and local governments. These agencies routinely implement the types of mitigation measures identified in this PEIR during project design, CEQA review, and/or project construction. This PEIR has made a preliminary determination that the proposed mitigation measures are generally feasible and effective in certain circumstances based upon a region-wide assessment, and therefore, it is reasonable to expect that the measures will be implemented if applicable and feasible. However, local agencies retain the discretion to determine which mitigations are most applicable to each individual project and whether they are feasible under the location-specific circumstances.

1.9.2 Land Use Mitigation

Kern COG has no authority to adopt local land use plans or approve local land use projects that will implement the SCS. SB 375 specifically provides that nothing in SB 375 supersedes the land use authority of cities and counties. In addition, cities and counties are not required to change their land use plans and policies, including general plans, to be consistent with an SCS.[23] Local governments are the primary agencies responsible for requiring and monitoring mitigation of the impacts of land use plans and projects that implement the RTP, and Kern COG has no concurrent authority to mitigate the impacts of land use plans and projects. As such, local agencies retain the discretion to consider which mitigation measures are appropriate to each individual project and whether they are feasible under the location-specific circumstances. However, only mitigation measures that are fully under the control of Kern COG are considered in the identification of level of significance after mitigation.

1.10 SCOPE AND CONTENT OF THE DRAFT EIR

After conducting a preliminary review in accordance with Section 15060 of the *State CEQA Guidelines*, Kern COG determined that a PEIR should be prepared to address the potential environmental impacts of the Plan. Following this determination, a Notice of Preparation (NOP) was prepared and circulated. The

23 Government Code §65080(b)(2)(K)

purpose of the NOP was to solicit early comments from public agencies with expertise in subjects that would be discussed in the Draft PEIR.

This PEIR evaluates impacts at the regional level, as appropriate to a regional-scale document. Topics evaluated in this Draft EIR have been identified based upon a preliminary review of issues, responses to the NOP received during the NOP comment period, and review of the 2026 RTP by Kern COG staff and their consultants. Kern COG determined through this initial review process that impacts related to the following topics are potentially significant and require assessment in this Draft PEIR:

- Aesthetics and Visual Resources
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Population and Housing
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Services Systems
- Wildfire

1.10.1. Level of Significance

The following terms are used to describe the level of significance of impacts identified in the analyses:

- **No Impact** – applies where the Project would have no effect.

- **Less-Than-Significant Impact** – applies where the Project could create an impact that does not exceed the defined threshold of significance and is therefore less than significant. CEQA does not require mitigation of less-than-significant impacts.

- **Less-Than-Significant Impact with Mitigation** – applies where the Project has the potential to create a significant impact (exceeding the defined threshold of significance), but where this impact can be reduced below the threshold of significance with mitigation.

- **Cumulatively Considerable Contribution** – applies in the analysis of cumulative impacts where the Project alone would not result in a significant impact but where the project together with other projects

could result in an impact that exceeds thresholds of significance **and** the Project represents a substantial or "considerable" contribution to the significant cumulative impact.

- **Significant and Unavoidable Impact** – Significant and Unavoidable applies to an impact that exceeds or has the reasonably foreseeable potential to exceed the defined threshold of significance and cannot be eliminated or reduced to a less-than-significant level through implementation of feasible mitigation measures.

In cases where it would be speculative to determine the nature and therefore impacts of certain possible but not necessarily reasonably foreseeable consequences of the 2026 RTP (for example, the construction of certain public service infrastructure), this PEIR indicates that such development would be speculative and ends the analysis.

1.11 LEAD, RESPONSIBLE, AND TRUSTEE AGENCIES

The public agency that has the principal responsibility for carrying out or approving a project is designated as the Lead Agency under CEQA. For this proposed project, Kern COG is the Lead Agency and is responsible for ensuring that the PEIR satisfies the procedural and substantive requirements of CEQA. Kern COG is also responsible for considering and certifying the adequacy and completeness of the EIR prior to making any decision regarding the proposed project.

"Responsible Agency" means a public agency that proposes to carry out or approve a project or portion of a project, for which the Lead Agency is preparing or has prepared an EIR or Negative Declaration. For purposes of CEQA, the term Responsible Agency includes all public agencies other than the Lead Agency having discretionary approval authority over the proposed project or portion thereof. Caltrans and the public transit agency, GET, will serve as the Responsible Agencies for the 2026 RTP, as well as cities and the County of Kern. During the NOP review period, no other public agency identified itself as a Responsible Agency.

"Trustee Agency" means a state agency having jurisdiction by law over natural resources affected by a project, which are held in trust for the people of the State of California. During the NOP review period, no public agency identified itself as a Trustee Agency. Agencies with expertise and jurisdiction over issues affected by the 2026 RTP include the following agencies: California Air Resources Board, California Department of Fish and Wildlife, State Historic Preservation Office, Regional Water Quality Control Board, and Department of Toxic Substances Control.

1.12 EIR REVIEW PROCESS

Pursuant to *State CEQA Guidelines* § 15082, the NOP for the 2026 RTP PEIR was released on April 21, 2025 and circulated for a 30-day comment period ending May 21, 2025. Kern COG convened a PEIR scoping meeting on May 1, 2025. A copy of the NOP is included in **Appendix 1.0**, along with copies of letters received in response to the NOP.

This EIR is being circulated for a 45-day public review and comment period. During this period, written comments concerning the adequacy of the Draft EIR may be submitted by any interested person and/or affected agency, to:

Kern Council of Governments
1401 19th Street, Suite 300
Bakersfield, CA 93301
Attn: Ben Raymond, Regional Planner
braymond@kerncog.org

Following the public review period, all written comments will be responded to in writing and incorporated into a Final EIR. At least 10 days prior to a hearing to certify the Final EIR, proposed responses to comments on the Draft EIR by responsible agencies will be sent to those agencies as required by CEQA. The Final EIR will then be considered by the Kern COG Board, which will determine whether to certify the adequacy and completeness of the document in accordance with CEQA. No aspect of the proposed project would be approved until after the Final EIR is certified.

1.13 CEQA STREAMLINING

The CEQA process is often viewed as cumbersome and costly, particularly if the environmental reviews and project approvals are litigated. In order to minimize such delays and to streamline the CEQA environmental review process, the California Legislature signed into law Senate Bill (SB) 375, SB 226, and SB 743. These laws provide for streamlined review of residential and mixed-use projects consistent with the SCS; modified review and analysis, through an expedited Sustainable Communities Environmental Assessment (SCEA), for Transit Priority Projects (TPPs) that are consistent with the SCS; and a complete CEQA exemption for TPPs that are consistent with the SCS and meet a specific list of other requirements. Infill and transit-oriented development projects at the local levels, in particular, can proceed faster through the entitlement and environmental processes by relying on regional project CEQA approvals. Having a certified RTP PEIR allows for "tiering" for subsequent, individual projects. A regionally adopted EIR such as this PEIR, as a first-tier document, could lead to negative declarations (NDs), mitigated negative declarations (MNDs), or even statutory or categorical exemptions for subsequent second-tier environmental documents.

1.13.1 Sustainable Communities and Climate Protection Act of 2008 (SB 375) (Steinberg, 2008)

The Sustainable Communities and Climate Protection Act of 2008 amends CEQA to add Chapter 4.2 Implementation of the Sustainable Communities Strategy, which allows a CEQA exemption for Sustainable Community Projects, as well as streamlined CEQA analysis for TPPs and certain residential or mixed-use projects.[24]

The purpose of the SCS is to develop strategies to meet the GHG emission reduction targets for the region, and qualifying projects that are consistent with the SCS will help meet this goal. Furthermore, because the potential impacts of the SCS are analyzed in this PEIR, the qualifying projects may take advantage of the CEQA streamlining provisions contained in SB 375. The intent of the CEQA streamlining provisions is not to undercut or circumvent CEQA requirements, but rather to reduce documentation and redundancy and to provide an incentive to support residential and transportation projects that are consistent with a larger effort to reduce GHG emissions.

The following is a summary of the CEQA streamlining provisions in SB 375. For the purpose of determining consistency for CEQA streamlining, lead agencies such as local jurisdictions have the sole discretion in determining a local project's consistency with the Plan.

A TPP is eligible for four types of CEQA relief: (1) Sustainable Communities Project CEQA Exemption, (2) Sustainable Communities Environmental Assessment, (3) a streamlined EIR, or (4) traffic mitigation measures. Different types of CEQA relief are associated with different criteria that are to be met.

As a threshold matter, to qualify as a TPP, a project must be consistent with the general use designation, density, building intensity, and applicable policies in an SCS accepted by CARB. The TPP must also:

- Be at least 50 percent residential use based on area;
- Contain at least 20 dwelling units/acre;
- Have a floor area ratio for the commercial portion of the project at 0.75 if the project contains between 26 percent and 50 percent nonresidential uses; and

24 California Legislative Information. *Senate Bill No. 375*.

- Be within 0.5 miles of a major transit stop[25] or a high-quality transit corridor[26] included in the RTP.

Sustainable Communities Project Exemption

The Sustainable Communities Project (SCP) Exemption is a TPP, which is consistent with the SCS and meets nine criteria for eligibility for use of the exemption:[27]

- The project and approved projects can be served by utilities, and the project will pay applicable in-lieu or development fees.
- Does not include wildlife habitat of significant value or protected species.
- Is not contaminated (site is not on Cortese list).
- Site is subject to preliminary endangerment assessment regarding potential exposure to health hazards from nearby activities. Any hazards are to be mitigated to less than significant.
- Would not significantly affect an historic resource.
- The site is not subject to wildland fire hazard, unusually high risk of fire/explosion from materials on adjacent properties, health hazard, seismic risk, landslide, or flood plain.
- The site is not located on developed open space.
- The project would be 15 percent more efficient than Title 24, and landscaping would use 25 percent less water than the regional average household.

In addition, the project must meet seven additional parameters related to size, siting, and protection of affordable housing:

- The site is not more than 8 acres.
- The project does not contain more than 200 units.

---

25 Defined as a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

26 Defined as a corridor with fixed route bus service with at least 15-minute service intervals during peak commute hours.

27 California Legislative Information. *Senate Bill No. 375*.

- The project does not result in the net loss of affordable housing.
- No single level building that exceeds 75,000 square feet.
- Applicable mitigation, performance standards, criteria from prior EIRs will be incorporated in to the TPP.
- The project would not conflict with nearby operating industrial use.
- The project is located within 0.5 mile of rail transit station or ferry terminal included in RTP, or within 0.25 mile of a high-quality transit corridor.

The project must provide at least one of three specified community benefits:

- At least 20 percent of the housing will be for moderate income or 10 percent rented to low income, or not less than 5 percent rented to very low income, and developer provides commitment to ensure continued availability to these income groups for the period.
- Developer pays in-lieu fees pursuant to local ordinance to result in an equivalent number of units that would otherwise be required in a) above.
- Project provides public open space 5 acres/1,000 residents.

After a public hearing where a legislative body finds that a TPP meets all the requirements, a project can be declared to be an SCP and can be exempted from CEQA.

Sustainable Communities Environmental Assessment

A TPP that does not meet the Sustainable Communities Project Exemption may nevertheless qualify for a Sustainable Communities Environmental Assessment (SCEA) if the project incorporates all feasible mitigation measures, performance standards, or criteria set forth in prior applicable certified environmental impact reports, such as the 2026 RTP PEIR.[28] An SCEA is comparable to a negative declaration since the lead agency must find that all potentially significant impacts of a project have been identified, adequately analyzed, and mitigated to a level of insignificance. However, unlike a negative declaration, the SCEA need not consider the cumulative effects of the project that have been adequately addressed and mitigated in prior EIRs. Also, growth-inducing impacts are not required to be referenced, described, or addressed. Additionally, project specific or cumulative impacts from cars and light duty truck

[28] Pub. Res. Code §21155.2(b)

trips on global warming or the regional transportation network need not be referenced, described, or discussed.

An SCEA is to be circulated for 30 days; comments will be considered; and then the SCEA may be approved after a public hearing provided impacts are mitigated. The SCEA will be reviewed under the substantial evidence standard, which means a court will uphold an agency's decision if there is substantial evidence in light of the whole record to support its action, rather than the less deferential fair argument standard that applies to Negative Declarations.

Transit Priority Project Streamlined Environmental Impact Report

Instead of an SCEA, a lead agency may choose to prepare a streamlined ("limited") EIR for approval of a TPP. If, after conducting an Initial Study, the lead agency determines that an EIR is required, it only need address potentially significant impacts. Where a cumulative effect has been adequately addressed and mitigated in a previous EIR that cumulative effect shall not be treated as cumulatively considerable. The EIR is not required to analyze off-site alternatives to the TPP or discuss a reduced residential density alternative to address the effects of car and light duty truck trips generated by the project. Furthermore, the EIR is not required to include an analysis of growth inducing impacts or any project specific or cumulative impacts from cars and light duty trucks trips generated by the project on global warming or the regional transportation network. The IS must identify any cumulative effects that have been adequately addressed and mitigated in prior applicable certified EIRs and these cumulative effects are not to be treated as cumulatively considerable in the EIR.

Traffic Mitigation Measures

After a public hearing, a legislative body or local jurisdiction may adopt traffic mitigation measures that apply to TPPs, including requirements for the installation of traffic control improvements, street or road improvements, contributions to road improvement or transit funds, transit passes for future residents, or other measures that will avoid or mitigate traffic impacts of TPPs. Such measures must be updated as necessary every five years. If such measures are adopted by a local jurisdiction, no additional traffic mitigation measures are required for TPPs. Measures addressing public health and bicycle safety may still be imposed.

1.13.2 SB 375 Streamlining for Residential and Mixed-Use Projects

SB 375 also provides for general CEQA streamlining for residential and mixed-use residential projects consistent with an SCS. Pursuant to Section 21159.28 of the Public Resources Code, projects that meet the following requirements can be subject to streamlined CEQA review:

- A residential or mixed-use residential project (or a TPP) consistent with the designation, density, building intensity, and applicable policies specified for the project area in an accepted SCS (a residential or mixed-use residential project is a project where at least 75 percent of the total building square footage of the project consists of residential use or a project that is a transit priority project); and

- Incorporates the mitigation measures required by an applicable prior environmental document, e.g., the 2026 RTP EIR.

If a project meets these requirements, any exemptions, negative declarations, mitigated negative declarations, SCEA, EIR or addenda prepared for the projects shall not be required to reference, describe, or discuss:

1. growth-inducing impacts; and

2. any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network.

CEQA Incentive

As previously discussed, SB 375 provides incentives in the form of CEQA streamlining to encourage land use projects that support a reduction in per capita GHG emissions. The land use assumptions used in the SCS do not represent detailed, parcel-level land use designations such as those found within a local jurisdiction's general plan, but rather represent the aggregation of multiple land uses, densities, and intensities that are expected to average out within a neighborhood-sized area by 2049. The lead agency, not Kern COG, will be responsible for making the determination of consistency for CEQA streamlining purposes, pursuant to the provisions of SB 375, for any given proposed project.

The SCS was not developed with the intent that each project to be located within a certain area must exactly equal the density and relative use designations that are indicated by the growth forecast in order for the project to be found consistent with the SCS's use designation, density, building intensity, and applicable policies. Instead, any given project, having satisfied all of the statutory requirements of either a residential/mixed-use project or TPP as described above, may be deemed by the lead agency to be consistent with the SCS.

1.13.3 CEQA Streamlining Under SB 226

The CEQA Streamlining for Infill Projects (SB 226) sets forth a streamlined review process for infill.[29] SB 226 defines "infill project" as a project that (a) consists of one or a combination of the following uses: residential, retail/commercial (where no more than one-half of the project area is used for parking), transit station, school and public office building; and (b) is located within an urban area, and is either on a site that has been previously developed, or on a vacant site where at least 75 percent of the perimeter of the site adjoins (or is separated only by an improved public right-of-way from) parcels that are developed with qualified urban uses.

SB 226 allows limited CEQA review for certain infill projects through a process that resembles "tiering" of EIRs under CEQA. Tiering refers to environmental review of sequential actions, where general matters and environmental effects are examined in a broad EIR for a decision such as adoption of a policy, plan, program, or ordinance, and subsequent narrower or site-specific EIRs are prepared that incorporate by reference the prior EIR and concentrate on environmental effects that can be mitigated or that were not analyzed in the prior EIR. In such instances, the later narrow EIR "tiers" off the prior broad EIR.

SB 226 provides that if an EIR was certified for the enactment or amendment of a city or county general plan, community plan specific plan, or zoning code, CEQA review for approval of a qualifying SB 226 infill project is limited to (a) environmental effects that are specific to the project or project site and were not addressed as significant effects in the prior EIR, or (b) substantial new information showing that environmental effects will be more significant than described in the prior EIR. A lead agency's determination pursuant to new statutory provisions authorizing SB 226 limited CEQA review must be supported by substantial evidence.

Limited CEQA review under SB 226 is available for an infill project located within an MPO region if the project (a) is consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in the SCS, and (b) satisfies all applicable statewide performance standards contained in the Implementation Guidelines. However, SB 226 does not specify which agency is responsible for determining whether the project is consistent with relevant SCS policies. As stated above, SB 375 expressly states that an SCS does not regulate the use of land, and that nothing in an SCS shall be interpreted as superseding the exercise of the land use authority of cities and counties within the region (CA Gov't Code § 65080(b)(2)(K)).[30] Moreover, SB 375 does not require consistency between the SCS and city or county general plan, community plan, specific plan, or local zoning ordinance. As such, for the

---

29 Senate Bill No. 226.

30 California Legislative Information. *Public Resources Code – PRC, Division 13. Environmental Quality, Chapter 2.5. Definitions [21060-21074].*

purpose of determining consistency for CEQA streamlining, lead agencies such as local jurisdictions have the sole discretion in determining a local project's consistency with the 2026 RTP.

1.13.4 Transit-Oriented Infill Projects (SB 743)

SB 743 (Steinberg) was signed into law by Governor Jerry Brown on September 27, 2013, and provides opportunities for CEQA streamlining to facilitate transit-oriented development (TOD), which is to update the *CEQA Guidelines* to include the vehicle miles traveled (VMT)–based transportation impact metric. Prior to SB 743, CEQA transportation impacts were assessed through "Level of Service" (LOS) analysis, which focused exclusively on motor vehicle delay. SB 743 seeks to encourage development of mixed-use, transit-oriented infill projects by: (1) establishing new CEQA exemptions for transit-oriented developments located in Transit Priority Areas that are consistent with an adopted Specific Plan; (2) eliminating the requirement to evaluate aesthetic and parking impacts in those targeted development areas; and (3) directing the OPR to develop an alternative metric to evaluate transportation-related impacts under CEQA.[31]

SB 743 exempts from CEQA residential, employment center, or mixed-use development projects, including any subdivision, or any zoning change that meets all of the following criteria:

1) The project is proposed within a transit priority area.

2) The project is undertaken to implement and is consistent with a specific plan for which an environmental impact report has been certified.

3) The project is consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy accepted by the State Air Resources Board.[32]

The exemption cannot be applied if a project would cause new or worse significant environmental impacts compared to what was analyzed in the environmental impact report for the specific plan. In that case, a supplemental environmental review must be prepared.

Furthermore, "[a]esthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment."[33] However, the exemption for aesthetic impacts does not include impacts to historic or

---

31 California Legislative Information. 2013. *Senate Bill No. 743*.

32 See Pub. Res. Code § 21155.4.

33 Pub. Res. Code § 21099(d).

cultural resources. Local governments retain their ability to regulate a project's transportation, aesthetics, and parking impacts outside of the CEQA process pursuant to local design review ordinances or other discretionary powers.

A Transit Priority Area (TPA) is an area that is located within one-half mile of an existing or planned major transit stop. A "major transit stop" refers to a site containing an existing rail transit station or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods. To qualify as a TPA, a planned major transit stop needs to be scheduled for completion within the planning horizon included in the adopted FTIP or RTP. A TPA is a subset of the High Quality Transit Areas (HQTA) described in the Plan, excluding the one-half-mile buffer area along the high-quality transit corridors (which are corridors with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours).

For infill development, including TOD, SB 743 provides a rationale for the development of a new metric to evaluate CEQA transportation impacts, as the previous LOS practice focused only on motor vehicle delay, which often penalized infill and active transportation projects. SB 743 established that the new transportation impact analysis methodology should appropriately balance the needs of congestion management with statewide goals related to transit-oriented mixed-use infill development, promotion of public health through active transportation, and reduction of GHG emissions. These principles complement the goals and policies of the Plan outlined in Section 2.0, Project Description, of this PEIR.

While SB 743 did not include the substantive specifics of the new CEQA transportation impact analysis methodology, it directed the OPR to develop guidance for establishing an alternative metric for evaluating the transportation impact of projects located within TPAs to replace LOS analysis. The criteria provided by SB 743 for selecting an alternative methodology were that it must serve to promote the reduction of GHG emissions, stimulate the development of multimodal transportation networks, and encourage a diversity of land uses. OPR also provided the option to extend the application of the alternative metric for evaluating CEQA transportation impacts to locations outside of TPAs.

The updated *State CEQA Guidelines* were approved by the Office of Administrative Law and the California Natural Resources Agency on December 28, 2018.[34] The *State CEQA Guidelines* update package included changes to the Guidelines section implementing Senate Bill 743 (§ 15064.3).[35] OPR has also developed a

34 Governor's Office of Planning and Research. *Current CEQA Guidelines Update*. Available online at: http://opr.ca.gov/ceqa/updates/guidelines/

35 Governor's Office of Planning and Research. *Technical Advisory – On Evaluating Transportation Impacts in CEQA*. Available online at: http://opr.ca.gov/ceqa/updates/sb-743/

Technical Advisory on Evaluating Transportation Impacts in CEQA, which contains OPR's technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures.[36]

The revised *CEQA Guidelines* state that vehicle level of service (LOS) and similar measures related to delay shall not be used as the sole basis for determining the significance of transportation impacts, and that as of July 1, 2020, this requirement shall apply statewide, but that until that date, lead agencies may elect to rely on VMT rather than LOS to analyze transportation impacts. (Although CEQA was updated as of January 1, 2019, to specify that VMT is the most appropriate basis for determining significance of transportation impacts.[37]) It should be noted that Kern COG has traditionally undertaken VMT analysis as this metric is more-appropriate for a regional-scale document. While LOS analysis is useful in determining the efficiency of local intersections, it is not a useful tool in determining the efficiency of an entire system, such as the RTP. For these reasons, VMT is the most appropriate tool to understand overall performance of the regional transportation network.

To aid in SB 743 implementation, the following state guidance has been published:

- Technical Advisory on Evaluating Transportation Impacts in CEQA;[38]
- The 2022 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals; and[39]
- AB 130, which authorizes the use of VMT mitigation banking as a mechanism to satisfy certain CEQA mitigation requirements by allowing project impacts to be offset through the purchase of mitigation credits from approved mitigation banks.[40] The Office of Land Use and Climate Innovation (LCI) is in the process of developing guidelines for implementation.

Discussion of the Plan's relationship to these documents is provided in **Section 4.8, Greenhouse Gas Emissions,** and **Section 4.16, Transportation.**

---

36 Governor's Office of Planning and Research. *Technical Advisory – On Evaluating Transportation Impacts in CEQA*. Available online at: http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

37 *CEQA Guidelines* § 15064.3

38 Land Use and Climate Innovation, December 2018 https://lci.ca.gov/docs/20181228-Discussion_Draft_Climate_Change_Adivsory.pdf

39 California Air Resources Board, December 2022 https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf

40 Land Use and Climate Innovation, Program Update #1: Statewide Mitigation Bank for Significant Transportation Impacts, available at: https://www.lci.ca.gov/ceqa/docs/20251229-Statewide_Mitigation_Bank_for_Significant_Transportation_Impacts.pdf

1.13.5 Streamlining Greenhouse Gas Analyses

LCI has published guidance with respect to how to evaluate climate change as a whole, including analysis of transportation impacts (including consideration of SB 743), and how to evaluate different types of projects, including transportation projects and land use plans, is provided in the following document:

- CEQA and Climate Change Advisory, Discussion Draft (LCI, December 2018).

This document summarizes relevant regulations and discusses different approaches (both quantitative and qualitative) to analyzing different types of projects. The document further discusses how the analysis of GHG for individual projects may be streamlined through the preparation of greenhouse gas emission reduction plans, such as climate action plans. The document suggests that emissions from individual projects may best be analyzed and mitigated at the programmatic level in community or regional-level plans, policies, or measures focused on reduction of GHG emissions.[41]

1.13.6 Subsequent Documentation to this PEIR

Kern COG and responsible agencies for projects considered in this PEIR (i.e., lead agencies for transportation and land use projects) may use this PEIR, as appropriate, to evaluate projects contemplated in this PEIR (i.e., transportation projects and a variety of land use projects, ranging from planning projects to individual development projects).

Tiering

Tiering refers to using the analysis of general matters contained in a broader EIR (such as a PEIR) (*State CEQA Guidelines* Section 15152). The broader EIR does not need to go into detail of future projects when the details are not known. When individual land use or transportation projects within the planning area are proposed, they may rely on a PEIR for broad analysis and only need to cover the environmental topics that would result in potentially significant impacts. See *State CEQA Guidelines* §15168(c) for details.

1.14 REPORT FORMAT

A principal objective of CEQA is that the environmental review process provides information to agencies, interested parties, and the public, and that it allows opportunities for public review and comment regarding potential physical environmental impacts of a project. This document has been prepared so as to be as accessible as possible and more understandable for non-technically oriented reviewers, while at the

41 Land Use and Climate Innovation, December 2018 https://lci.ca.gov/docs/20181228-Discussion_Draft_Climate_Change_Adivsory.pdf, accessed March 29, 2026.

same time providing the technical information necessary to document conclusions and inform more technically oriented reviewers and decision makers.

A description of the organization of this EIR and the content of each section is provided below to assist the reader in using this EIR as a source of information about the proposed Project. Sections of the Draft EIR following this introduction are organized as follows:

Section 2.0, Executive Summary, includes a general description of the environmental setting, project description, and alternatives to the proposed project. Environmental impacts and mitigation measures are summarized in a table.

Section 3.0, Project Description, presents a detailed description of the 2022 RTP as required by the *State CEQA Guidelines*.

Section 4.0, Environmental Impact Analysis, contains an analysis of each of the environmental topics addressed in this PEIR.

Section 5.0, Alternatives, provides an analysis of alternatives to the proposed Project.

Section 6.0, Other CEQA Considerations, evaluates significant irreversible environmental changes and provides an overview of those environmental topics for which Kern COG has determined the proposed Project would not result in a significant impact.

Section 7.0, List of EIR Preparers, provides a list of persons involved in the preparation of this EIR.

Section 8.0, References and Persons Consulted, provides a list of all organizations and persons contacted during preparation of the Draft EIR, and a list of all documents used as a basis of information for the Draft EIR.

Appendices to this EIR include the NOP and written responses, as well as selected technical reports and data used or generated during preparation of the Draft EIR.

2.0 EXECUTIVE SUMMARY

The purpose of the executive summary is to provide a clear and simple description of the project and its potential environmental impacts. Section 15123 of the *California Environmental Quality Act (CEQA) Guidelines*[1] requires the executive summary to identify each significant effect with proposed mitigation measure(s) and alternatives that would minimize or avoid that effect. The summary is also required to identify areas of controversy known to the Lead Agency, including issues raised by agencies and the public, and issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects.

2.1 PROJECT LOCATION AND SETTING

Kern County forms the southern end of the California Central Valley and is located just north of Los Angeles County, approximately 131 miles northeast of the City of Los Angeles. Regional access is provided by US Route 395 (US 395), Interstate Route 5 (I-5), State Route 14 (SR-14), State Route 33 (SR-33), State Route 43 (SR-43), State Route 58 (SR-58), State Route 99 (SR-99), State Route 155 (SR-155), State Route 166 (SR-166), and State Route 178 (SR-178).

The 2026 Regional Transportation Plan and Sustainable Communities Strategy (RTP) area encompasses the entire County, although transportation and land use projects are more heavily focused in specific urban areas, including Metro Bakersfield, than other suburban and rural parts of the County. The County spans approximately 8,171 square miles and is bound by the Coast Ranges on the west and the lower portion of the Sierra Nevada mountain range on the east. Several counties, including Los Angeles, Ventura, San Luis Obispo, Kings, Tulare, Inyo, and San Bernardino County, form the periphery boundary of Kern County.

2.2 PROJECT OBJECTIVES

At the core of the 2026 RTP are seven goals:

1. **Mobility** – Improve the mobility of people and freight.

2. **Accessibility** – Improve accessibility to, and the economic well-being of, major employment and other regional activity centers.

---

1 *State CEQA Guidelines*, Section 15123. Available online at: https://govt.westlaw.com/calregs/Document/IB5A2CE00D48811DEBC02831C6D6C108E?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default), accessed on April 21, 2026.

3. **Reliability and Safety** – Improve the reliability and safety of the transportation system.

4. **Efficiency** – Maximize the efficiency and cost effectiveness of the existing and future transportation system.

5. **Livability** – Promote livable communities and satisfaction of consumers with the transportation system.

6. **Sustainability** – Provide for the enhancement and expansion of the system while minimizing effects on the environment.

7. **Equity** – Ensure an equitable distribution of the benefits among various demographic and user groups.

While all goals are considered interrelated and important, mobility is considered the plan's highest goal.

2.3 PROJECT CHARACTERISTICS

The 2026 RTP is a 23-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It has been developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, state, and federal agencies. California's Sustainable Communities and Climate Protection Act, or Senate Bill (SB) 375, calls for the Kern County RTP to include a Sustainable Communities Strategy (SCS) that reduces greenhouse gas (GHG) emissions from passenger vehicles and light-duty trucks. Executive Order B-30-15, signed by Governor Brown in April 2015, and SB 32, approved in September 2016, established a statewide GHG reduction goal of 40 percent below 1990 levels by 2030 from all sources. This is the most aggressive benchmark enacted by any government in North America to reduce carbon emissions. The California Air Resources Board (CARB) sets the emissions reduction target for each region. Targets are reflective of conditions in each area of the state and are tailored to address conditions in each area. SB 375 will help meet the state goals included in Assembly Bill 32, the Global Warming Solutions Act of 2006. Meeting these targets will point the County toward overall sustainability and will provide benefits beyond reducing carbon emissions.

2.3.1 Regional Transportation Plan

The 2026 RTP is a long-range Regional Transportation Plan that includes projects, policies, and strategies to create a blueprint for the region's growth through 2049. The 2022 RTP included improvements to the transportation system, including closures to critical gaps in the network that hinder access to certain parts of the region, as well as the strategic expansion of the transportation system. In addition to new projects

that are included in the Plan, many projects from the 2022 RTP are included in the 2026 RTP and are now considered committed or at least reasonably foreseeable (i.e., they are in the Transportation Improvement Program (TIP) and are thus included in the No Project condition).

The 2026 RTP is intended to meet the changing socioeconomic, transportation infrastructure, financial, technological, and environmental conditions of the region. Individual projects are preliminarily identified in the 2026 RTP. Because projects are identified at a conceptual level for purposes of the RTP, this PEIR is programmatic in nature and does not specifically analyze individual projects. Project-level analyses will be prepared by implementing agencies on a project-by-project basis as projects proceed through the design, evaluation, and decision-making process. Project-specific planning and implementation undertaken by each project sponsor/implementing agency will depend on a number of issues, including policies, programs, and projects adopted at the local level; restrictions on federal, state, and local transportation funds; the results of feasibility studies for particular corridors; and project-specific environmental review.

In 2006, California became the first state in the country to adopt statewide GHG emissions reduction targets through AB 32. This law codifies the Executive Order S-3-05 requirement goal to reduce statewide emissions to 1990 levels by 2020. AB 32 codifies the Executive Order S-3-05 goal to reduce statewide GHG emissions to 1990 levels by 2020. AB 32 resulted in CARB's 2008 adoption of a Climate Change Scoping Plan (Scoping Plan), outlining the state's plan to achieve emissions reductions through a combination of direct regulations, alternative compliance mechanisms, various incentives, voluntary actions, market-based mechanisms, and funding. The Scoping Plan identifies local governments as "essential partners" in the state's efforts to reduce emissions. The First Update to the Climate Change Scoping Plan was approved in 2014. In 2016, the Legislature passed SB 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. In November 2017, CARB adopted "California's 2017 Climate Change Scoping Plan," which sets forth a strategy for achieving California's 2030 GHG target and makes substantial advances towards reaching the 2050 climate goal of reducing GHG emissions by 80 percent below 1990 levels. In December 2022, CARB adopted the 2022 Scoping Plan for Achieving Carbon Neutrality, which identifies a path for California to achieve carbon neutrality by 2045 through transportation sustainability, reductions in vehicle miles traveled, clean energy deployment, and coordinated local land use planning efforts. As noted above, this RTP includes an SCS pursuant to SB 375 (codified in Section 65080 of the California Government Code). SB 375 will help meet the state goals included in AB 32. SB 375 addresses greenhouse (GHG) gas emissions from cars and light-duty trucks and aims to reduce these emissions through land use strategies. CARB identified preliminary GHG goals for the Valley, including Kern County.

According to Section 65080 of the California Government Code, in summary, the SCS must:

- identify existing land use;
- identify areas to accommodate long-term housing needs;
- identify areas to accommodate an eight-year projection of regional housing needs;
- identify transportation needs and the planned transportation network;
- consider resource areas and farmland;
- consider state housing goals and objectives;
- set forth a forecasted growth and development pattern; and
- comply with federal law for developing and RTP.

Kern COG's SCS demonstrates the region's ability to attain the GHG emissions reduction targets identified by CARB. The SCS outlines Kern COG's plan for integrating the transportation network and related strategies with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands.

Prior to adopting the 2026 RTP, Kern COG's Board must certify the PEIR for the Plan. Local agencies, as well as transportation implementation agencies, will use the 2026 RTP and this PEIR as reference materials as part of their planning and project evaluation processes.

Over the lifetime of the 2026 RTP, Kern forecasts that there will be an additional 106,900 people added to this large and diverse area. The 2026 RTP is based on growth forecasts in the region in 2049, as shown in **Table 2.0-1, Existing and 2046 Population, Households, and Employment**.

Table 2.0-1
Existing and 2049 Population, Households, and Employment

	Population		Households		Employment	
	Existing (2025)	Plan (2049)	Existing (2025)	Plan (2049)	Existing (2025)	Plan (2049)
Kern COG	914,754	1,017,200	293,345	351,900	357,420	426,900

Source: Kern COG 2026, Impact Sciences 2026

2.3.2 Sustainable Communities Strategy

The passage of SB 375 gave Kern COG a new area of responsibility and provided for a renewed opportunity to focus on an integrated planning effort for the future. SB 375 was established to implement the state's GHG emissions reduction goals, as set forth by AB 32, in the sector of cars and light trucks.

This mandate requires CARB to determine per-capita GHG emission reduction targets for each MPO in the state at two points (2020 and 2035).

On March 22, 2018, CARB updated its 2010 targets for lowering emissions in the San Joaquin Valley. The targets call for a 9 percent reduction in per capita emissions from passenger vehicles and light trucks by 2020, and a 15 percent reduction by 2035 through land use and transportation planning.

Because GHG emissions in the transportation sector relate closely to vehicle miles traveled (VMT), a mandated GHG reduction for cars and light trucks essentially requires Kern COG to devise a regional plan and a series of strategies that will produce a per capita reduction in VMT over the next 24 years, although strategies that do not reduce VMT are also included (such as efforts to encourage non-polluting vehicles). Under SB 375, Kern COG and California's 17 other MPOs must address GHG reduction in an SCS as part of the RTP.

However, the RTP is at its core a transportation plan. The SCS seeks to better coordinate the process that Kern COG and local agencies use to prioritize long-range transportation investments by ensuring that they are aligned with the forecasted development patterns that achieve RTP goals.

2.4 ALTERNATIVES TO THE PROJECT

CEQA requires that an environmental impact report (EIR) describe a range of reasonable alternatives to a proposed project that could feasibly avoid or lessen any significant environmental impacts, while attaining the basic objectives of the project. Comparative analysis of the impacts of these alternatives is required. In response to the significant impacts associated with the proposed project, Kern COG has developed and considered several alternatives to the project. These alternatives include:

Alternative 1 – No Project

The No Project Alternative is required by Section 15126.6(e)(2) of the *State CEQA Guidelines* and assumes that the proposed project would not be implemented. The No Project Alternative allows decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. However, "no project" does not necessarily mean that development will be prohibited. The No Project Alternative includes "what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services."[2] For purposes of this document, the No Project Alternative includes only those transportation projects that are included in the first year of the previously conforming

2 CEQA § 15126.6[e][2]. Available online at: https://www.law.cornell.edu/regulations/california/14-CCR-15126.6 , accessed on April 20, 2026.

transportation plan and/or TIP, or have completed environmental review by January 2026. These reasonably foreseeable projects fulfill the definition of the CEQA-mandated "No Project Alternative." The growth scenario included in the No Project Alternative is based on local general plans and growth patterns reflective of growth that would occur without the RTP. However, it is noted that communities have started to incorporate sustainable planning practices into their general plans and, therefore, growth trends (i.e., the No Plan scenario) are starting to converge on a sustainable pattern consistent with RTP strategies.

Alternative 2 – Old Plan Alternative

The Old Plan Alternative is an update of the adopted 2026 RTP, reflecting the most recent regional growth forecast, transportation planning decisions, and growth pattern assumptions from the 2026 RTP. This Old Plan alternative has some similar development pattern strategies as those included within the 2026 Sustainable Communities Strategy (SCS), but includes transportation projects seen in the 2026 RTP. The Old Plan also includes less funding for maintenance, transit, and alternative transportation projects. The growth scenario for the Old Plan is a combination of local input and existing general plan and land use data provided by local jurisdictions during the 2026 RTP and Kern Regional Blueprint process, which represented a significant change from previous development patterns.

Alternative 3 –Infill Alternative

The Infill Alternative would result in a more aggressive development pattern than the other Alternatives. Under the Infill Alternative, 53 percent of new growth would be accommodated as infill development, with 91 percent of housing as medium or high density in the predominant urban area. Countywide, the housing mix would average about two-thirds medium or high density. The transportation network would be the same as under the Plan Alternative, with the exception that passenger rail and transit improvements are accelerated. **Table 2.0-2** summarizes the housing mix for each of the alternatives. The Plan and each alternative maintain a constant total for population, households, and jobs in 2049.

Table 2.0-2
Summary of Growth for 2026 RTP /SCS and Alternatives

Alternative	% Infill All Growth	Metro % Infill All Growth	RESIDENTIAL – GROWTH ONLY					
			Multi-family		Small Lot/Townhome		Large Lot	
			County	Metro	County	Metro	County	Metro
Plan	29%	59%	18%	29%	24%	32%	58%	39%
No Project	25%	48%	9%	14%	18%	26%	73%	60%
Old Plan	29%	59%	18%	25%	27%	35%	55%	40%
Infill Alternative	53%	94%	38%	64%	19%	27%	43%	10%

Source: Kern COG, 2026

2.5 AREAS OF KNOWN CONTROVERSY

After conducting a preliminary review in accordance with Section 15060 of the *State CEQA Guidelines*, Kern COG determined that a PEIR should be prepared to address the potential environmental impacts of the Plan. Following this determination, a Notice of Preparation (NOP) was prepared and circulated between April 21, 2025, and May 21, 2025, for the required 30-day review period. Kern COG held an in-person scoping meeting on May 1, 2025, to solicit comments and to inform the public of the proposed EIR. One comment was received in response to the published NOP (provided in **Appendix 1.0**). It identified the following environmental topic recommended for analysis in the Draft EIR:

- Biological resources

2.6 ISSUES TO BE RESOLVED

The *State CEQA Guidelines* require an EIR to present issues to be resolved by the lead agency. These issues include the choice between alternatives and whether or how to mitigate potentially significant impacts. The major issues to be resolved by Kern COG, as the Lead Agency for the project, include the following:

- Whether the recommended mitigation measures should be adopted or modified;
- Whether additional mitigation measures need to be applied to the project; and
- Whether the project or an alternative should be approved.

2.7 SUMMARY OF PROJECT IMPACTS

A summary of the environmental impacts associated with implementation of the proposed project, mitigation measures included to avoid or lessen the severity of potentially significant impacts, and

residual impacts, is provided in **Table 2.0-3, Summary of Project Impacts, Mitigation Measures, and Residual Impacts**, below.

As discussed in **Chapter 1.0, Introduction**, Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

Table 2.0-3
Summary of Project Impacts, Mitigation Measures, and Residual Impacts

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
AESTHETICS		
Impact AES-1: Have a substantial adverse effect on a scenic vista. **Impact AES-2:** Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	**MM AES-1:** Impacts to aesthetic resources shall be minimized through cooperation, information sharing regarding the locations of designated scenic vistas, and regional program development as part of Kern COG's ongoing regional planning efforts. **MM AES-2:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to identify and protect panoramic views and significant landscape features or landforms and implement project-specific mitigation as applicable. If it is determined that a project would significantly obstruct scenic views, implementing and local agencies should consider alternative designs that seek to avoid and/or minimize obstruction of scenic views to ensure compliance with Caltrans regulations for scenic vistas and the goals and policies with county and city general plans as applicable and feasible. Project-specific design measures may include reduction in height of improvements or width of improvements to reduce obstruction of views, or relocation of improvements to reduce obstruction of views. Additional measures may include the following, or other comparable measures identified by the Lead Agency: • Use a palette of colors, textures, building materials that are graffiti-resistant, and/or plant materials that complement the surrounding landscape and development. • Use contour grading to better match surrounding terrain. Contour edges of major cut-and-fill to provide a more natural looking finished profile. • Use alternating facades to "break up" large facades and provide visual interest. • Design new corridor landscaping to respect existing natural and man-made features and to complement the dominant landscaping of the surrounding areas. • Replace and renew landscaping along corridors with road widenings, interchange projects, and related improvements. • Retain or replace trees bordering highways, so that clear-cutting is not evident. • Provide new corridor landscaping that respects and provides appropriate transition to existing natural and man-made features and is complementary to the dominant landscaping or native habitats of surrounding areas. • Reduce the visibility of construction staging areas by fencing and screening these areas with low contrast materials consistent with the surrounding environment, and by revegetating graded slopes and exposed earth surfaces at the earliest opportunity. • Use see-through safety barrier designs (e.g., railings rather than walls). • Implement design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions in design of projects to minimize contrasts in scale and massing between the project and surrounding natural forms and	Significant at the regional level; less than significant at the TPA level.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	developments. Avoid, if possible, large cuts and fills when the visual environment (natural or urban) would be substantially disrupted. Site or design of projects should minimize their intrusion into important viewsheds and use contour grading to better match surrounding terrain. **MM AES-3:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to protect panoramic views and views of significant landscape features or landforms and implement project-specific mitigation as applicable. Kern COG will facilitate and encourage implementing and local agencies to consider taking the following (or equivalent) actions: • require that the scale and massing of new development in higher-density areas provide appropriate transitions in building height and bulk that are sensitive to the physical and visual character of adjoining neighborhoods that have lower development intensities and building heights; ensure building heights stepped back from sensitive adjoining uses to maintain appropriate transitions in scale and to protect scenic views; • avoid siting electric towers, solar power facilities, wind power facilities, communication transmission facilities and/or above ground lines along scenic roadways and routes, to the maximum feasible extent.	
Impact AES-3: In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings; (Public views are those that are experienced from publicly accessible vantage points). In an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.	**MM AES-4:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to design projects to be visually compatible with surrounding areas that possess high aesthetic value. Implementing and local agencies should design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. The design of projects should minimize intrusion into important viewsheds and use contour grading to better match surrounding terrain. To the extent feasible, landscaping should be designed to add significant natural elements and visual interest to soften hard edges. Projects should, to the extent feasible, avoid large cuts and fills when the visual environment (natural or urban) would be substantially disrupted. **MM AES-5**: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to establish development standards for visually sensitive areas. Prior to approval of individual projects, Kern COG will encourage and facilitate implementing and local agencies to apply such development standards to maintain compatibility with surrounding natural areas, including site coverage, building height and massing, building materials and color, landscaping, site grading, etc. **MM AES-6:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to ensure that sites should be kept in a blight/nuisance-free condition. Any existing blight or nuisance should be abated within 60 to 90 days of approval, unless an earlier date is specified elsewhere.	Significant at the regional level; less than significant at the TPA level.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact AES-4: Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.	**MM AES-7:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to design measures to reduce glare, light, and shadow. As part of planning, design, and engineering for projects, implementing and local agencies should ensure that projects proposed near light-sensitive uses avoid substantial spillover lighting. Design measures could include the following: • Use lighting fixtures that are adequately shielded to a point below the light bulb and reflector and that prevent unnecessary glare onto adjacent properties. • Restrict the operation of outdoor lighting for construction and operation activities to the hours of 7:00 a.m. to 10:00 p.m. • Use high pressure sodium and/or cut-off fixtures instead of typical mercury-vapor fixtures for outdoor lighting. • Use unidirectional lighting to avoid light trespass onto adjacent properties. • Design exterior lighting to confine illumination to the project site, and/or to areas which do not include light-sensitive uses. • Provide structural and/or vegetative screening from light-sensitive uses. • Shield and direct all new street and pedestrian lighting away from light-sensitive off-site uses. • Use non-reflective glass or glass treated with a non-reflective coating for all exterior windows and glass used on building surfaces. • Architectural lighting shall be directed onto the building surfaces and have low reflectivity to minimize glare and limit light onto adjacent properties.	Significant at the regional level; less than significant at the TPA level.
AGRICULTURAL RESOURCES		
Impact AG-1: Convert prime farmland, unique farmland, or farmland of statewide importance (farmland), as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.	**MM AG-1:** Kern GOG shall facilitate minimizing future impacts to Important Farmland resources through cooperation, information sharing, and regional program development as part of Kern COG's ongoing regional planning efforts, such as web-based planning tools for local government and other GIS tools and data services. Lead Agencies, such as county and city planning departments, shall be consulted during this update process. **MM AG-2:** Kern COG shall work with member agencies and the region's farmland interests to develop regional best practices information for buffering farmland from urban encroachment, resolving conflicts that prevent farming on hillsides and other designated areas, and closing loopholes that allow conversion of non-farm uses without a grading permit. **MM AG-3:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to establish preservation ratios to minimize loss of prime, unique, and statewide importance farmland, such as the preservation of 1 acre of unprotected agricultural land being permanently conserved for each acre of agricultural land developed on major projects affecting more than 100 acres of agricultural land, or as consistent with local agencies best practice. **MM AG-4:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to establish	Potentially significant at the regional level; less than significant at the TPA level.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	best practices for encouraging efficient use of water. **MM AG-5**: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to encourage urban development, in place of development in rural and sensitive areas. Local jurisdictions should seek funding to prepare specific plans and related environmental documents to facilitate mixed-use development, and to allow these areas to serve as receiver sites for transfer of development rights away from environmentally sensitive lands and rural areas outside established spheres of influence and urban service district boundaries. **MM AG-6**: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to identify and minimize impacts to agricultural resources through project design. Prior to the design approval of RTP transportation projects, the implementing agency should assess the project area for agricultural resources and constraints. For federally funded projects, implementing and local agencies are required to follow the rules and regulations of Farmland Protection Policy Act including determining the impact by completing the Farmland Conversion Impact Rating form (AD-1006). For non-federally funded projects, implementing and local agencies should assess projects for the presence of important farmlands (prime farmland, unique farmland, farmland of statewide importance), and if present, perform a Land Assessment and Site Evaluation (LESA). If significant agricultural resources are identified within the limits of a project, implementing and local agencies should consider alternative designs that seek to avoid and/or minimize impacts to the agricultural resources. Design measures could include, but are not limited to, reducing the footprint of a roadway or development or relocating/realigning a project to avoid important and significant farmlands. If a project cannot be designed without complete avoidance of important or significant farmlands, implementing and local agencies should compensate for unavoidable conversion impacts in accordance with the Farmland Protection Policy Act and local and regional standards, which may include enrolling off-site agricultural lands under a Williamson Act contract or other conservation or agricultural easement, mitigation banks, or paying mitigation fees.	
Impact AG-2: Conflict with existing zoning or land use designation for agricultural use, or a Williamson Act contract.	Implement **Mitigation Measures AG-1** through **AG-6.**	Potentially significant at the regional level; less than significant at the TPA level.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact AG-3: Conflict with existing zoning or land use designation for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220(G)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104(G)).	**MM AG-7**: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to establish preservation ratios to minimize loss of forest land, and timberland, such as 1 acre of unprotected forest land and timber land to be permanently conserved for each acre of open space developed as a result of individual projects affecting more than 100 acres of forest land and timberland. **MM AG-8**: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to implement design features in transportation projects to minimize impacts. Implementing agencies should consider corridor realignment, buffer zones and setbacks, and berms and fencing where feasible, to avoid forest lands and timberlands and to reduce conflicts between transportation uses and forest and timberlands. **MM AG-9**: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to consider tree plantings at a minimum 1:1 ratio to mitigate impacts to forest lands.	Potentially significant at the regional level; less than significant at the TPA level.
Impact AG-4: Result in the loss of forest land or conversion of forest land to non-forest use. **Impact AG-5** Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use.	Implement Mitigation **Measures AG-1** through **AG-5.**	Potentially significant at the regional level; less than significant at the TPA level.
AIR QUALITY		
Impact AIR-1: Conflict with or obstruct implementation of the applicable air quality plan	No mitigation is required.	Less than significant at the regional and TPA level.
Impact AIR-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation.	No mitigation is required.	Less than significant at the regional and TPA level.
Impact AIR-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.	**MM AIR-1:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to require contractors to assemble a comprehensive inventory list (i.e., make, model, engine year, horsepower, emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) that could be used an aggregate of 40 or more hours for the construction project and apply the following: • Prepare a plan for approval by the applicable air district demonstrating that the heavy-duty (equal to or greater than 50 horsepower) off-road equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at time of construction. A Construction Mitigation Calculator (MS Excel) may be downloaded from the Sacramento Metropolitan Air Quality Management District (SMAQMD) web site to perform the fleet average evaluation	Significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	http://www.airquality.org/ceqa/index.shtml. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology (Carl Moyer Guidelines), after-treatment products, voluntary offsite mitigation projects, provide funds for air district off-site mitigation projects, and/or other options as they become available. The air district should be contacted to discuss alternative measures. • Ensure that all construction equipment is properly tuned and maintained. • Minimize idling time to 5 minutes – saves fuel and reduces emissions. • Provide an operational water truck on-site at all times. Apply water to control dust as needed to prevent dust impacts off-site. • Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators. • Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites. • As appropriate require that portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, obtain California Air Resources Board (ARB) Portable Equipment Registration with the state or a local district permit. Arrange appropriate consultations with the ARB or the District to determine registration and permitting requirements prior to equipment operation at the site.	
Impact AIR-4: Expose sensitive receptors to substantial pollutant concentrations	**MM AIR-2**: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to implement measures adopted by ARB designed to attain federal air quality standards for PM2.5. ARB's strategy includes the following elements: • Set technology forcing new engine standards; • Reduce emissions from the in-use fleet; • Require clean fuels, and reduce petroleum dependency; • Work with USEPA to reduce emissions from federal and state sources; and • Pursue long-term advanced technology measures. • Proposed new transportation–related SIP measures include: **On-road Sources** – Improvements and Enhancements to California's Smog Check Program – Expanded Passenger Vehicle Retirement – Modifications to Reformulated Gasoline Program – Cleaner In-Use Heavy-Duty Trucks – Ship Auxiliary Engine Cold Ironing and Other Clean Technology	Significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	– Cleaner Ship Main Engines and Fuel – Port Truck Modernization – Accelerated Introduction of Cleaner Line-Haul Locomotives – Clean Up Existing Commercial Harbor Craft **Off-road Sources** – Cleaner Construction and Other Equipment – Cleaner In-Use Off-Road Equipment – Agricultural Equipment Fleet Modernization – New Emission Standards for Recreational Boats – Off-Road Recreational Vehicle Expanded Emission Standards **MM AIR-3**: Kern COG shall pursue the following activities in reducing the impact associated with health risk within 500 feet of freeways and high-traffic volume roadways: • Participate in on-going statewide deliberations on health risks near freeways and high-traffic volume roadways. This involvement includes inputting to the statewide process by providing available data and information such as the current and projected locations of sensitive receptors relative to transportation infrastructure; • Work with air agencies including CARB and the air districts in the Kern COG region to support their work in monitoring the progress on reducing exposure to emissions of PM10 and PM2.5 for sensitive receptors, including schools and residents within 500 feet of high-traffic volume roadways; • Work with stakeholders to identify planning and development practices that are effective in reducing health impacts to sensitive receptors; and • Share information on all of the above efforts with stakeholders, member cities, counties and the public. **MM AIR-4:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to comply with the CARB recommendations to achieve an acceptable interior air quality level for sensitive receptors, project sponsors can and should identify appropriate measures, to be incorporated into project building design for residential, school and other sensitive uses located within 500 feet (or other appropriate distance as may be identified by CARB) of freeways, heavily travelled arterials, railways and other sources of Diesel particulate Matter and other known carcinogens. The measures should include one or more of the following methods as appropriate: a. The project sponsor should retain a qualified air quality consultant to prepare a health risk assessment (HRA) in accordance with the California Air Resources Board and the Office of Environmental Health and Hazard Assessment requirements to determine the exposure of project residents/occupants/users to stationary air quality polluters prior to issuance of a demolition, grading, or building permit. The HRA should be submitted to the Lead Agency for review and approval. The sponsor should implement the approved HRA	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	recommendations, if any. If the HRA concludes that the air quality risks from nearby sources are at or below acceptable levels, then additional measures are not required. b. The project sponsor should implement the following features that have been found to reduce the air quality risk to sensitive receptors and should be included in the project construction plans. These should be submitted to the appropriate agency for review and approval prior to the issuance of a demolition, grading, or building permit and ongoing. i. Do not locate sensitive receptors near distribution center's entry and exit points. ii. Do not locate sensitive receptors in the same building as a perchloroleythene dry cleaning facility. iii. Maintain a 50-foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year). iv. 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. Either HEPA filters or ASHRAE 85 percent supply filters should be used. v. Retain a qualified HV consultant or HERS 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. vi. Maintain positive pressure within the building. vii. Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air. viii. Achieve a performance standard of at least 4 air exchanges per hour of recirculation ix. Achieve a performance standard of 0.25 air exchanges per hour of in unfiltered infiltration if the building is not positively pressurized. c. Project sponsor should maintain, repair and/or replace HV system or prepare an Operation and Maintenance Manual for the HV system and the filter. The manual should include the operating instructions and maintenance and replacement schedule. This manual should be included in the CC&R's for residential projects and distributed to the building maintenance staff. In addition, the sponsor should prepare a separate Homeowners Manual. The manual should contain the operating instructions and maintenance and replacement schedule for the HV system and the filters. It should also include a disclosure to the buyers of the air quality analysis findings. d. To the maximum extent practicable the Lead Agency can and should ensure that	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	private (individual and common) exterior open space, including playgrounds, patios, and decks, should either be shielded from stationary sources of air pollution by buildings or otherwise buffered to further reduce air pollution exposure for project occupants. **MM AIR-5:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies, as applicable and feasible, to investigate (using for example procedures and guidelines for PM hotspot analysis consistent with USEPA (2010) PM guidance) the relationship between 1) any increases in PM10 and PM2.5 within 500 feet of freeways in their jurisdiction, and 2) existing sensitive receptors in that area that do not have adequate air filtration to reduce such impacts to a less than significant level. To the extent that existing sensitive receptors are identified that do not have adequate air filtration, local jurisdictions may establish a program by which project sponsors can mitigate significant increases in PM10 and PM2.5 (e.g., by providing a retrofit program for older higher emitting vehicles, anti-idling requirements or policies, controlling fugitive dust, routing traffic away from populated zones, replacing older buses with cleaner buses, and paying in to a fund established to retrofit sensitive receptors with HEPA filters when sensitive receptors are located within 500 feet of freeways and high-traffic volume roadways that generate substantial diesel particulate emissions). **MM AIR-6:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies, as applicable and feasible, to plant appropriate vegetation to reduce PM10/PM2.5 when constructing a sensitive receptor within 500 feet of freeways and high-traffic volume roadways generating substantial diesel particulate emissions. **MM AIR-7:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies for major transportation projects (especially those that generate substantial diesel particulate emissions) in the region, if health risks are shown to increase significantly at sensitive receptors within 500 feet of a transportation facility, to consider applicable mitigation. Examples include planting appropriate vegetation and retrofitting existing sensitive uses with air filtration to reduce potential health risk impacts to a less than significant level.	
Impact AIR-5: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	No mitigation is required.	Less than significant at the regional and TPA level.
BIOLOGICAL RESOURCES		
Impact BIO-1: Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS	**MM BIO-1:** Kern COG shall facilitate reducing future impacts to species identified as candidate, sensitive, or special status species and associated habitats through cooperation, information sharing, and program development. Kern COG shall consult with the resource agencies, such as the USFWS, NMFS, USACOE, USFS, BLM, and CDFW, as well as local jurisdictions including cities and counties, to incorporate designated critical habitat, federally protected wetlands, the protection of sensitive natural communities and riparian habitats, designated open space or protected wildlife habitat, local policies and tree preservation ordinances, applicable HCPs and NCCPs, or other related planning	Significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	documents into Kern COG's ongoing regional planning efforts. Planning efforts shall be consistent with the approach outlined in the California Wildlife Action Plan. **MM BIO-2:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to document Special-Status Plant Populations as follows: Retain a qualified botanist to document the presence or absence of special-status plants before project implementation. Implement the following steps to document special- status plants: • **Review Existing Information.** The botanist shall review the most current existing information to develop a list of special-status plants that have a potential to occur in the specific project area. Sources of information consulted shall include CDFW's CNDDB, previously prepared environmental documents, city and county general plans, HCPs and NCCPs, and the CNPS electronic inventory. • **Coordinate with Agencies.** The botanist shall coordinate with the appropriate agencies (CDFW, USFWS, Caltrans) to discuss botanical resource issues and determine the appropriate level of surveys necessary to document special-status plants. • **Conduct Field Studies.** The botanist shall evaluate existing habitat conditions for each project and determine what level of botanical surveys may be required. The type of botanical survey shall depend on species richness, habitat type and quality, and the probability of special-status species occurring in a particular habitat type. Depending on these factors and the proposed construction activity, one or a combination of the following levels of survey may be required: • **Habitat Assessment.** A habitat assessment will be conducted to determine whether suitable habitat is present. This type of assessment can be conducted at any time of year and is used to assess and characterize habitat conditions and determine whether return surveys are necessary. If no suitable habitat is present, no additional surveys shall be required. • **Species-Focused Surveys.** Species-focused surveys (or target species surveys) shall be conducted if suitable habitat is present for special-status plants. The surveys shall focus on special-status plants that could grow in the region and would be conducted during a period when the target species are evident and identifiable. • **Floristic Protocol-Level Surveys.** Floristic surveys that follow the CNPS Botanical Survey Guidelines shall be conducted in areas that are relatively undisturbed and/or have a moderate to high potential to support special-status plants. The CNPS Botanical Survey Guidelines require that all species be identified to the level necessary to determine whether they qualify as special-status plants or are plant species with unusual or significant range extensions. The guidelines also require that field surveys be conducted when special-status plants that could occur in the area are evident and identifiable. To account for different special-status plant identification periods, one or more series of field surveys may be required in spring and summer months. Special-status plant populations identified during the field surveys shall be mapped	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	and documented as part of CEQA and NEPA process, as applicable. **MM BIO-3:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to avoid or minimize impacts on Special-Status Plant Populations by redesigning the Project, protecting special-status plant populations, and developing a transplantation plan (If necessary and approved by resource agencies) If special-status plants are identified in their project area, the proponents of specific projects included in the proposed RTP shall implement the following measures, as appropriate, to avoid and minimize impacts on special-status plants: • Redesign or modify their project to avoid direct and indirect impacts on special status plants, if feasible. • Protect special-status plants near their project site by installing environmentally sensitive area fencing (orange construction barrier fencing) around special-status plant populations. The environmentally sensitive area fencing shall be installed at least 20 feet from the edge of the population. The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area. • Coordinate with the appropriate resource agencies and local experts to determine whether transplantation is feasible. If the agencies concur that transplantation is a feasible mitigation measure, the botanist shall develop and implement a transplantation plan through coordination with the appropriate agencies. The special-status plant transplantation plan shall involve identifying a suitable transplant site; moving the plant material and seed bank to the transplant site; collecting seed material and propagating it in a nursery; and monitoring the transplant sites to document recruitment and survival rates. **MM BIO-4:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to document special-status wildlife species and their habitats as follows: Retain a qualified wildlife biologist to document the presence or absence of suitable habitat for special-status wildlife in the project study area. The following steps shall be implemented to document special-status wildlife and their habitats for each project: • **Review Existing Information.** The wildlife biologist shall review existing information to develop a list of special-status wildlife species that could occur in the project area. The following information shall be reviewed as part of this process: the USFWS special-status species list for the project region, CDFW's CNDDB, previously prepared environmental documents, city and county general plans, HCPs and NCCPs (if applicable), and USFWS issued biological opinions for previous projects. • **Coordinate with State and Federal Agencies.** The wildlife biologist shall coordinate with the appropriate agencies (CDFW, USFWS, and Caltrans) to discuss wildlife resource issues in the project region and determine the appropriate level of surveys	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	necessary to document special-status wildlife and their habitats. • **Conduct Field Studies.** The wildlife biologist shall evaluate existing habitat conditions and determine what level of biological surveys may be required. The type of survey required shall depend on species richness, habitat type and quality, and the probability of special-status species occurring in a particular habitat type. Depending on the existing conditions in the project area and the proposed construction activity, one or a combination of the following levels of survey may be required: • **Habitat Assessment.** A habitat assessment determines whether suitable habitat is present. This type of assessment can be conducted at any time of year and is used to assess and characterize habitat conditions and to determine whether return surveys are necessary. If no suitable habitat is present, no additional surveys shall be required. • **Species-Focused Surveys.** Species-focused surveys (or target species surveys) shall be conducted if suitable habitat is present for special-status wildlife and if it is necessary to determine the presence or absence of the species in the project area. The surveys shall focus on special-status wildlife species that have the potential to occur in the region. The surveys shall be conducted during a period when the target species are present and/or active. • **Protocol-Level Wildlife Surveys.** The project proponent shall comply with protocols and guidelines issued by responsible agencies for certain special-status species. USFWS and CDFW have issued survey protocols and guidelines for several special-status wildlife species that could occur in the project region, including (but not limited to) the California red-legged frog, blunt-nosed leopard lizard, desert tortoise and San Joaquin kit fox. The protocols and guidelines may require that surveys be conducted during a particular time of year and/or time of day when the species is present and active. Many survey protocols require that only a USFWS permitted or CDFW-approved biologist perform the surveys. The project proponent shall coordinate with the appropriate state or federal agency biologist before the initiation of protocol-level surveys to ensure that the survey results would be valid. Because some species can be difficult to detect or observe, multiple field techniques may be used during a survey period and additional surveys may be required in subsequent seasons or years as outlined in the protocol or guidelines for each species. Special-status wildlife or suitable habitat identified during the field surveys shall be mapped and documented as part of the CEQA and NEPA documentation, as applicable. **MM BIO-5:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to avoid and minimize impacts on Special-Status Wildlife Species by redesigning the project, protecting special-status wildlife habitat, and developing a mitigation monitoring plan (if necessary) This mitigation measure focuses on avoiding and minimizing all direct and indirect effects on special-status wildlife. Implement the following measures to avoid and minimize impacts on special-status wildlife and their habitats: • Redesign or modify the project to avoid direct and indirect impacts on special-status	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	wildlife or their habitats, if feasible. • Protect special-status wildlife and their habitat near the project site by installing environmentally sensitive area fencing around habitat features, such as seasonal wetlands, burrows, and nest trees. The environmentally sensitive area fencing or staking shall be installed at a distance from the edge of the resource determined through coordination with state and federal agency biologists (USFWS and CDFW). The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area. • Restrict construction-related activities to the non-breeding season for special-status wildlife species that could occur in the project area. Timing restrictions may vary depending on the species and could occur during any time of the year. Coordinate with the appropriate resource agencies to determine whether a monitoring plan for special-status wildlife is necessary as part of all highway projects. If a monitoring plan is required, it shall be developed and implemented in coordination with appropriate agencies and shall include: – a description of each of the protected wildlife species and any suitable habitat for special-status species that could occur at the project site; – the locations of known occurrences of special-status wildlife species within 1.0 mile of the project site; – the location and size of no-disturbance zones in and adjacent to environmentally sensitive areas for wildlife; – directions on the handling and relocating of special-status wildlife species found on the project site that are in immediate danger of being destroyed; and – notification and reporting requirements for special-status species that are identified on the project site.	
Impact BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS;	**MM BIO-6**: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to identify and document riparian habitat as follows: • Retain a qualified biologist to document the location, type, extent, and habitat functions and values for riparian communities that occur in the site-specific project area and could be affected by their project. This information should be mapped and documented as part of CEQA and NEPA documentation, as applicable. • Consult with the USFWS and NMFS where such state-designated sensitive or riparian habitats provide potential or occupied habitat for federally listed rare, threatened, and endangered species afforded protection pursuant to the federal Endangered Species Act. • Consult with the USFS where such state-designated sensitive or riparian habitats provide potential or occupied habitat for federally listed rare, threatened, and	Significant at regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	endangered species afforded protection pursuant to the federal Endangered Species Act and any additional species afforded protection by an adopted Forest Land Management Plan or Resource Management Plan. • Consult with the CDFW where such state-designated sensitive or riparian habitats provide potential or occupied habitat for state-listed rare, threatened, and endangered species afforded protection pursuant to the California Endangered Species Act, or Fully-Protected Species afforded protection pursuant to the State Fish and Game Code. • Consult with the CDFW pursuant to the provisions of Section 1600 of the State Fish and Game Code as they relate to Lakes and Streambeds. • Consult with the USFWS, USFS, CDFW, and counties and cities in the Kern COG region, where state-designated sensitive or riparian habitats are occupied by birds afforded protection pursuant to the Migratory Bird Treaty Act during the breeding season. • Consult with the CDFW for state-designated sensitive or riparian habitats where fur-bearing mammals, afforded protection pursuant to the provisions of the State Fish and Game Code for fur-beaming mammals, are actively using the areas in conjunction with breeding activities. **MM BIO-7:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to avoid and minimize disturbance of riparian communities as follows: • If riparian communities are present in the project area, avoid or minimize impacts on riparian communities by implementing the following measures: • Redesign or modify the project to avoid direct and indirect impacts on riparian communities, if feasible. • Protect riparian communities near the project site by installing environmentally sensitive area fencing at least 20 feet from the edge of the riparian vegetation. Depending on site-specific conditions, this buffer may be narrower or wider than 20 feet. The location of the fencing should be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications should contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area. • Minimize the potential for long-term loss of riparian vegetation by trimming vegetation rather than removing the entire shrub. Shrub vegetation should be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration of the species. Cutting should be limited to a minimum area necessary within the construction zone. This type of removal should be allowed only for shrub species (all trees should be avoided) in areas that do not provide habitat for sensitive species (e.g., willow flycatcher). To protect migratory birds, no woody riparian vegetation should not be removed beginning March 15 through September 15, as required under the Migratory Bird Treaty Act.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	MM BIO-8: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to compensate for the Loss of Riparian Community as follows: • If riparian vegetation is removed as part of their project, compensate for the loss of riparian vegetation to ensure no net loss of habitat functions and values. Compensation ratios should be based on site-specific information and determined through coordination with state and federal agencies (including CDFW, USFWS, USACE, and National Marine Fisheries Service [NMFS]). Compensation should be provided at a minimum 1:1 ratio (1 acre restored or created for every 1 acre removed) and may be a combination of on-site restoration/creation, off-site restoration, or mitigation credits. Develop a restoration and monitoring plan that describes how riparian habitat should be enhanced or recreated and monitored over a minimum period of time, as determined by the appropriate state and federal agencies. Implement the restoration and monitoring plan.	
Impact BIO-3: Have a substantial adverse effect on federally protected wetlands, as defined by CWA Section 404 (including, but not limited to, marsh, and vernal pools) through direct removal, filling, hydrological interruption, or other means.	**MM BIO-9:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to identify and Delineate Waters of the United States (including jurisdictional and isolated wetlands) Wetlands should be identified using both the USACE and USFWS/CDFW definitions of wetlands. USACE jurisdictional wetlands should be delineated using the methods outlined in the USACE 1987 Wetlands Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), September 2008l. The jurisdictional boundary for other waters of the United States should be identified based on: • The shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area (33 CFR 328.3[e]). This information should be mapped and documented as part of the CEQA and NEPA documentation, as applicable, and in wetland delineation reports. **MM BIO-10:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to avoid and minimize disturbance of waters of the United States, including wetland communities. Avoid and minimize impacts on wetlands and other waters of the United States (creeks, steams, and rivers) by implementing the following measures: • Redesign or modify the project to avoid direct and indirect impacts on wetland habitats. • Protect wetland habitats that occur near the project site by installing environmentally sensitive area fencing at least 20 feet from the edge of the wetland. Depending on site-specific conditions and permit requirements, this buffer may be wider than 20 feet (e.g., 250 feet for seasonal wetlands that are considered special-status shrimp habitat). The location of the fencing shall be marked in the field with stakes and flagging and	Significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	shown on the construction drawings. The construction specifications shall contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area. • Avoid installation activities in saturated or ponded wetlands during the wet season (spring and winter) to the maximum extent possible. Where such activities are unavoidable, protective practices, such as use of padding or vehicles with balloon tires, shall be used. • Where determined necessary by resource specialists, use geotextile cushions and other materials (e.g., timber pads, prefabricated equipment pads, or geotextile fabric) in saturated conditions to minimize damage to the substrate and vegetation. • Stabilize exposed slopes and stream banks immediately on completion of installation activities. Other waters of the United States shall be restored in a manner that encourages vegetation to reestablish to its pre-project condition and reduces the effects of erosion on the drainage system. • In highly erodible stream systems, stabilize banks using a non-vegetative material that will bind the soil initially and break down within a few years. If the project engineers determine that more aggressive erosion control treatments are needed, use geotextile mats, excelsior blankets, or other soil stabilization products. • During construction, remove trees, shrubs, debris, or soils that are inadvertently deposited below the ordinary high-water mark of drainages in a manner that minimizes disturbance of the drainage bed and bank. These measures shall be incorporated into contract specifications and implemented by the construction contractor. In addition, the project proponent shall ensure that the contractor incorporates all state and federal permit conditions into construction specifications. **MM BIO-11:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to compensate for the loss of wetland habitat as follows: If wetlands are filled or disturbed as part of the highway project, compensate for the loss of wetland habitat to ensure no net loss of habitat functions and values. Compensation ratios shall be based on site-specific information and determined through coordination with state and federal agencies (including CDFW, USFWS, and USACE). The compensation shall be at a minimum 1:1 ratio (1 acre restored or created for every 1 acre filled) and may be a combination of on-site restoration/creation, off-site restoration, or mitigation credits. A restoration and monitoring plan shall be developed and implemented if on-site or off-site restoration or creation is chosen. The plan shall describe how wetlands shall be created and monitored over a minimum of five years (or as required by the regulatory agencies).	
Impact BIO-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.	**MM BIO 12:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to incorporate Design Measures to Allow Animal Movement as follows: Prior to design approval of individual projects that contain movement habitat, the implementing agency should incorporate economically viable design measures, as	Significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	applicable and necessary, to allow wildlife or fish to move through the transportation corridor, both during construction activities and post construction. Such measures may include appropriately spaced breaks in a center barrier, or other measures that are designed to allow wildlife to move through the transportation corridor. If the project cannot be designed with these design measures due to traffic safety, etc., the implementing agency should consider mitigation measures to minimize impacts on biological resources, including coordinating with the appropriate regulatory agency (i.e., USFWS, NMFS, CDFW) to obtain regulatory permits and implement alternative project-specific mitigation prior to any construction activities Such measures include, but are not limited to, the following: • Consult with the USFWS, USFS, CDFW, and local agencies, where impacts to birds afforded protection pursuant to the Migratory Bird Treaty Act during the breeding season may occur. • Consult with local jurisdictions and other local organizations when impacts may occur to open space areas that have been designated as important for wildlife movement. • Prohibit construction activities within 500 feet of occupied breeding areas for wildlife afforded protection pursuant to Title 14 § 460 of the California Code of Regulations protecting fur-bearing mammals, during the breeding season. • Conduct a survey to identify active raptor and other migratory nongame bird nests by a qualified biologist at least two weeks before the start of construction at project sites from February 1 through August 31. • Install wildlife fencing where appropriate to minimize the probability of wildlife injury due to direct interaction between wildlife and roads or construction. • where avoidance is determined to be infeasible, design sufficient conservation measures through coordination with local agencies and the regulatory agency (i.e., USFWS or CDFW) and in accordance with the respective counties and cities general plans to establish plans to mitigate for the loss of fish and wildlife movement corridors and/or wildlife nursery sites. The consideration of conservation measures may include the following measures where applicable: – Wildlife movement buffer zones – Corridor realignment – Appropriately spaced breaks in center barriers – Stream rerouting – Culverts – Creation of artificial movement corridors such as freeway under- or overpasses – Other comparable measures Where the Lead Agency has identified that a RTP project, or other regionally significant project, has the potential to impact other open space or nursery site areas, seek comparable coverage for these areas in consultation with the USFWS, CDFW, NMFS, or other local jurisdictions.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. **Impact BIO-6:** Conflict with the provisions of an adopted habitat conservation plan (HCP), natural communities conservation plan (NCCP), or other approved local, regional, or state habitat conservation plan.	Implement **Mitigation Measures MM BIO-1** through **MM BIO-12** **BIO-13:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to review Local City and County Policies, Ordinances, and Conservation Plans. Review of these documents and compliance with their requirements should be demonstrated in project-level environmental documentation. Where lead agencies have determined a significant impact would occur, lead agencies can and should consider mitigation measures to minimize impacts. Such measures include, but are not limited to, the following: Design projects to avoid conflicts with local policies and ordinances protecting biological resources. Where avoidance is determined to be infeasible, sufficient conservation measures to fulfill the requirements of the applicable policy or ordinance shall be developed, such as to support issuance of a tree removal permit. The consideration of conservation measures may include: • Avoidance strategies • Contribution of in-lieu fees • Planting of replacement trees at a minimum ratio of 2:1 • Re-landscaping areas with native vegetation post-construction • Other comparable measures. **MM-BIO-14**: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to review Local City and County Policies, Ordinances, and Conservation Plans. Review of these documents and compliance with their requirements should be demonstrated in project-level environmental documentation. Where lead agencies have determined a significant impact would occur, lead agencies can and should consider mitigation measures to minimize impacts. Such measures include, but are not limited to, the following: • Consult with the appropriate federal, state, and/or local agency responsible for the administration of HCPs or NCCPs. • Wherever practicable and feasible, the project shall be designed to avoid through project design lands preserved under the conditions of an HCP or NCCP. Where avoidance is determined to be infeasible, sufficient conservation measures to fulfill the requirements of the HCP and/or NCCP, which would include but not be limited to applicable authorization for incidental take pursuant to Section 7 or 10(a) of the federal Endangered Species Act or Section 2081 of the California Endangered Species Act, shall be developed to support issuance of an Incidental take permit or any other permissions required for development within the HCP/NCCP boundaries.	Significant at the regional and TPA levels.
CULTURAL RESOURCES		
Impact CR-1: Cause a substantial adverse change in the significance of a historic structure that is a historical resource as defined in *State CEQA Guidelines* Section	**MM CR-1:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to require historical resource studies and to identify and implement project-specific mitigation.	Significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
15064.5.	As part of planning, design, and engineering for projects, implementing and local agencies should ensure that historic resources are treated in accordance with applicable federal, state, and local laws and regulations. When a project has been identified as potentially affecting a historical resource, a historical resources inventory should be conducted by a qualified architectural historian. The study should comply with *State CEQA Guidelines* section 15064.5(b), and, if federal funding or permits are required, with section 106 of the National Historic Preservation Act (NHPA) of 1966 (16 USC Sec. 470 et seq.). As applicable, the study should consist of the following elements: • a records search at the Southern San Joaquin Valley Information Center (California State University, Bakersfield); • contact with local historical societies, museums, or other interested parties as appropriate to help determine locations of known significant historical resources; • necessary background, archival and historic research; • a survey of built environment/architectural resources that are 50 years old or older that may be directly or indirectly impacted by project activities; and • recordation and evaluation of built environment/architectural resources that are 50 years old or older that may be directly or indirectly impacted by project activities; • buildings should be evaluated under CRHR and/or NRHP Criteria as appropriate and recorded on California Department of Parks and Recreation 523 forms. These elements should be compiled into a Historical Survey Report that should be submitted to the Southern San Joaquin Valley Information Center (California State University, Bakersfield) and should also be used for SHPO consultation if the project is subject to NHPA section 106. If architectural resources are deemed as potentially eligible for the California Register of Historic Resources or the National Register of Historic Places, implementing and local agencies should consider avoidance through project redesign as feasible and appropriate. If avoidance is not feasible, implementing or local agencies should ensure that historical resources are formally documented through the use of large-format photography, measured drawings, written architectural descriptions, and historical narratives. The documentation should be entered into the Library of Congress and archived in the California Historical Resources Information System. In the event of building relocation, implementing and local agencies should ensure that any alterations to significant buildings or structures conform to the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.	
Impact CR-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to *State CEQA Guidelines* Section 15064.5.	**MM CR-2:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to require consultation, surveys, and monitoring for archaeological resources. During environmental review of projects, implementing and local agencies should: • Consult with the Native American Heritage Commission to determine whether known sacred sites are in the project area and identify the Native American(s) to contact to obtain information about the project area.	Significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	• Conduct a records search at the Southern San Joaquin Valley Information Center (California State University, Bakersfield) to determine whether the project area has been previously surveyed and whether resources were identified. In the event the records indicate that no previous survey has been conducted, the Southern San Joaquin Valley Information Center (California State University, Bakersfield) will make a recommendation on whether a survey is warranted based on the archaeological sensitivity of the project area. If recommended, a qualified archaeologist should be retained to conduct archaeological surveys. The significance of any resources that are determined to be in the project area should be assessed according to the applicable local, state, and federal significance criteria. Implementing and local agencies should devise treatment measures to ameliorate "substantial adverse changes" to significant archaeological resources, in consultation with qualified archaeologists and other concerned parties. Such treatment measures may include avoidance through project redesign, data recovery excavation, and public interpretation of the resource. Implementing and local agencies and the contractors performing the improvements should adhere to the following requirements: • If a project is located in an area rich with cultural materials, implementing and local agencies should retain a qualified archaeologist to monitor any subsurface operations, including but not limited to grading, excavation, trenching, or removal of existing features of the subject property. • If, during the course of construction cultural resources (i.e., prehistoric sites, historic sites, and isolated artifacts and features) are discovered work should be halted immediately within 50 meters (165 feet) of the discovery, implementing and local agencies should be notified, and a qualified archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology should be retained to determine the significance of the discovery. • Implementing and local agencies should consider mitigation recommendations presented by a professional archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology for any unanticipated discoveries and should carry out the measures deemed feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. The project proponent should be required to implement any mitigation necessary for the protection of cultural resources.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact CR-3: Disturb any human remains, including those interred outside of formal cemeteries.	**MM CR-3:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to implement Stop-Work and Consultation Procedures Mandated by Public Resources Code 5097. In the event of discovery or recognition of any human remains during construction or excavation activities implementing and local agencies should cease further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the following steps are taken: • The Kern County Coroner has been informed and has determined that no investigation of the cause of death is required. • If the remains are of Native American origin, either of the following steps will be taken: – The coroner should contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner should make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains. – Implementing or local agencies or authorized representatives should retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs: • The Native American Heritage Commission is unable to identify a descendent. • The descendant identified fails to make a recommendation. • The implementing agency or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.	Significant at the regional and TPA levels.
Impact TCR-1: Cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Code section 21074 that is: a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or b) A resource determined by the lead agency, in its discretion and supported by substantial evidence,	Implement **Mitigation Measures MM CR-2** and **MM CR-4.** **MM TCR-1**: Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to consult with the Native American Heritage Commission, as well as Native American tribes, to identify opportunities for early and effective consultation to identify tribal cultural resources to avoid such resources wherever practicable and feasible and reduce or mitigate for conflicts in compatible land use to the maximum extent practicable.	Significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.		
ENERGY		
Impact EN-1: Substantially increase the consumption of electricity, natural gas, gasoline, diesel, or other nonrenewable energy types.	**MM EN-1:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to implement energy saving policies and projects that 1) reduce wasteful, inefficient and unnecessary consumption of energy during construction, operation, and maintenance; 2) consider siting, orientation, and design to minimize energy consumption, including transportation energy; 3) consider options for reducing peak energy demand; 4) consider recycling efforts to reduce energy demand; and 5) incorporate renewable and alternative energy to the maximum extent feasible.	Significant at the regional and TPA levels.
Impact EN-2: Use substantial amounts of electricity and natural gas, thereby requiring the construction of new facilities and new sources of energy or major improvements to local infrastructure.	**MM EN-2:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to streamline permitting and provide public information to facilitate accelerated construction of geothermal, solar and wind power generation facilities and transmission line improvements. **MM EN-3:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage utilities to increase capacity of existing transmission lines to meet forecast demand that supports sustainable growth, where feasible and appropriate in coordination with local planning agencies. **MM EN-4:** Kern COG shall continue to consider energy uncertainty impacts prior to the development of the next RTP. Topics that shall be considered include: • How the price and availability of transportation fuels affects revenues and demand; • How increases in fuel efficiency could affect revenues and emissions; • How the cost of commuting and personal travel affects mode choice and growth patterns; • How the cost of goods movement affects international trade and employment; or • How the escalation of fuel prices affects the cost of infrastructure construction, maintenance and operation.	Significant at the regional and TPA levels.
GEOLOGY AND SOILS		
Impact GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving: (i) a rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;	No mitigation is required.	Less than significant at the regional and TPA level.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
(ii) Strong seismic ground shaking; (iii) Seismic-related ground failure, including liquefaction; (iv) Landslides.		
Impact GEO-2: Result in substantial soil erosion or the loss of topsoil.	**MM GEO-1**: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to require the development and implementation of detailed erosion control measures, consistent with the CBC and UBC regulations and guidelines and/or local NPDES, to address erosion control specific to the project site; revegetate sites to minimize soil loss and prevent significant soil erosion; avoid construction on unstable slopes and other areas subject to soil erosion where possible; require management techniques that minimize soil loss and erosion; manage grading to maximize the capture and retention of water runoff through ditches, trenches, siltation ponds, or similar measures; and minimize erosion through adopted protocols and standards in the industry. The implementing and local agencies should also require land use and transportation projects to comply with locally adopted grading, erosion, and/or sediment control ordinances beginning when any preconstruction or construction-related grading or soil storage first occurs, until all final improvements are completed.	Significant at the regional and TPA levels.
Impact GEO-3: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading subsidence, liquefaction, or collapse.	**MM GEO-2**: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to conduct site-specific, design level geotechnical investigation for individual projects. Investigations should include an analysis of expected ground motions from known active faults. The analyses should be in accordance with applicable regulations and consistent with the most recent version of the California Building Code, which requires structural design that can accommodate ground accelerations expected from known active faults. In addition, investigations should determine final design parameters for walls, foundations, foundation slabs, and surrounding related improvements (utilities, roadways, parking lots and sidewalks). Investigations should be reviewed and approved by a registered geotechnical engineer. All recommendations by project engineers and geotechnical engineers should be included in final designs. Final seismic considerations should be submitted to and approved by the appropriate local jurisdiction prior to the commencement of a project.	Significant at the regional and TPA levels.
Impact GEO-4: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.	Implement Mitigation Measures GEO-2	Significant at the regional and TPA levels.
Impact GEO-5: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	No mitigation is required.	Less than significant at the regional and TPA level.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact GEO-6: Directly or indirectly destroy a unique paleontological resource or site.	**MM GEO-3:** Kern COG shall consult with resource agencies such as the National Park Service, United States Forest Service, and Bureau of Land Management to identify opportunities for early and effective consultation to identify unique paleontological resources and unique geological features to avoid such resources wherever practicable and feasible and reduce or mitigation for conflicts in compatible land use to the maximum extent practicable. **MM GEO-4:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing to ensure compliance with the Paleontological Resources Preservation Act, the Federal Land Policy and Management Act, the Antiquities Act, Section 5097.5 of the Public Resources Code (PRC), adopted county and city general plans, and other federal, state and local regulations, as applicable and feasible, by adhering to and incorporating the performance standards and practices from the 2010 Society for Vertebrate Paleontology (SVP) standard procedures for the assessment and mitigation of adverse impacts to paleontological resources.	Significant at the regional and TPA levels.
GREENHOUSE GASES		
Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	**MM GHG-1:** Kern COG shall update future Regional Transportation Plans (including Sustainable Community Strategies) to incorporate policies and measures that build upon successful GHG reduction strategies from the 2026 RTP and lead to further reduced GHG emissions. Such policies and measures may be derived from the General Plans, local jurisdictions' Climate Action Plans (CAPs), and other adopted policies and plans of its member agencies that include GHG mitigation and adaptation measures or other sources. **MM GHG-2**: Kern COG shall, through its ongoing outreach and technical assistance programs, work with and encourage local governments to adopt policies and develop practices that lead to GHG emission reductions. These activities should include, but are not limited to, providing technical assistance and information sharing on developing local Climate Action Plans. **MM GHG-3:** Kern COG shall continue the Regional Energy Action Planning, as funding allows, and assist member agencies in adopting regional energy action plans and community climate action plans to advance regional climate strategies. These plans should assess the cost effectiveness of local jurisdictions' GHG reduction measures and prioritize strategies that have greatest overall benefit to the economy. **MM GHG-4:** Consistent with the CMP, Kern COG shall encourage and work with local governments to develop multimodal performance standards to determine how much traffic, during peak hours, is acceptable on state freeways, highways, and major streets within Kern County. Local jurisdictions should incorporate multimodal level of service standards in their circulation plans consistent with AB 1358 California Complete Streets Act of 2008 and as appropriate for each community facility type, place type, and corridor type, as recommended in the latest Highway Capacity Manual update. In addition, Kern COG will work with local agencies to identify frequency and routing of transit service, in order to assist in coordinating transit service provided by separate operators throughout Kern County. **MM GHG-5:** Kern COG will continue to promote GHG and criteria pollutant emission reductions through the VMT Reduction Progress Tracking & Assistance Program by	Significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	providing local jurisdictions with regular progress reports on changes in observed VMT and providing planning assistance and resources to make progress toward reduction goals. Other resources being provided to local planners include the San Joaquin Valley Planners Toolkit. **MM GHG-6:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to build on the work done for the Kern County GHG inventory. Implementing agencies and local agencies should also adopt and implement Climate Action Plans (CAPs, also known as Plans for the Reduction of Greenhouse Gas Emissions as described in *CEQA Guidelines* Section 15183.5 Tiering and Streamlining the Analysis of Greenhouse Gas Emissions) that do the following: a) Quantify GHG emissions, both existing and projected over a specified period, resulting from activities within each agency's jurisdiction; b) Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable; c) Identify and analyze the GHG emissions resulting for specific actions or categories of actions anticipated within their respective jurisdictions; d) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level; e) Establish a mechanism to monitor the plan's progress toward achieving that level and to require amendment if the plan is not achieving specified levels; and f) Be adopted in a public process following environmental review. **MM GHG-7:** In accordance with provisions of sections 15091(a)(2) and 15126.4(a)(1)(B) of the State CEQA Guidelines, a Lead Agency for a project can and should consider mitigation measures to reduce substantial adverse effects related to greenhouse gas emissions. Such measures may include the following or other comparable measures identified by the Lead Agency: a) Integrate green building measures consistent with CALGreen (California Building Code Title 24), local building codes and other applicable laws, into project design including: i. Use energy efficient materials in building design, construction, rehabilitation, and retrofit. ii. Install energy-efficient lighting, heating, and cooling systems (cogeneration); water heaters; appliances; equipment; and control systems. iii. Reduce lighting, heating, and cooling needs by taking advantage of light-colored roofs, trees for shade, and sunlight. iv. Incorporate passive environmental control systems that account for the characteristics of the natural environment. v. Use high-efficiency lighting and cooking devices.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	vi. Incorporate passive solar design. vii. Use high-reflectivity building materials and multiple glazing. viii. Prohibit gas-powered landscape maintenance equipment. ix. Install electric vehicle charging stations. x. Reduce wood burning stoves or fireplaces. xi. Provide bike lanes accessibility and parking at residential developments. b) Reduce emissions resulting from projects through implementation of project features, project design, or other measures, such as those described in Appendix F of the State CEQA Guidelines. c) Include off-site measures to mitigate a project's emissions. d) Measures that consider incorporation of Best Available Control Technology (BACT) during design, construction and operation of projects to minimize GHG emissions, including but not limited to: i) Use energy and fuel-efficient vehicles and equipment; ii) Deployment of zero- and/or near zero emission technologies; iii) Use lighting systems that are energy efficient, such as LED technology; iv) Use the minimum feasible amount of GHG-emitting construction materials; v) Use cement blended with the maximum feasible amount of flash or other materials that reduce GHG emissions from cement production; vi) Incorporate design measures to reduce GHG emissions from solid waste management through encouraging solid waste recycling and reuse; vii) Incorporate design measures to reduce energy consumption and increase use of renewable energy; viii) Incorporate design measures to reduce water consumption; ix) Use lighter-colored pavement where feasible; x) Recycle construction debris to maximum extent feasible; xi) Plant shade trees in or near construction projects where feasible; and xii) Solicit bids that include concepts listed above. e) Measures that encourage transit use, carpooling, bike-share and car-share programs, active transportation, and parking strategies, including, but not limited to the following: i) Promote transit-active transportation coordinated strategies; ii) Increase bicycle carrying capacity on transit and rail vehicles; iii) Improve or increase access to transit; iv) Increase access to common goods and services, such as groceries, schools, and day care; v) Incorporate affordable housing into the project; vi) Incorporate the neighborhood electric vehicle network; vii) Orient the project toward transit, bicycle and pedestrian facilities; viii) Improve pedestrian or bicycle networks, or transit service; ix) Provide traffic calming measures;	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	x) Provide bicycle parking; xi) Limit or eliminate park supply; xii) Unbundle parking costs; xiii) Provide parking cash-out programs; xiv) Implement or provide access to commute reduction program; f) Incorporate bicycle and pedestrian facilities into project designs, maintaining these facilities, and providing amenities incentivizing their use; and planning for and building local bicycle projects that connect with the regional network; g) Improving transit access to rail and bus routes by incentives for construction of transit facilities within developments, and/or providing dedicated shuttle service to transit stations; and h) Adopting employer trip reduction measures to reduce employee trips such as vanpool and carpool programs, providing end-of-trip facilities, and telecommuting programs including but not limited to measures that: i. Provide car-sharing, bike sharing, and ride-sharing programs; ii. Provide transit passes; iii. Shift single occupancy vehicle trips to carpooling or vanpooling, for example providing ride-matching services; iv. Provide incentives or subsidies that increase that use of modes other than single-occupancy vehicle; v. Provide on-site amenities at places of work, such as priority parking for carpools and vanpools, secure bike parking, and showers and locker rooms; vi. Provide employee transportation coordinators at employment sites; vii. Provide a guaranteed ride home service to users of non-auto modes. i) Designate a percentage of parking spaces for ride-sharing vehicles or high-occupancy vehicles, and provide adequate passenger loading and unloading for those vehicles j) Land use siting and design measures that reduce GHG emissions, including: i. Developing on infill and brownfields sites; ii. Building compact and mixed-use developments near transit; iii. Retaining on-site mature trees and vegetation, and planting new canopy trees; iv. Measures that increase vehicle efficiency, encourage use of zero and low emissions vehicles, or reduce the carbon content of fuels, including constructing or encouraging construction of electric vehicle charging stations or neighborhood electric vehicle networks, or charging for electric bicycles; and v. Measures to reduce GHG emissions from solid waste management through encouraging solid waste recycling and reuse.	
Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing emissions of greenhouse gases.	**Implement** Mitigation Measures MM TR-3 **through** MM-TR-5, MM AIR-1 **and** MM AIR-2, **and** MM-GHG-1 **through** MM-GHG-4.	Significant at the regional and TPA level.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
HAZARDS AND HAZARDOUS MATERIALS		
Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	No feasible mitigation measures.	Significant and unavoidable
Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	No feasible mitigation measures.	Significant and unavoidable
Impact HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	No mitigation is required	Less than significant
Impact HAZ-4: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.	**MM HAZ-1:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to determine whether specific project sites are listed on government lists of hazardous materials and/or waste sites compiled pursuant to Government Code Section 65962.5. Implementing and local agencies should require preparation of a Phase I Environmental Site assessment (ESA) for any listed sites or sites with the potential for residual hazardous materials and/or waste as a result of location and/or prior uses. Implementing and local agencies should require that recommendations of the Phase I ESA be fully implemented. If a Phase I ESA indicates the presence or likely presence of contamination, the implementing agency should require a Phase II ESA, and recommendations of the Phase II ESA should be fully implemented.	Significant at the regional and TPA levels.
Impact HAZ-5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area.	**No mitigation is required.**	Less than significant.
Impact HAZ-6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	No mitigation is required.	Less than significant.
HYDROLOGY AND WATER QUALITY		
Impact W-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.	**MM W-1:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to undergo individual project review and comply with NPDES requirements and all applicable storm water regulations. Such measures include, but are not limited to: • Complete, and have approved, a Stormwater Pollution Prevention Plan (SWPPP) prior to initiation of construction. • Implement Best Management Practices to reduce the peak stormwater runoff from the project site to the maximum extent practicable. • Comply with the Caltrans storm water discharge permit as applicable and implement	Significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	Best Management Practices can and should be identified and implemented to manage site erosion, wash water runoff, and spill control. • Complete, and have approved, a Standard Urban Stormwater Management Plan, prior to occupancy of residential or commercial structures. • Ensure adequate capacity of the surrounding stormwater system to support stormwater runoff from new or rehabilitated structures or buildings. • Prior to construction within the vicinity of a watercourse, the project sponsor can and should obtain all required permit approvals and certifications for construction within the vicinity of a watercourse: • U.S. Army Corps of Engineers (Corps): Section 404. Permit approval from the Corps should be obtained for the placement of dredge or fill material in Waters of the U.S., if any, within the interior of the project site, pursuant to Section 404 of the federal Clean Water Act. • Regional Walter Quality Control Board (RWQCB): Section 401 Water Quality Certification. Certification that the project will not violate state water quality standards is required before the Corps can issue a 404 permit, above. • California Department of Fish and Wildlife (CDFW): Section 1602 Lake and Streambed Alteration Agreement. Work that will alter the bed or bank of a stream requires authorization from CDFW. • Where feasible, restore or expand riparian areas such that there is no net loss of impervious surface as a result of the project. • New facilities should install structural water quality control features such as drainage channels, detention basins, oil and grease traps, filter systems, and vegetated buffers to prevent pollution of adjacent water resources by polluted runoff where required by applicable urban storm water runoff discharge permits. • Structural storm water runoff treatment should be provided according to the applicable urban storm water runoff permit where facilities will be operated by a permitted municipality or county. Where Caltrans is the operator, the statewide permit applies. • Comply with applicable municipal separate storm sewer system discharge permits as well as Caltrans' storm water discharge permit including long-term sediment control and drainage of roadway runoff. • Incorporate as appropriate treatment and control features such as detention basins, infiltration strips, and porous paving, other features to control surface runoff and facilitate groundwater recharge into the design of new transportation projects early on in the process to ensure that adequate acreage and elevation contours are provided during the right-of-way acquisition process. • Design projects to maintain volume of runoff, where any downstream receiving water body has not been designed and maintained to accommodate the increase in flow velocity, rate, and volume without impacting the water's beneficial uses. Pre-project flow velocities, rates, and volumes must not be exceeded. This applies not only to increases in storm water runoff from the project site, but also to hydrologic changes	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	induced by flood plain encroachment. Projects should not cause or contribute to conditions that degrade the physical integrity or ecological function of any downstream receiving waters. • Provide culverts and facilities that do not increase the flow velocity, rate, or volume and/or acquiring sufficient storm drain easements that accommodate an appropriately vegetated earthen drainage channel. • Upgrade stormwater drainage facilities to accommodate any increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce flow velocities, including expansion and restoration of wetlands and riparian buffer areas. System designs should be completed to eliminate increases in peak flow rates from current levels. • Encourage Low Impact Development (LID) and incorporation of natural spaces that reduce, treat, infiltrate and manage stormwater runoff flows in all new developments, where practical and feasible. • •For sites that are less than one acre, project drawings submitted for a building permit (or other construction-related permit) shall contain a final site plan to be reviewed and approved by the appropriate local agency. The final site plan should incorporate appropriate site design measures to manage stormwater runoff and minimize impacts to water quality after the construction of the project.	
Impact W-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	**MM W-2:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to ensure that projects requiring continual dewatering facilities implement monitoring systems and long-term administrative procedures to prevent degrading of surface water and minimize, to the greatest extent possible, adverse impacts on groundwater for the life of the project. Construction designs should comply with appropriate building codes and standard practices including the Uniform Building Code. **MM W-3:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to maximize, where practical and feasible, permeable surface area in existing urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. New impervious surfaces should be minimized to the greatest extent possible, including the use of in-lieu fees and off-site mitigation. **MM W-4:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to avoid development in groundwater recharge areas. Where feasible, transportation facilities should not be sited in groundwater recharge areas, to prevent conversion of those areas to impervious surface. **MM W-5:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to reduce hardscape to the extent feasible to facilitate groundwater recharge as appropriate.	Significant at the regional level; less than significant at the TPA level.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact W-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) Result in substantial erosion or siltation on-or-off site; ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or offsite; iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) Impede or redirect flood flows.	**MM W-6:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to conduct or require project-specific hydrology studies for projects proposed to be constructed within floodplains to demonstrate compliance with applicable federal, state, and local agency flood-control regulations. These studies should identify project design features or mitigation measures that reduce impacts to either floodplains or flood flows such that the project is consistent with federal, state, and local regulations and laws related to development in the floodplain. **MM W-7:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to, the extent feasible and appropriate, to prevent development in flood hazard areas that do not have appropriate protection.	Significant at the regional level; less than significant at the TPA level.
Impact W-4: Result in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.	See **MM W-6** and **MM W-7.**	Significant at the regional level; less than significant at the TPA level.
Impact W-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	See **MM W-1** and **MM W-3.**	Significant at the regional and TPA levels.
Impact W-6: Have sufficient water supplies available to serve the project and reasonably for seeable future development during normal dry and multiple dry years.	**MM W-8:** Kern COG will facilitate minimizing future impacts to water supply through cooperation, information sharing, and program development as part of the Kern COG's ongoing regional planning efforts, in-coordination with regional water agencies, and other stakeholders. **MM W-9:** Kern COG, in coordination with regional water agencies and other stakeholders, shall encourage regional coordination throughout California to develop and support sustainable policies in accommodating growth. **MM W-10 :**Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage regional water agencies to consider, to the extent feasible, potential climate change hydrology and attendant impacts on available water supplies and reliability in the process of creating or modifying systems to manage water resources for both year-round use and ecosystem health. As the methodology and base data for such decisions is still developing, agencies should use the best currently available science in decision-making. **MM W-11:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to reduce exterior uses of water in public areas, and promote reductions in private homes and businesses by shifting to drought-tolerant native landscape plantings, using weather-based irrigation systems, educating other public agencies about water use, and installing related	Significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	water pricing incentives. Kern COG will also encourage local jurisdictions to work with local water retailers to promote the availability of drought resistant landscaping options and provide information on where these can be purchased. Use of reclaimed water especially in median landscaping and hillside landscaping should be implemented where feasible. **MM W-12:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to coordinate with the local water provider to ensure that existing and/or planned water supply and water conveyance facilities are capable of meeting water demand/pressure requirements. In accordance with state law, a Water Supply Assessment should be required for projects that meet the size requirements specified in the regulations. In coordination with the local water provider, each project sponsor should identify specific on- and off-site improvements needed to ensure that impacts related to water supply and conveyance demand/pressure requirements are addressed prior to issuance of a certificate of occupancy. Water supply and conveyance demand/pressure clearance from the local water provider will be required at the time that a water connection permit application is submitted. **MM W- 13:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to implement water conservation measures in new development that should include but not be limited to the following: • High efficiency toilets • Restroom faucets with automatic shut-off • High efficiency clothes washers • High efficiency dishwashers • Use of reclaimed water for appropriate uses • Water saving irrigation measures including: weather-based irrigation controller with rain shut-off. **MM W-14:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to consult with the local water provider to identify feasible and reasonable measures to reduce water consumption, including, but not limited to, systems to use reclaimed water for landscaping, drip irrigation, re-circulating hot water systems, water conserving landscape techniques (such as mulching, installation of drip irrigation systems, landscape design to group plants of similar water demand, soil moisture sensors, automatic irrigation systems, clustered landscaped areas to maximize the efficiency of the irrigation system), water conserving kitchen and bathroom fixtures and appliances, thermostatically controlled mixing valves for baths and showers, and insulated hot water lines. **MM W-15:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to comply with local drought measures as appropriate including prohibiting hose watering of driveways and associated walkways; requiring decorative fountains to use recycled water and repairing water leaks in a timely manner.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	MM W-16: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to adopt and implement a comprehensive strategy to increase water conservation and the use of recycled water that includes similar measures to the following: • Water Consumption Reduction Target: Regional water agencies should work together to set a target for to reduce per capita water consumption by 2020. • Water Conservation Plan: Regional water agencies should establish a water conservation plan that may include such policies and actions as: **MM W-8:** Kern COG will facilitate minimizing future impacts to water supply through cooperation, information sharing, and program development as part of the Kern COG's ongoing regional planning efforts, in-coordination with regional water agencies, and other stakeholders. **MM W-9**: Kern COG, in coordination with regional water agencies and other stakeholders, shall encourage regional coordination throughout California to develop and support sustainable policies in accommodating growth. **MM W-10:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage regional water agencies to consider, to the extent feasible, potential climate change hydrology and attendant impacts on available water supplies and reliability in the process of creating or modifying systems to manage water resources for both year-round use and ecosystem health. As the methodology and base data for such decisions is still developing, agencies should use the best currently available science in decision-making. **MM W-11:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to reduce exterior uses of water in public areas, and promote reductions in private homes and businesses by shifting to drought-tolerant native landscape plantings, using weather-based irrigation systems, educating other public agencies about water use, and installing related water pricing incentives. Kern COG will also encourage local jurisdictions to work with local water retailers to promote the availability of drought resistant landscaping options and provide information on where these can be purchased. Use of reclaimed water especially in median landscaping and hillside landscaping should be implemented where feasible. **MM W-12:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to coordinate with the local water provider to ensure that existing and/or planned water supply and water conveyance facilities are capable of meeting water demand/pressure requirements. In accordance with state law, a Water Supply Assessment should be required for projects that meet the size requirements specified in the regulations. In coordination with the local water provider, each project sponsor should identify specific on- and off-site improvements needed to ensure that impacts related to water supply and conveyance demand/pressure requirements are addressed prior to issuance of a certificate of occupancy. Water supply and conveyance demand/pressure clearance from the local water provider will be required at the time that a water connection permit application is submitted.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	MM W- 13: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to implement water conservation measures in new development that should include but not be limited to the following: • High efficiency toilets • Restroom faucets with automatic shut-off • High efficiency clothes washers • High efficiency dishwashers • Use of reclaimed water for appropriate uses • Water saving irrigation measures including: weather-based irrigation controller with rain shut-off. **MM W-14:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to consult with the local water provider to identify feasible and reasonable measures to reduce water consumption, including, but not limited to, systems to use reclaimed water for landscaping, drip irrigation, re-circulating hot water systems, water conserving landscape techniques (such as mulching, installation of drip irrigation systems, landscape design to group plants of similar water demand, soil moisture sensors, automatic irrigation systems, clustered landscaped areas to maximize the efficiency of the irrigation system), water conserving kitchen and bathroom fixtures and appliances, thermostatically controlled mixing valves for baths and showers, and insulated hot water lines. **MM W-15:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to comply with local drought measures as appropriate including prohibiting hose watering of driveways and associated walkways; requiring decorative fountains to use recycled water and repairing water leaks in a timely manner. **MM W-16:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to adopt and implement a comprehensive strategy to increase water conservation and the use of recycled water that includes similar measures to the following: • **Water Consumption Reduction Target:** Regional water agencies should work together to set a target for to reduce per capita water consumption by 2020. • **Water Conservation Plan:** Regional water agencies should establish a water conservation plan that may include such policies and actions as: – Tiered rate structures for water use; – Restrictions on time of use for landscape watering, and other demand management strategies; – Performance standards for irrigation equipment and water fixtures; – Requirements that increased demand from new construction are offset with reductions so that there is no net increase in water use.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	• **Recycled Water Use:** Local jurisdictions and regional water agencies should establish programs and policies to increase the use of recycled water, including: – Create an inventory of non-potable water uses within the jurisdiction that could be served with recycled water; – Produce and promote the use of recycled water for agricultural, industrial, and irrigation purposes, including grey water systems for residential irrigation; – Produce and promote the use of treated, recycled water for potable uses where greenhouse gas emissions from producing such water are lower than from other potable sources. • **Water Conservation Outreach:** Local jurisdictions and regional water agencies should implement a public education and outreach campaign to promote water conservation, and highlights specific water-wasting activities to discourage, such as the watering of non-vegetated surfaces and using water to clean sidewalks and driveways. **MM W-17:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to establish building design guidelines and criteria to promote water-efficient building design, including minimizing the amount of non-roof impervious surfaces around the building(s) and menus and check-lists for developers and contractors to ensure water-efficient infrastructure and technology are used in new construction, including low-flow toilets and shower heads, moisture-sensing irrigation, and other such advances. **MM W-18:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to establish criteria and standards to permit the safe and effective use of gray water (on-site water recycling), and review and appropriately revise, without compromising health and safety, other building code requirements that might prevent the use of such systems. • Recycled Water Use: Local jurisdictions and regional water agencies should establish programs and policies to increase the use of recycled water, including: – Create an inventory of non-potable water uses within the jurisdiction that could be served with recycled water; – Produce and promote the use of recycled water for agricultural, industrial, and irrigation purposes, including grey water systems for residential irrigation; – Produce and promote the use of treated, recycled water for potable uses where greenhouse gas emissions from producing such water are lower than from other potable sources. • Water Conservation Outreach: Local jurisdictions and regional water agencies should implement a public education and outreach campaign to promote water conservation, and highlights specific water-wasting activities to discourage, such as the watering of non-vegetated surfaces and using water to clean sidewalks and driveways. **MM W-17:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to establish building design guidelines and criteria to promote water-efficient building design,	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	including minimizing the amount of non-roof impervious surfaces around the building(s) and menus and check-lists for developers and contractors to ensure water-efficient infrastructure and technology are used in new construction, including low-flow toilets and shower heads, moisture-sensing irrigation, and other such advances. **MM W-18:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to establish criteria and standards to permit the safe and effective use of gray water (on-site water recycling), and review and appropriately revise, without compromising health and safety, other building code requirements that might prevent the use of such systems.	
LAND USE AND PLANNING		
Impact LU-1: Physically divide an established community.	**MM LU-1:** Kern COG shall continue to coordinate with local County Transportation Commissions, Caltrans, and other local jurisdictions when siting new facilities in residential areas to facilitate minimizing future impacts on established communities through cooperation, information sharing, and regional program development as part of Kern COG's ongoing regional planning efforts to promote best planning practices. See also **MM POP-1.**	Significant at the regional and TPA levels.
Impact LU-2: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	See **Mitigation Measures LU-1** and **POP-1.** **MM LU-2:** Kern COG shall work with the County and other member agencies on the Regional Planning Advisory Committee to ensure that RTP transportation projects and growth are consistent with the RTP and general plans and associated local government planning assumptions. **MM LU-3:** Kern COG shall provide technical assistance and regional leadership to implement the RTP goals and strategies, integrate growth and land use planning with the existing and planned transportation network, and in determining consistency with the SCS. **MM LU-4**: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to reflect RTP policies and strategies in their general plan updates. Kern COG will work to build consensus on how to address inconsistencies between general plans and RTP policies.	Significant at the regional and TPA levels.
MINERAL RESOURCES		
Impact MIN-1: Potential to result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.	No mitigation required.	Less than significant.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
IMPACT MIN-2: Potential to result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.	**MM MIN-1**: Kern COG through its intergovernmental review process, shall coordinate with the Department of Conservation, California Geological Survey to ensure that transportation projects avoid MRZs and areas identified through the General Plan to contain natural resources, and access to recoverable mineral and fuel resources is sustained through construction, operation and maintenance of projects. Efforts will be made to maintain portions of MRZ-2 areas in open space or other general plan land use categories and zoning that allow for mining of mineral resources. Where avoidance is infeasible, design transportation network improvements in a manner that does not preclude adjacent or nearby extraction of known mineral and aggregate resources following completion of the improvement and during long-term operations, such as buffer zones or screening. maintaining portions of MRZ-2 areas in open space or other general plan land use categories and zoning that allow for mining of mineral resources.	Significant at the regional and TPA levels
NOISE		
Impact NOISE-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies	**MM NOISE-1:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to assess and mitigate to the extent feasible short- and long-term noise impacts in accordance with applicable regulations and to implement site-specific noise reduction measures, including the following as applicable: • Equipment and trucks used for project construction can and should use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds, wherever feasible). • Tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction can and should be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust should be used; this muffler can lower noise levels from the exhaust by up to about 10 dB(A). External jackets on the tools themselves should be used, if such jackets are commercially available and this could achieve a reduction of 5 dB(A). Quieter procedures should be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures. • Stationary noise sources can and should be located as far from adjacent sensitive receptors as possible and they should be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the Lead Agency (or other appropriate government agency) to provide equivalent noise reduction. • A procedure and phone numbers for notifying the Lead Agency staff and local Police Department; (during regular construction hours and off-hours). • A sign posted on-site pertaining with permitted construction days and hours and complaint procedures and who to notify in the event of a problem. The sign should also include a listing of both the Lead Agency and construction contractor's telephone numbers (during regular construction hours and off-hours).	Significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	• The designation of an on-site construction complaint and enforcement manager for the project. • Notification of neighbors and occupants within 300 feet of the project construction area at least 30 days in advance of extreme noise generating activities about the estimated duration of the activity. • A preconstruction meeting can and should be held with the job inspectors and the general contractor/on-site project manager to confirm that noise measures and practices (including construction hours, neighborhood notification, posted signs, etc.) are completed. • Use of portable barriers in the vicinity of sensitive receptors during construction. • Projects that require pile driving or other construction noise above 90 dB(A) in proximity to sensitive receptors, should reduce potential pier drilling, pile driving and/or other extreme noise generating construction impacts greater than 90 dB(A), a set of site-specific noise attenuation measures should be completed under the supervision of a qualified acoustical consultant. • Implement noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings (for instance by the use of sound blankets), and implement if such measures are feasible and would noticeably reduce noise impacts. • Monitor the effectiveness of noise attenuation measures by taking noise measurements. • Maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other new noise-generating facilities. • Construct sound reducing barriers between noise sources and noise-sensitive land uses. **MM NOISE 2**: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to assess and mitigate to the extent feasible short- and long-term noise impacts in accordance with applicable regulations and to implement site-specific noise reduction measures, including the following as applicable: Such measures include, but are not limited to, the following: • Stationary noise sources can and should be located as far from adjacent sensitive receptors as possible and they should be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the Lead Agency (or other appropriate government agency) to provide equivalent noise reduction. • Implement, to the extent feasible and practicable, speed limits and limits on hours of operation of rail and transit systems, where such limits may reduce noise impacts. • Use techniques such as grade separation, buffer zones, landscaped berms, dense plantings, sound walls, reduced-noise paving materials, and traffic calming measures. • Maximize the distance of new route alignments from sensitive receptors. • Locate transit-related passenger stations, central maintenance facilities, decentralized	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	maintenance facilities, and electric substations away from sensitive receptors to the maximum extent feasible. • Use land use measures such as zoning, site design, and buffers to ensure that future development is noise compatible with adjacent transportation facilities and land uses.	
Impact NOISE-2: Generation of excessive groundborne vibration or groundborne noise levels.	Implement **Mitigation Measure MM NOISE-1** and **MM NOISE-2.**	Significant at the regional and TPA levels.
Impact NOISE-3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels**.**	No mitigation is required.	Less than significant at the regional and TPA level.
POPULATION, HOUSING, AND EMPLOYMENT		
Impact POP-1: Induce substantial population growth to areas of the region either directly (by proposing new homes and businesses) or indirectly (by extending roads and other infrastructure)	**MM POP-1:** Kern COG, will work with its member agencies to implement growth strategies to create an urban form designed to focus development in TPAs in accordance with the policies, strategies and investments contained in the 2026 RTP, enhancing mobility and reducing land consumption, providing urban infrastructure to support growth and ensuring a jobs-housing balance that supports decreases in greenhouse gas emissions.	Significant at the regional and TPA levels.
Impact POP-2: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.	**MM POP-2:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to evaluate alternate route alignments and transportation facilities that minimize the displacement of homes and businesses. An iterative design and impact analysis would help where impacts to homes or businesses are involved. Potential impacts should be minimized to the extent feasible. If possible, existing rights-of-way should be used. **MM POP-3:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to mitigate impacts to affordable housing as feasible through construction of affordable units (deed restricted to remain affordable for an appropriate period of time) or payment of any fee established to address loss of affordable housing.	Significant at the regional and TPA levels.
FIRE SERVICES		
Impact FIRE-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios and response times.	No mitigation is required	Less than significant at the regional and TPA level.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
POLICE SERVICES		
Impact POLICE-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios and response times.	No mitigation is required	Less than significant at the regional and TPA level.
SCHOOLS		
Impact EDU-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios or other educational performance factors.	No mitigation is required	Less than significant at the regional and TPA level.
LIBRARY		
Impact LIB-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered library facilities the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios.	No mitigation is required.	Less than significant at the regional and TPA levels.
RECREATION		
Impact REC-1: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial deterioration of the facilities could occur.	**MM REC-1:** Kern COG shall facilitate reducing future impacts as a result of increased use of existing neighborhood and regional parks or other facilities from population growth through cooperation with member agencies, information sharing, and program development in order to ensure consistency with planning for expansion of new neighborhood parks within or in nearby accessible locations to TPAs in funding opportunities and programs administered by Kern COG. **MM REC-2**: Kern COG, through its Environmental Review Program/Intergovernmental Review process shall encourage member jurisdictions to explore multiple use spaces and redevelopment in areas where it will provide more opportunities for recreational uses and access to natural areas close to the urban core. **MM REC-3**: Kern COG, through its Environmental Review Program/Intergovernmental Review process shall encourage member jurisdictions to work as partners to address regional outdoor recreation needs and to acquire the necessary funding for the implementation of their plans and programs. This should be done, in part, by consulting with agencies and organizations that have active open space work plans.	Significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact REC-2: Result in substantial adverse physical impacts associated with the provision of new or physically altered parks and recreational facilities the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios.	No mitigation is required.	Less than significant at the regional and TPA level.
TRANSPORTATION AND TRAFFIC		
Impact TR-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	No mitigation is required	Less than significant at the regional and TPA levels.
: Impact TR-2 Conflict or be inconsistent with *CEQA Guidelines* section 15064.3(b).	**MM TR-1:** Consistent with the CMP, Kern COG shall encourage and work with local governments to develop multimodal performance standards to determine how much traffic, during peak hours, is acceptable on state freeways, highways, and major streets within Kern County. Local jurisdictions should incorporate multimodal level of service standards in their circulation plans consistent with AB 1358 California Complete Streets Act of 2008 and as appropriate for each community facility type, place type and corridor type as recommended in the latest Highway Capacity Manual update. In addition, Kern COG will work with local agencies to identify frequency and routing of transit service, in order to assist in coordinating transit service provided by separate operators throughout Kern County. **MM TR-2:** In addition to the current Tier 1 and Tier 2 RTP projects, Kern COG shall continue to explore potential measures to reduce vehicular travel. Such measures as land-use strategies, car-sharing programs, additional car- and vanpool programs, additional bicycle programs, and implementation of a universal transit booking and fare collection smart phone application should be considered. **MM TR-3:** Kern COG will continue to encourage and facilitate transportation projects that maximize efficiency of the transportation system and include VMT reduction. **MM TR-4**: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to evaluate VMT as part of project specific review and identify and implement measures that reduce VMT including mixed use, alternative transportation facilities (bike racks, transit stops, and pedestrian amenities) as appropriate for each local agency.	Significant at the regional and TPA levels.
Impact TR-3: Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	No mitigation is required.	Less than significant at the regional and TPA level.
Impact TR-4: Result in inadequate emergency access.	No mitigation is required.	Less than significant at the regional and TPA level.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
WASTEWATER		
Impact WW-1: Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. **Impact WW-2:** Result in the determination by a wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projected demand in addition to the provider's existing commitments.	No mitigation is required.	Less than significant at the regional and TPA levels.
SOLID WASTE		
Impact SW-1: Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. **Impact SW-2:** Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	**MM SW-1:** Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage diversion of solid waste such as recycling and composting programs. **MM SW-2:** Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage local jurisdictions to require project sponsors to integrate green building measures consistent with CALGreen (California Building Code Title 24) into project design which could include the following: • Reuse and minimization of construction and demolition (C&D) debris and diversion of C&D waste from landfills to recycling facilities. • The inclusion of a waste management plan that promotes maximum C&D diversion. • Source reduction through (1) use of materials that are more durable and easier to repair and maintain, (2) design to generate less scrap material through dimensional planning, (3) increased recycled content, (4) use of reclaimed materials, and (5) use of structural materials in a dual role as finish material (e.g., stained concrete flooring, unfinished ceilings, etc.). • Reuse of existing structure and shell in renovation projects. • Design for deconstruction without compromising safety. • Design for flexibility through the use of moveable walls, raised floors, modular furniture, moveable task lighting, and other reusable building components. • **Development of indoor recycling program and space.** **MM SW-3:** Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage local jurisdictions and waste management agencies to discourage the siting of new landfills unless all other waste reduction and prevention actions have been fully explored. If landfill siting or expansion is necessary, landfills should be sited with an adequate landfill-owned, undeveloped land buffer to minimize the potential adverse impacts of the landfill in neighboring communities.	Significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
WILDFIRE		
Impact WF-1: Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including whether wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	**MM WF-1**: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to avoid siting new development in wildfire zones. **MM WF-2**: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to ensure that in the event that new development occurs in wildfire zones, the projects comply with safety measures as specified by CAL FIRE.	Significant at the regional and TPA levels.
Impact WF-2: If located in or near state responsibility areas of lands classified as very high fire hazard severity zones, would the project: Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	See **MM WF-1** and **MM WF-2**	Significant at the regional and TPA levels.
Impact WF-3: Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risks or that may result in temporary or ongoing impacts to the environment.	See **MM WF-1** and **MM WF-2**	Significant at the regional and TPA levels.
Impact WF-4: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope stability, or drainage changes.	See **MM WF-1** and **MM WF-2**	Significant at the regional and TPA levels.

3.0 PROJECT DESCRIPTION

This chapter describes the proposed 2026 Regional Transportation Plan/Sustainable Communities Strategy (2026 RTP or Plan), which is being evaluated in this Program EIR. The proposed 2026 RTP updates the 2022 RTP/SCS and is the "proposed project." The project description that follows describes the proposed 2026 RTP/SCS for purposes of analyzing the project's potential to cause environmental impacts (see **Chapter 4.0** for environmental analyses). This chapter provides an overview of the project's regional location, project background, and project objectives, as well as a detailed description of the proposed 2026 RTP/SCS.

3.1 INTRODUCTION

The 2026 RTP/SCS is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It has been developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, state, and federal agencies. California's Sustainable Communities and Climate Protection Act (Senate Bill [SB] 375) calls for RTPs to include a Sustainable Communities Strategy (SCS) that reduces greenhouse gas (GHG) emissions from passenger vehicles and light-duty trucks. Executive Order B-30-15, signed by Governor Brown in April 2015, and SB 32, approved in September 2016, established a statewide GHG reduction goal of 40 percent below 1990 levels by 2030 from all sources. EO B-55-18 established a statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." These are the most aggressive benchmarks enacted by any government in North America to reduce carbon emissions. The California Air Resources Board (CARB) sets the emissions reduction target for each region. Targets are reflective of conditions in each area of the state and are tailored to address conditions in each area. SB 375 will help meet the state goals included in Assembly Bill 32, the Global Warming Solutions Act of 2006. Meeting these targets will point the County toward overall sustainability and will provide benefits beyond reducing carbon emissions.

The Kern Council of Governments (Kern COG) is a federally designated Metropolitan Planning Organization (MPO) and a state-designated Regional Transportation Planning Agency (RTPA). These designations formally establish Kern COG's role in transportation planning. Kern COG's Board of Directors comprises elected representatives from the eleven incorporated cities within Kern County and two members of the County Board of Supervisors.

As an RTPA, Kern COG is mandated by California Government Code Section 65080 to prepare and periodically update the RTP/SCS. Indeed, regional transportation planning is a dynamic process requiring periodic refinement, monitoring, and amendment. The planning program for the next four-year period will

continue with extensive evaluation of the RTP/SCS, including the elements required by the federal surface transportation act, Fixing America's Surface Transportation (FAST) Act, signed into law December 4, 2015. Each component will be studied and modified consistent with RTP/SCS priorities as Kern County moves toward a more efficient, integrated, and multimodal transportation system.

3.2 PROJECT BACKGROUND

This Program Environmental Impact Report (PEIR) evaluates the potential environmental impacts that would occur with the adoption of the 2026 RTP/SCS by Kern COG. This document has been prepared to meet the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and *State CEQA Guidelines* (Title 14, California Code of Regulations (CCR), § 15000 et seq.).

The Kern COG planning area, shown in **Figure 3.0-1, Kern COG Planning Area**, encompasses Kern County, which includes two air basins and four air quality nonattainment or maintenance areas. Federal law requires that transportation and air quality planning be coordinated in these nonattainment and maintenance areas. The US Department of Transportation (USDOT), Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA) under Section 176(c) of the Federal Clean Air Act [42 USC 7506(c)] require that non-attainment areas provide conformity determinations on updated transportation plans and programs every four years. All RTPs must conform to air quality requirements, as well as meet a number of other goals, including specific requirements for interim years as well as the "horizon" year of regional transportation plans (the horizon year must be at least 20 years into the future).

In compliance with these requirements, the 2026 RTP/SCS includes a horizon year of 2049. Transportation investments in the region that receive state and federal funds or require federal approvals must be consistent with the RTP/SCS and, when funded, included in the Federal Transportation Improvement Program (TIP). The TIP covers four years and is updated biennially on an even-year cycle (a 5th year includes projects that have been added for informational purposes only). It represents the immediate, near-term commitments of the RTP/SCS.

Kern COG is also required to prepare an RTP/SCS pursuant to Section 65080 of the California Government Code. The state requirements largely mirror the federal requirements and require MPOs/RTPAs in urban areas to adopt and submit an updated RTP/SCS to the California Transportation Commission (CTC) and the California Department of Transportation (Caltrans) every four years. To ensure a degree of statewide consistency in the development of RTP/SCSs, the CTC, under Government Code Section 14522, prepared RTP Guidelines.



SOURCE: Esri, 2025

FIGURE **3.0-1**

Kern COG Planning Area

IMPACT SCIENCES

1170.004•01/25

The adopted guidelines include a requirement for program-level performance measures, which include criteria that reflect the goals and objectives of the RTP. In addition, as noted above, the initial years of the plan must be consistent with the TIP. As discussed above, pursuant to SB 375, Kern COG is required to submit the SCS to CARB for the purpose of determining whether the applicable greenhouse gas targets (identified by CARB for each region) have been met.

The 2026 RTP/SCS is a long-range Regional Transportation Plan that includes projects, policies, and strategies to create a blueprint for the region's growth through 2049. The 2022 RTP/SCS included improvements to the transportation system, including closures to critical gaps in the network that hinder access to certain parts of the region, as well as the strategic expansion of the transportation system. In addition to new projects that are included in the 2026 RTP/SCS, many projects from the 2022 RTP remain and are now considered committed or at least reasonably foreseeable (i.e., they are in the TIP and are thus included in the No Project scenario).

The 2026 RTP/SCS is intended to meet the changing socioeconomic, transportation infrastructure, financial, technological, and environmental conditions of the region. Individual projects are preliminarily identified in the 2026 RTP/SCS. Because projects are identified at a conceptual level for purposes of the RTP/SCS, this PEIR is programmatic in nature and does not specifically analyze individual projects. Project-level analyses will be prepared by implementing agencies on a project-by-project basis as projects proceed through the design, evaluation, and decision-making process. Project-specific planning and implementation undertaken by each project sponsor/implementing agency will depend on a number of issues, including policies, programs, and projects adopted at the local level; restrictions on federal, state, and local transportation funds; the results of feasibility studies for particular corridors; and project-specific environmental review.

In 2006, California became the first state in the country to adopt statewide GHG emissions reduction targets through AB 32. This law codifies the Executive Order S-3-05 requirement to reduce statewide emissions to 1990 levels by 2020. AB 32 resulted in CARB's 2008 adoption of a Climate Change Scoping Plan (Scoping Plan), outlining the state's plan to achieve emissions reductions through a combination of direct regulations, alternative compliance mechanisms, various incentives, voluntary actions, market-based mechanisms, and funding. The Scoping Plan identifies local governments as "essential partners" in the state's efforts to reduce emissions. The First Update to the Climate Change Scoping Plan was approved in 2014. In 2016, the Legislature passed SB 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. In November 2017, CARB adopted "California's 2017 Climate Change Scoping Plan," which sets forth a strategy for achieving California's 2030 GHG target and makes substantial advances towards reaching the 2050 climate goal of reducing GHG emissions by 80 percent below 1990 levels. In 2018, EO B-55-18 established a statewide goal "to achieve carbon neutrality as soon as possible,

and no later than 2045, and achieve and maintain net negative emissions thereafter." As noted above, this RTP/SCS must include an SCS pursuant to SB 375 (codified in Section 65080 of the California Government Code). SB 375 is intended to help meet the state goals included in AB 32. The 2017 Scoping Plan Update indicates that stronger SB 375 GHG reduction targets will enable the State to make significant progress toward AB 32 goals, but alone will not provide all of the VMT growth reductions that will be needed. It notes that there is a gap between what SB 375 can provide and what is needed to meet the State's 2030 and 2050 goals. The 2022 Scoping Plan Update recommends that local governments consider policies to further reduce VMT, including: land use and community design that reduces VMT; transit- oriented development; street design policies that prioritize transit, biking, and walking; and increasing low-carbon mobility choices, including improved access to viable and affordable public transportation and active transportation opportunities.

SB 375 addresses greenhouse (GHG) gas emissions from cars and light-duty trucks and aims to reduce these emissions through land use strategies. CARB identified preliminary SB 375 greenhouse gas emission goals for the Valley, including Kern County.

According to Section 65080 of the California Government Code, in summary, the SCS must:

- Identify existing land use;
- Identify areas to accommodate long-term housing needs;
- Identify areas to accommodate an eight-year projection of regional housing needs;
- Identify transportation needs and the planned transportation network;
- Consider resource areas and farmland;
- Consider state housing goals and objectives;
- Set forth a forecasted growth and development pattern; and
- Comply with federal law for developing and RTP.

Kern COG's SCS demonstrates the region's ability to attain the SB 375 GHG emissions reduction targets identified by CARB. The SCS outlines Kern COG's plan for integrating the transportation network and related strategies with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands.

Prior to adopting the 2026 RTP/SCS, Kern COG's Board must certify this PEIR. Local agencies, as well as transportation implementation agencies, will use the 2026 RTP/SCS and this PEIR as reference materials as part of their planning and project evaluation processes.

Kern Regional Blueprint

The Kern Regional Blueprint (2008), San Joaquin Valley Regional Blueprint (2009), Kern SB 375 Framework (2012), and the 2018 and 2022 RTP/SCSs laid much of the groundwork for the Kern COG 2022 RTP/SCS.

Adopted in November 2008, the Kern Regional Blueprint, based on the local General Plans of the cities and the County, established a grassroots vision, guiding principles, and an alternative growth scenario for the region in 2050. The Blueprint provides the foundation for advancing decision-making for growth management at the local and regional levels. It was developed to shape the region's future and as a tool for each community to inform how they shape their local community's future in the coming decades. Approximately 3,500 community members of all interests and backgrounds participated in the Blueprint development process. The Blueprint public involvement process began in 2006 and included two statistically valid, 1,200-person quality-of-life phone surveys.

The mutual vision for the future of the Kern region includes:

- Economic development opportunities linked to the education system and current and future industries to build a strong local economy and diverse employment opportunities
- Livable and safe communities for everyone
- Unique natural resources and open spaces—a healthy environment in which to explore and recreate

Blueprint participants crafted a set of principles for growth in the Kern region that will help inform decision-making in local communities. These principles for growth are:

- Enhance economic vitality
- Conserve energy and natural resources, and develop alternatives
- Provide adequate and equitable services
- Provide a variety of transportation choices
- Provide a variety of housing choices
- Use and improve existing community assets and infrastructure
- Use compact, efficient development and/or mixed land uses where appropriate
- Conserve undeveloped land and spaces
- Increase civic and public engagement

These principles were reconfirmed as part of the *Directions to 2050* outreach process and are supported by the goals of the 2026 RTP/SCS. Directions to 2050 community participants expressed continuing support for all nine principles for growth, indicating they are still relevant to the Kern region.

Since the initial Blueprint process, Kern COG has completed annual statistically valid, quality-of-life phone surveys to track changes in public opinion. The most recent survey (2025) found that preserving water supply is now the highest-ranking issue on which local governments should be focused.

San Joaquin Valley Regional Blueprint

The San Joaquin Valley Regional Blueprint stitched together the Kern Blueprint with the seven other county grassroots blueprint efforts, developed by the seven other regional planning agencies (RPAs). The RPAs collaborated to develop a long-term strategy for the future of the eight-county region.

Adopted in 2009, the San Joaquin Valley Regional Blueprint effort included Kern COG, Fresno COG, Kings County Association of Governments, Madera County Association of Governments, Merced County Association of Governments, San Joaquin COG, Stanislaus COG, and Tulare County Association of Governments to develop voluntary, long-term regional growth principles for the future of the eight-county region.

The valley-wide Blueprint identified 12 voluntary-growth principles that were consistent with the nine Kern Regional Blueprint principles for growth:

- Create a range of housing opportunities and choices
- Create walkable neighborhoods
- Encourage community and stakeholder collaboration
- Foster distinctive, attractive communities with a strong sense of place
- Make development decisions predictable, fair, and cost-effective
- Mix land uses
- Reserve open space, farmland, natural beauty, and critical environmental areas
- Provide a variety of transportation choices
- Strengthen and direct development toward existing communities
- Take advantage of compact building design
- Enhance the economic vitality of the region
- Support actions that encourage environmental resource management

Kern COG SB 375 Framework

In February 2012, the Kern COG Board of Directors adopted the SB 375 Framework. Kern COG's Regional Planning Advisory Committee (RPAC), a committee comprised of local government, agency, and

stakeholder representatives, worked together to develop the framework. The framework's purpose was to guide the development and implementation of the SCS with agreed-upon core values and core actions.

The SB 375 Framework Core Values are:

1. The Sustainable Communities Strategy relies on the existing and planned circulation networks and land use designations for Kern County and its 11 incorporated cities.

2. The Sustainable Communities Strategy shall not hinder the local land use authority of Kern County and its 11 incorporated cities.

3. The Sustainable Communities Strategy shall allow Kern County and its 11 incorporated cities to continue the pursuit and promotion of a diversified economic base.

4. Kern County shall continue to discuss cooperation and coordination with the seven other counties located in the Central San Joaquin Valley to develop a regional Sustainable Community Strategy that recognizes both shared and unique characteristics of each of the eight counties.

3.3 PURPOSE AND NEED FOR ACTION

The purpose of the 2026 RTP/SCS is to provide a clear, long-term vision of the regional transportation goals, policies, objectives, and strategies for Kern County while at the same time providing strategies to reduce greenhouse gas emissions as required by SB 375. The necessity for the RTP/SCS is driven by the need to plan for improvements to the aging regional transportation system and preserve its long-term viability in light of the projected population growth.

The 2026 RTP/SCS reduces greenhouse gas emissions as required by SB 375. The 2026 RTP/SCS identifies infrastructure projects and improvements to reduce traffic and congestion. The 2026 RTP/SCS includes mobility as an important component and also incorporates added emphasis on sustainability and integrated planning. The 2026 RTP/SCS contains projects, policies, and strategies to achieve a wide range of positive outcomes. It identifies reasonably available sources of funding for transportation. The 2026 RTP/SCS is a blueprint for improving the quality of life for residents of Kern County by planning for wise transportation investments and informed land use choices. The 2026 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. The 2026 RTP/SCS would also generally improve air quality, improve health, and reduce greenhouse gas emissions consistent with SB 375 requirements. The 2026 RTP/SCS achieves its overall objectives by combining transportation investment and policies with integrated land use strategies that reduce vehicle miles traveled (VMT) and emissions. These land use strategies include:

- Focusing on new growth and development in areas well served by transit,
- Promoting a better fit between jobs and housing,
- Redirecting future housing growth toward more compact unit types, and
- Promoting a mix of uses and neighborhood design that enables more walking and biking trips.

Over the lifetime of the 2026 RTP/SCS, Kern forecasts that there will be an additional 106,900 people added to this large and diverse area. The 2026 RTP/SCS is based on growth forecasts in the region in 2049, as shown in **Table 3.0-1, Existing and 2049 Population, Households, and Employment**.

Table 3.0-1
Existing and 2049 Population, Households, and Employment

	Population		Households		Employment	
	Existing (2025)	Plan (2049)	Existing (2025)	Plan (2049)	Existing (2025)	Plan (2049)
Kern COG	914,754	1,017,200	293,345	351,900	357,420	426,900

Note: The 2026 RTP uses a base year of 2024 due to modeling requirements. Because the NOP for the EIR was released in 2025, this PEIR uses 2025 for existing conditions as required by CEQA. To determine the existing conditions numbers based on RTP modeling, a straight-line interpolation was conducted.
Source: Kern COG 2026, Impact Sciences 2026

Federal guidelines (40 CFR §1502.13) require the preparation of a statement of purpose and need in conjunction with environmental documents prepared to meet the requirements of the National Environmental Policy Act (NEPA). In accordance with these guidelines, these statements are prepared to briefly specify the underlying purpose of a specific project and the need for the project. The Lead Agency must identify how the proposed action and/or alternatives respond to the purpose and need for the project. Although adoption of the 2026 RTP/SCS is not subject to NEPA, Kern COG has chosen to include this statement of purpose and need to enable proponents of specific projects included in the 2026 RTP/SCS to discuss the purpose and need for their individual projects relative to the Plan.

Note that this statement of purpose and need has been prepared to identify the underlying purpose for adopting the 2026 RTP/SCS. It was not prepared to be a comprehensive statement of need for each individual RTP project. Where appropriate, this statement of need may be incorporated by reference in project-specific NEPA documents as provided in 40 CFR Section 1502.21.

3.4 PROJECT LOCATION AND SITE CHARACTERISTICS

Generally, the western portion of Kern County is located within California's Southern San Joaquin Valley and the eastern portion is generally located within the Sierra Nevada and high desert region. Encompassing

8,171 square miles, the County is situated along State Route (SR)-99, approximately 100 miles north of Los Angeles. The County has a range of altitudes from 206 feet above sea level near the City of Delano to the highest point at 8,755 feet at the summit of Sawmill Mountain on the south line of the County. As of 2025, Kern County's estimated population is approximately 914,754 (see **Table 3.0-1**).

Kern County is the third largest (in terms of area) county in California and is 159 miles from the northwestern boundary to the southeastern boundary. The population is expected to grow to 1,017,200 persons by 2049, the horizon year for the RTP/SCS. Approximately two-thirds of Kern's population lives within 1/20th of the area within Metropolitan Bakersfield. Many of the County's employers (such as oil fields, farms, aerospace/defense) require long exurban commutes to areas that are not conducive to urban development.

There are 11 incorporated cities within Kern County: Delano, McFarland, Wasco, Shafter, Taft, Maricopa, Bakersfield, Arvin, Tehachapi, Ridgecrest, and California City.

Kern County is comprised of separate regions based on significant variations in terrain, climate, geographic, and environmental factors. The regions are identified as follows:

Valley Region: The southern San Joaquin Valley below an elevation of 1,000 feet mean sea level.

Mountain Region: The westernmost and central portion of the County above the 1,000-foot mean sea level contour in the valley and western region of the County and west of the primary alignment of the Los Angeles Aqueduct in the eastern section of the County, including the southernmost portion of the County.

Desert Region: The eastern section of the County, east of the primary alignment of the Los Angeles Aqueduct.

The 2026 RTP/SCS identified seven significant industries in Kern County:

- **Value-Added Agriculture** is defined as the transformation of agricultural products to a higher value for the end consumer. Examples can be seen when carrots are processed into smaller, "baby" carrots, or used in the production of vegetable juice. Locally produced products like POM Wonderful Pomegranate Juice, Wonderful Pistachios, Bunny-Luv Baby Carrots, and Halos Mandarins are well-known national brands. According to the Agriculture Issues Center at UC Davis, for every 100 jobs linked directly to the agricultural industry, an additional 106 jobs are created in the local economy. Kern County is the leading ag-producing region in the United States, with 1 in every 5 jobs related to agriculture. In addition, every dollar generated by value-added agriculture leads to an additional $1.27 generated by the region's non-agriculture economy.

- **Transportation and Logistics** is a fast-growing industry with significant potential in Kern County. With California's two major north–south freeways passing through the county, along with the only year-round pass over the Sierra Nevada in the San Joaquin Valley, Kern is a natural hub for continued growth in transportation and logistics and has become a prominent location for major distribution centers. As a leading economic cluster, it strengthens the competitiveness of the Energy/Natural Resources and Value-Added Agriculture sectors through warehousing, distribution, and related services. Kern's location near the geographic population center of California positions it as one of the most efficient and lowest-carbon footprint locations for centralized distribution statewide. However, distribution facilities are rarely located in urban infill areas, often drawing commuter/heavy truck traffic into rural communities, increasing their exposure to health-based criteria pollutants. Thus, efforts to reduce statewide carbon emissions can unintentionally increase local pollution burdens for vulnerable populations. To address this challenge, the Kern Area Regional Goods-Movement Operations (KARGO) studies have developed strategies to reduce community impacts while supporting growth in living-wage jobs associated with maintaining and operating advanced and autonomous systems in modern distribution and manufacturing facilities.

- **Energy and Natural Resources** production is the cornerstone and foundation of Kern County. Historically, oil production has driven energy development. Kern County is the top oil-producing county in California. Kern County alone produces 74 percent of California's oil. Kern County has four giant oil fields (greater than 1 billion barrels of cumulative production) and, as a whole, produces about 326,000 barrels of oil per day. In addition, cogeneration, which produces electricity as a by-product from steam used in the oil fields, produces much of the electricity used in both Kern and Los Angeles counties.

  Kern County led the state in 2011 with over 60,000 people employed in the Natural Resource and Mining industry. Of those, nearly 40 percent are occupations that are directly related to production and extraction. Consequently, heavy commute traffic is experienced both within adjacent rural areas and between urban and rural areas. This commute traffic is the primary consideration, as, unlike agricultural products, petroleum products are transported primarily by rail and pipeline. East Kern also includes gold and other mining operations. The largest borax mining operation in the world is located at the eastern edge of the county next to Boron, employing 600 workers working three shifts per day, seven days per week. An average of 5 trains per week transport the mineral to a bulk transload facility at the Port of Long Beach.

  Kern County is the renewable energy capitol for California, producing more renewable energy than any other county in the state, and is home to the nation's largest solar plant, wind farm, geothermal facility, and grid-level battery storage system. There are approximately 5,000 wind turbines in the

Tehachapi-Mojave wind corridor, and combined with the region's solar fields produce 1.7 terawatt hours (1.7 million megawatts) each year. Kern also has another 6,500 MWh of battery storage in place for these intermittent renewable sources. The county's dependence on energy and natural resource production as part of our economic structure is reflected in the fact that 8 out of 10 of the county's top taxpayers are either oil-producing and/or processing companies, renewable energy producers, or mining operations. New installation-related traffic can be expected to continue into the near future and likely well beyond.

- **Aerospace and Defense** remains a leading industry cluster for the county and particularly for eastern California. California is home to approximately 139,000 aerospace jobs, with over 23,000 of them in Kern County.[1] These high-wage, full-time jobs have staying power thanks to vast open land, lack of development encroachment, proximity to Los Angeles, and higher education levels per capita in East Kern than in most other regions in the county. China Lake is the Navy's largest single landholding in the world. It represents 85 percent of the Navy's land for research, development, tests, and evaluations use, and 40 percent of the Navy's land holdings worldwide. As weapons development continues, China Lake consistently adds jobs, both military and civilian.

  Edwards Air Force Base covers roughly 470 square miles and houses roughly 12,800 jobs at the Air Force Flight Test Center. Among its many military purposes, Edwards historically provided a landing place for NASA spaceships coming back from space exploration when weather did not permit landings in Florida.

  Mojave Air and Space Port emerged as the leading aerospace test center for commercial operations in North America. No longer a sleepy high desert general aviation Mojave Airport destination, Mojave Air and Space Port has amassed more first flights and significant newsworthy flight activity than any other airport in the world over the past twenty years. Mojave Air and Space Port and industrial park is currently home to more than 60 companies engaged in flight development, light industrial, to highly advanced aerospace design, flight test, and research, and even heavy rail industrial manufacturing. The potential for space tourism continues to be great, though other states are fiercely competing for this business.

- **Tourism, Recreation, and Entertainment** suggest continued growth opportunities in both annual expenditures and employment. This includes the generation of tourism and visit activity from people traveling between major cities in Northern and Southern California. Kern County's tourism, recreation & entertainment cluster provides almost 23,000 jobs throughout the county, primarily in

1 Kern COG, Chapter 4 – Sustainable Communities Strategy. 2026.

accommodation and food services. Increasing strengths within this cluster are in sports and recreation related to outdoor assets such as off-roading, water sports, and hiking. A major strategy of the RTP is promoting local history as a benefit to economic/tourism. Especially, highlighting the cultural and Native American history. The City of Ridgecrest has done this with its recognition of Native American petroglyphs in xeriscaping along SR 178. The Tejon Indian Tribe is also developing a casino/resort hotel near the confluence of SR 99 & I-5.

- **Correctional Facilities** - Another significant rural transportation issue is correctional institutions. Kern County has five public and private high-security institutions that house 10,000 federal, state, and local inmates. To manage these facilities, Kern County has almost 3,000 correctional officers and first-line supervisors who commute by auto and vanpool for each shift.

- **Healthcare Services** has been recast to reflect the vast array of services and networks in the county. Throughout the San Joaquin Valley, population growth has resulted in major increases in hospital and healthcare employment. Dignity Health is staying a step ahead of population growth by expanding services and facilities. Through teamwork, innovation, and advocacy, Mercy Hospital Downtown, Mercy Hospital Southwest, and Memorial Hospital, all operated by Dignity Health, are delivering on their promise to provide excellent, affordable health care to the community. New advancements in cardiac care at Memorial Hospital offer lifesaving options for heart patients. The Robert A. Grimm Children's Pavilion for Emergency Services is the newest addition to the Lauren Small Children's Center, established in 2012 at Memorial Hospital. The Pavilion is the only dedicated pediatric emergency department between Los Angeles and Madera, California. The Grossman Burn Center at Memorial Hospital is dedicated to delivering high-quality, compassionate care to the community. One concept for the Bakersfield HSR station area vision is a medical research campus, due to its close proximity to two existing hospitals.

Rural resource areas represent the vast majority of Kern County land uses. Kern's rural lands hold diverse resources strategic to Kern and California's growth and success. For example, Kern County produces 75 percent of all oil produced in California, and has over 60 percent of California's renewable energy.[2] One in six jobs in Kern County is directly related to the resource sectors of forestry, fishing, hunting, mining (i.e., oil and gas), and agriculture. Growing interest in ecotourism, from white water rafting to farmers' markets, offers an insight into the development of a diverse and vibrant economy. Economy. The RTP/SCS strives to provide feasible solutions to transportation, land use, and air quality issues that connect these strategic rural employment areas with the major urban areas of the County.

---

2 Kern EDC, Market Overview, 2025. available at: https://kernedc.com/market-overview/

3.5 PROJECT DESCRIPTION

The 2026 RTP/SCS is comprised of the following elements:

Policy Element. In Chapter 2, the Policy Element addresses legislative, planning, financial, and institutional issues and requirements, as well as areas of regional consensus (e.g., forecasted development patterns). This element provides guidance to decision-makers regarding the implications, impacts, opportunities, and forecasted options that will result from implementation of the RTP/SCS. In addition, the Policy Element is a resource that provides input and promotes consistency of actions taken by state, regional, and local agencies, such as transit agencies, congestion management agencies, and the California Highway Patrol.

Planning Assumptions. Chapter 3 describes the planning assumptions applied in developing the 2026 RTP. In 2001, the Kern COG Board adopted a policy to revisit the regional growth forecast every 3-5 years. The Board has adopted forecasts six times since that policy was implemented, the most recent being in April 2024. As in all parts of California, housing affordability is linked to job growth, and Kern is noted for being the most affordable housing market in the state[3] making Bakersfield a destination for household migration from more expensive markets, like Southern California, that are experiencing a major housing shortage/affordability crisis. State policies for expanding the renewable energy portfolio continue to provide jobs in this industry, and a new streamlined, environmentally protective permit system for oil and gas supports continued permit activity.

In addition, the growth assumptions include a planned High Speed Rail station for Bakersfield, which would provide 55-minute passenger rail service between Kern and L.A. Union Station. This potential connection could eventually bring greater job diversity and housing to Kern County beyond historic growth trends.

Sustainable Communities Strategy. As discussed earlier, the 2026 RTP includes an SCS – Chapter 4. The SCS includes land use planning strategies and policies to reduce air emissions from passenger vehicles and light-duty truck travel by better coordinating transportation expenditures with forecasted development patterns in order to meet the GHG emissions reduction targets for the region.

Strategic Investment. Chapter 5, Strategic Investment, sets forth plans of action for the region to pursue and meet identified transportation needs and issues. Planned investments are consistent with the goals and policies of the plan, the SCS element, and must be financially constrained. These projects are listed in the Constrained Program of Projects and are modeled in the Air Quality Conformity Analysis.

---

3 Smart Asset, https://smartasset.com/mortgage/quicken-loans-review#california/most-affordable, 2017

Financial Element. RTPs must include a Financial Element – Chapter 6, that identifies monetary resources to implement the plan (23 USC 134(h)(2)(B)). This Chapter serves as the Financial Element to fulfill the federal requirement that the 2026 RTP be financially constrained (i.e., budgeted) and provides a cost analysis for implementing the program of projects included in the Strategic Investments (Action Element). It describes the anticipated financial situation that will exist between FY 2026 and FY 2049, the implementation period for this 2026 RTP.

Future Links. Chapter 7 – Future Links addresses key future trends that may affect the RTP in future cycles. Forecasting for more than 5 years can be challenging; as such, forecasts should be updated regularly. The Future Links Chapter discusses some major game changers that need to be watched closely with each update of the RTP, including corridor preservation, needed unfunded projects and financial mechanisms, adaptive cruise control/autonomous vehicle technology, high-speed rail, air quality contingencies, and the San Joaquin Valley Regional Overview chapter.

Monitoring Progress. Chapter 8 deals with monitoring the progress of the transportation system. As the designated MPO for the Kern region, Kern COG monitors transportation plans, projects, and programs for consistency with regional plans. Kern COG also monitors the performance of the transportation system. This performance monitoring is especially important to inform the planning process for future RTPs. Regional transportation problems cannot be solved until they are identified and measured.

The RTP/SCS also addresses environmental justice in an appendix to the RTP. The projects, policies, and strategies that have committed, available, or reasonably available funding sources constitute the 2026 RTP/SCS, which is also referred to as the "constrained plan."

The 2026 RTP/SCS contains a listing of "unconstrained" projects. Unlike the constrained plan, the unconstrained projects present a vision for regional improvements beyond committed, available, or reasonably available funding sources. It also identifies additional projects that require study and consensus building before the decision can be made as to whether to commit the funding to include these projects in a future RTP/SCS's constrained plan. These are projects for which funding sources have not been identified, but the implementation of which would provide transportation, air quality, and health benefits to the region.

This PEIR does not analyze these strategic projects because their lack of funding indicates that implementation is speculative at this point. In general, these projects would improve transportation-related performance in the region and reduce certain types of air emissions. Many of the segments would have environmental impacts along their routes (similar to impacts discussed for RTP/SCS projects) as they may

pass through environmentally sensitive areas. If these projects become reasonably foreseeable, their impacts will be addressed in future RTP/SCSs and associated PEIRs.

The following describes the major functional components of the 2026 RTP/SCS. Chapters that are not covered in this summary description (i.e., Financial Plan, Future Links, and Monitoring Progress) support the projects, policies, and strategies in the sections described here and do not, on their own, contribute to environmental impacts. The chapters of the 2026 RTP/SCS that are relevant to the analysis of potential environmental impacts of the Plan are as follows: Chapter 2: Policy Element, Chapter 3: Planning Assumptions; Chapter 4: Sustainable Communities Strategy; and Chapter 5: Strategic Investment.

3.5.1 Policy Element

The Policy Element addresses legislative, planning, financial, and institutional issues and requirements, as well as areas of regional consensus (e.g., land use policies). This element provides guidance to decision-makers regarding the implications, impacts, opportunities, and forecasted options that will result from implementation of the RTP/SCS. In addition, the Policy Element is a resource that provides input and promotes consistency of actions taken by state, regional, and local agencies, such as transit agencies, congestion management agencies, and the California Highway Patrol.

At the core of the 2026 RTP/SCS are seven goals:

1. **Mobility** – Improve the mobility of people and freight.
2. **Accessibility** – Improve accessibility to, and the economic wellbeing of, major employment and other regional activity centers.
3. **Reliability and Safety** – Improve the reliability and safety of the transportation system.
4. **Efficiency** – Maximize the efficiency and cost effectiveness of the existing and future transportation system.
5. **Livability** – Promote livable communities and satisfaction of consumers with the transportation system.
6. **Sustainability** – Provide for the enhancement and expansion of the system while minimizing effects on the environment.
7. **Equity** – Ensure an equitable distribution of the benefits among various demographic and user groups.

While all goals are considered interrelated and important, mobility is considered the plan's highest goal.

Relationship of RTP Goals to Directions to 2050

The Directions to 2050 outreach process identified the following principles as the top three priorities for the region and their community's future:

- Enhance economic vitality
- Provide a variety of housing choices
- Conserve undeveloped land and spaces

Examples of how the principles for growth interrelate with the RTP/SCS goals include the following:

- Improving mobility can include the addition of alternative fuels and modes that would help conserve energy and natural resources;
- Improving accessibility to major employment centers can make it more efficient to access and provide public services to these areas;
- Improving reliability and safety of the transportation system during peak periods can make it more convenient to do business in Kern, enhancing our region's economic vitality;
- Maximizing efficiency of the transportation system can be improved by providing a variety of housing types and densities that are distributed to take optimum advantage of transit and highway infrastructure;
- Promoting livability can be assisted by building on a community's historic assets;
- Promoting sustainability can reduce long-term operating costs, enhancing the economic viability of a region; and
- Ensuring equity can be assisted by providing affordable transportation options such as biking, walking, and transit.

Performance Measures

Kern COG has developed an integrated framework of performance measures to demonstrate consistency of the RTP and SCS with the RTP goals. Many of the performance measures overlap. For example, some measures are the same for environment/health urban and rural place types, and Countywide, while other measures may only be used in two of the three categories. **Table 3.0-2, RTP Goals, Performance Measures and Smart Mobility Framework Place Types Adapted for Kern County,** contains a breakdown of which measure applies to which categories and goals.

Table 3.0-2
RTP Goals, Performance Measures and Smart Mobility Framework Place Types Adapted for Kern County

RTP Goal/Performance Measure (PM) Category	Performance Measure Description	Performance Measure Target/Test	Smart Mobility Geographic Coverage Place type (PT)[1]
Mobility / health equity (transit)	Average Travel Time – Highways and Transit	Improvement over Countywide Average	Urban, rural, countywide PT
Accessibility / economic well-being / health equity (transit)	Average Travel Time to Job Centers – Highway & Transit Trips	Improvement over Countywide Average	Urban, rural, countywide PT
Efficiency / cost effectiveness / health equity (transit)	Average Daily Investment per Passenger Mile Traveled – Highways & Transit	Improvement over Countywide Average	Urban, rural, countywide PT
Livability / customer satisfaction	Average Trip Delay Time in Hours	Improvement over Countywide Average	Urban, rural, countywide PT
Environment / health equity	% Change NOx/PM by air basin	Improvement over Base Year	3 Air Basins
	% Change in Households within 500 feet of Roadway Volumes > 50,000	Improvement over Base Year	Urban, rural, countywide PT
Sustainability / preservation	Percentage Change in Maintenance Dollars Per Lane Mile	Improvement over Base Year	Countywide PT
Equity / health equity (transit)	% of Expenditures versus Passenger Miles Traveled in 2049 – Highways & Transit	Investment % higher than passenger miles traveled	Urban, rural, countywide PT
Land Consumption / health equity	% change in Farmland consumed outside City Spheres of Influence	Improvement over Historic Baseline	Countywide PT
Health equity	Health Cost Savings	Improvement over No Project Baseline	Countywide PT
Reliability / congestion	Average Level of Congestion in Hours	Improvement over Base Year	Urban, countywide PT
Reliability / safety / health equity	Annualized Accident Statistics for Annual Average Daily Traffic	Improvement over Countywide Average	Urban, rural, countywide PT
Federal PM-1 Safety/health equity	Forecast of Accidents for Vehicles, Bicycles and Pedestrians	Improvement over 5 year running base	Countywide PT

Note: Smart Mobility Place Type – As part of the Caltrans Smart Mobility Framework (SMF), the SMF introduces place types specifically designed as tools for planning and programming that implement Smart Mobility. Each of the place types creates a distinct context for transportation investments and distinct opportunities to gain Smart Mobility benefits . The SMF can be found here: https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/office-of-smart-mobility-and-climate-change/smf-handbook-062210-a-a11y.pdf

One of the most important goals of the 2026 RTP/SCS is to achieve SB 375 targets as established by CARB. Kern COG has made certain land use assumptions based on the policies and projects contained within the RTP/SCS and market demand (within existing zoning) in order to model anticipated development in the year 2049. However, it will be up to individual jurisdictions to determine consistency of individual projects with the RTP/SCS (including the SB 375 goals). It is not the intent of the RTP/SCS or associated modeling effort to impose land use requirements on local jurisdictions.

3.5.2 Planning Assumptions

Kern COG is the state affiliate data center for Kern County, and oversees transportation plans, programs, and transportation-related projects for its eleven cities: Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco. In addition, Kern COG has oversight of similar plans, programs, and projects within the unincorporated areas of Kern County.

It is important that forecasts are updated frequently to account for recent trend changes. As noted above, in 2001, the Kern COG Board adopted a policy to revisit the regional growth forecast every 3-5 years to ensure projections account for the latest growth trends. This timeframe provides stability to the regional environmental process by allowing time for documents to be completed without a major change to the forecast. On April 18, 2024 the Kern COG board adopted a growth forecast update. The report documents a sophisticated forecast model used to update the regional growth forecast previously adopted in 2020. The report states,

> *"Kern COG's Regional Growth Forecast and Demographic Forecast is a core tool for understanding the most likely trajectory for growth and development. Kern COG typically updates the forecasts prior to preparing an update to the RTP and SCS, intending the forecasts to inform the discussions and decision-making that go into preparing and adopting the plans. Kern COG also uses the forecasts to update the regional traffic model, which is another important tool used in preparing the plans"*

The principal elements of the growth forecast are:

- Population
- Number of housing units
- Number of households, and
- Employment

The forecast of these indicators is largely influenced by economic conditions prevailing in the state and county. Economies that are vibrant and creating jobs will encourage new immigrants who augment the

population. Higher population growth influences the demand for housing, infrastructure, and transportation. The next scheduled update will be during the two-year window starting April 2027.

Regional Population, Housing, and Employment Forecasts

As of 2024, the population in Kern County was estimated to be 912,600 persons.[4] Over the 2010–2020 decade, the county's annual population increased by 60 percent lower than the prior decade, which included some of the rebound years following the Great Recession in 2006. The newly adopted forecast projects slower growth compared to prior RTP assumptions, reflecting lower birth rates, changing migration dynamics, and moderated expansion in core economic sectors. The time period from 2024 to 2049 sees roughly a 12 percent growth in population, households, and employment, less than half the growth forecasted in the prior RTP.[5]

Over the Plan timeline, growth in the Kern region could vary widely based on several factors, including spillover from Southern California's urban areas, water availability, employment opportunities, housing costs, interest rates, high-speed rail, air quality regulations, and land availability. The combined general plans within Kern County designate sufficient land to absorb growth at twice the rate forecasted by 2049, assuming water and urban services are available. At current growth rates, Kern's population will grow by approximately 10 percent within the life of the 2026 RTP/SCS.[6]

In the near term, natural increases will continue to fuel population growth as more people are born than die. At the same time, a huge "baby boomer" population group is retiring and has set the stage for conversion of existing vacation homes in the mountain areas to primary residences. The increase of telecommuting workers will also allow more remote locations to become primary residences.

In Metropolitan Bakersfield, over 75 percent of new housing construction has occurred on the west side: roughly 35 percent in the northern areas north of the Kern River, and another 40 percent in the southwest. Recent infrastructure investment—including the completion of a new water delivery system—has supported a resumption of development in the eastern portion of Greater Bakersfield as well.

Looking ahead to the post-2035 period, significant growth is anticipated in Kern's southern gateway region, particularly through large-scale, master-planned development projects tied to the Tejon Ranch. The Tejon Mountain Village Specific Plan, located along I-5 between Frazier Park and Fort Tejon, will introduce a mixed-use community with 3,450 residential units and related commercial development. The Grapevine

4 Kern COG, Chapter 3 – Planning Assumptions. 2026.

5 Kern COG, Chapter 3 – Planning Assumptions. 2026.

6 Kern COG, Chapter 3 – Planning Assumptions. 2026.

project, a smart growth master-planned community with approximately 12,000 residential units and commercial infrastructure, is expected to begin construction during the planning period. These developments are designed with a strong jobs-housing balance, supported by employment opportunities at the nearby Tejon Ranch Commerce Center.

According to the California Economic Development Department, Kern has added an average of 4,314 jobs per year over the past 35 years. The top industries in the County for employment are farm work, government work, and wholesale/retail trade, consistent with historic data.[7] The unemployment rate in Kern County was 9.5 percent in February 2026, up from 9.3 percent in February 2025 and the December 2025 estimate of 8.3 percent.[8]

Statewide, housing affordability is strongly tied to employment growth, and Kern has one of the most affordable housing markets in California. This relative affordability continues to attract net migration from higher-cost areas (e.g., Southern California), especially for households seeking lower-cost housing options. As remote work gains traction and employers consider satellite or regional offices, Kern captures new population and employment growth. Simultaneously, the county remains responsive to state policies expanding renewable energy deployment (with associated jobs) and reopened permitting frameworks for oil/gas operations.

In addition, the forecasted growth would continue to incorporate the planned development of a High Speed Rail (HSR) station in Bakersfield, with the funded first phase shaving 1 hour off of passenger current rail travel in the San Joaquin Valley to the Bay Area and Sacramento by as early as 2032.[9] This connection could eventually bring greater job diversity and housing to Kern County beyond historic growth trends.

3.5.3 Sustainable Communities Strategy

The passage of SB 375 gave Kern COG a new area of responsibility and provided for a renewed opportunity to focus on an integrated planning effort for the future. SB 375 was established to implement the state's GHG emissions reduction goals, as set forth by AB 32, in the sector of cars and light trucks. This mandate requires CARB to determine per-capita GHG emission reduction targets for each MPO in the state at two points (2020 and 2035).

---

7 California Employment Development Department. 2026. "Labor Market Information, Bakersfield MSA, Industry Employment & Labor Information – by Annual Average March 2025 Benchmark."

8 State of California Employment Development Department. Unemployment Rate Historical Trend. April 2022 Available online at: https://www.labormarketinfo.edd.ca.gov/file/lfmonth/bake$pds.pdf, accessed on April 17, 2026.

9 CHSRA, 2024 https://hsr.ca.gov/about/project-update-reports/2025-project-update-report/

On September 23, 2020, CARB updated regional greenhouse gas reduction targets for the San Joaquin Valley under Senate Bill 375. The targets call for a 19 percent reduction in per capita emissions from passenger vehicles and light-duty trucks by 2035, relative to 2005 levels, to be achieved through coordinated land use and transportation planning.

Because GHG emissions in the transportation sector relate closely to vehicle miles traveled (VMT), a mandated GHG reduction for cars and light trucks essentially requires Kern COG to devise a regional plan and a series of strategies that will produce a per capita reduction in VMT over the next 24 years, although strategies that do not reduce VMT are also included (such as efforts to encourage non-polluting vehicles). Under SB 375, Kern COG and California's 17 other MPOs must address GHG reduction in an SCS as part of the RTP.

However, the RTP/SCS is at its core a transportation plan. The SCS seeks to better coordinate the process that Kern COG and local agencies use to prioritize long-range transportation investments by ensuring that they are aligned with the forecasted development patterns that achieve RTP/SCS goals.

SCS Development Pattern

GC Section 65080(b)(2)(B)(vii) requires MPOs to set forth a forecasted development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, will reduce emissions from automobiles and light-duty trucks to achieve, if there is a feasible way to do so, the emissions reduction targets approved by CARB. The development pattern is discussed in RTP/SCS Chapter 4 on the Sustainable Community Strategy.

Housing the Kern Region's Population

The SCS Strategy Maps (**Figure 3.0-2, Transit Priority and Strategic Employment Place Types, Figure 3.0-3, Transit Priority and Strategic Employment Place Types – Metro Bakersfield**, and **Figure 3.0-4, Forecasted Development Pattern Kern Region 2035)** have been developed by Kern COG and show both the place types reflecting forecasted development patterns and Kern COG modeling assumptions, and the planned transportation investments from this RTP.

The maps show how investments in transportation are being coordinated with forecasted development patterns to reduce emissions from automobiles and light-duty trucks. The maps contain transit priority and strategic employment areas and transportation infrastructure that are existing, planned, or proposed, and have been grouped by Kern COG into descriptive types. The maps were developed with input from the Transportation Modeling Committee and the RPAC, but there are currently no general plans adopted that use these terms or categories.

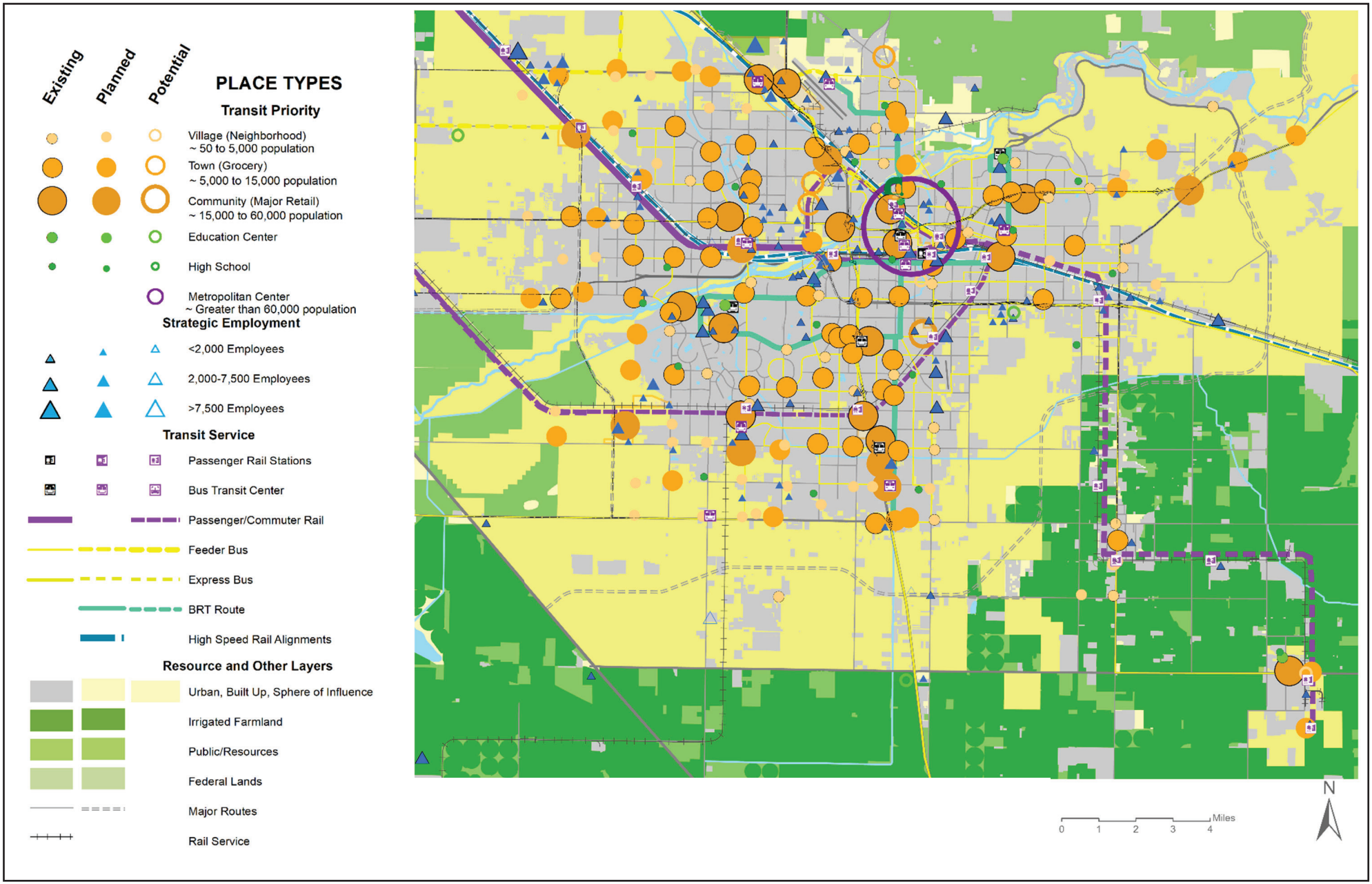


SOURCE: Kern COG, 2026

FIGURE **3.0-2**

IMPACT SCIENCES

Transit Priority and Strategic Employment Place Types



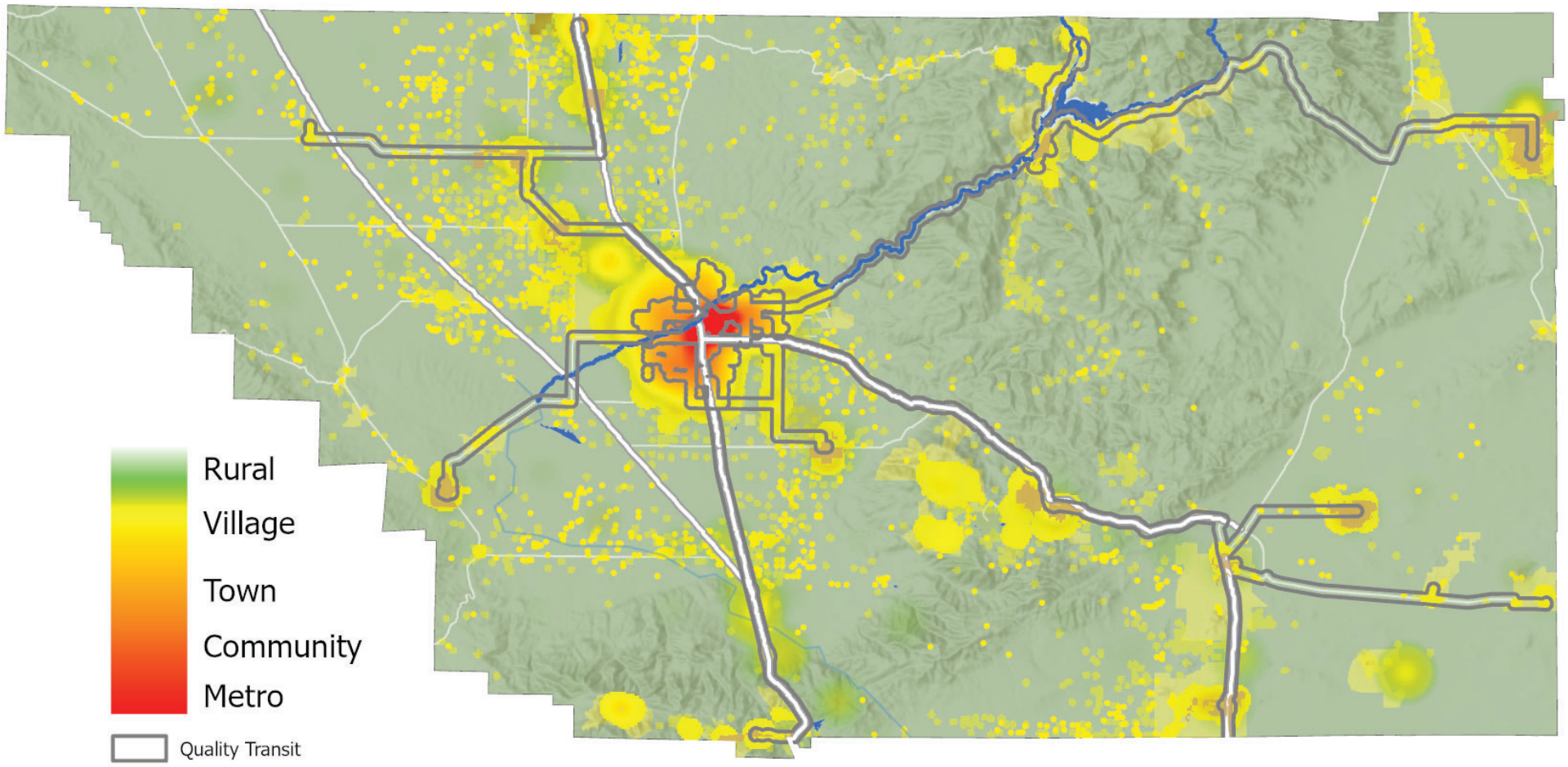
SOURCE: Kern COG, 2026

FIGURE **3.0-3**

IMPACT SCIENCES

Transit Priority and Strategic Employment Place Types – Metro Bakersfield

1170.004•04/26



SOURCE: Kern COG, 2026

FIGURE **3.0-4**

IMPACT SCIENCES

Forecasted Development Pattern Kern Region 2035

To develop these conceptual maps, staff identified existing, planned, and potential Transit Priority and Strategic Employment Place Types. The map legend identifies which place types exist by using a dark outline, planned place types have no outline, and potential place types are hollow. Aerial photography was used to identify which ones were existing. Each agency's local general plan was used to identify the land uses where these types of developments were permitted. Local jurisdiction staff provided feedback on the final placement of the place type locations. If one was requested that was not shown in a local general plan, it is shown as a potential location on the map. In summary, the place type locations on the SCS Strategy Maps reflect local jurisdiction general plans and input. Updates are made every four years.

The following place types employed in the RTP are not intended to represent detailed land use designations or policies but are used to describe the general conditions likely to occur within a specific generalized area based on the assumptions made by local authorities. The place types are each comprised of specific characteristics related to jobs and housing intensity, urban design, and transportation choices. It is important to note that these maps are only a snapshot of forecasted development patterns and Kern COG modeling assumptions to be updated every four years. For the latest information on land use, land use designations, and transit concepts, please refer to the appropriate local jurisdictions.

Metropolitan (Metro)

Metro areas are the regions' primary business, civic, commercial, and cultural centers that can exceed 60,000 in population. These districts have significant amounts of employment and corresponding residential uses and retail, typically clustered in multistory buildings, and include easy access to neighboring residential and employment areas. Metro areas are served by numerous transportation choices. Existing and planned enhancements may include easy walk/bike design and improved transit. Metro areas are also typically located at the convergence of several high-capacity transit facilities, such as passenger rail. The proposed Bakersfield metro center for Kern is also the planned location for the enhanced passenger rail service, such as high-speed rail. In East Kern, the closest metro place type is Palmdale/Lancaster in Northern L.A. County.

Community

Community place types feature subregional business, civic, commercial, and cultural centers and draw activity from the subregional area. These areas may range from 15,000 to 60,000 persons or more and contain significant employment centers and a mix of housing choices, supported by retail and daily services. Existing and planned community enhancements may include easy walk/bike design and improved transit.

Town

Town place types feature business activity, local-serving retail, daily services, housing choices, and may include a civic and cultural center, drawing activity from the town and immediate area. These areas may range from 5,000 to 15,000 people or more. Existing and planned enhancements may include easy walk/bike design and improved transit.

Village

Village place types feature business activity and essential local services, and housing choices. These areas may range from 50 to 5,000 people or more. Existing and planned enhancements may include easy walk/bike design and improved transit as appropriate.

Strategic Employment (Rural/Urban)

Strategic employment areas can be found in rural and more urban areas and may include both jobs and housing, though these two uses are rarely found in close proximity to each other. These locations correspond to local jurisdiction general plan areas designated primarily for industrial and/or commercial uses, and adjusted based on local jurisdiction input. The maps include three different sizes of strategic employment areas based on future employment levels. These areas often contain employment in isolated resource areas with sporadic activity dependent on the strategic resource at the site (wind energy, agriculture, etc.). Many strategic employment areas are characterized by large operations located in close proximity to a resource to minimize transportation costs and the carbon footprint. In urban areas, existing and planned enhancements may include easy walk/bike design and improved transit. In rural strategic employment areas, regional transit and/or vanpooling are existing or planned along with interconnectivity and safety projects.

The transit priority and strategic employment areas were jointly adopted by the city and county into the Metropolitan Bakersfield General Plan in 1982 and are found in the community plans for most of the outlying communities. The concepts have a distinct advantage over a corridor and strip commercial development pattern in that it provides for activity nodes around which future transit, and vanpooling services can be planned for in a way that is supportive of forecasted development patterns.

Education Centers

The SCS Strategy Maps also include existing, planned and potential education centers provided by the Kern County Superintendent of Schools and addressed matched using GIS. Kern COG also interviewed staff at the universities, colleges, and trade schools to ensure the latest information was used in development of the maps.

Figure 3.0-4 also depicts a forecasted development pattern based on local area planning assumptions consistent with the transit priority and strategic employment areas. The map also indicates a network of Quality Transit Areas (QTA). These are areas within one-half mile of fixed route transit service based on planned transit expenditures. Nearly all of the region's planned highway projects will benefit the QTA routes. In addition, the rural strategic employment areas outside the QTAs will also have access to carpool, vanpool and the HOV network being developed to benefit the resource areas consistent with SB 375.

3.5.4 Transportation Strategies Contained in the RTP/SCS

Managing transportation demand and making transportation system improvements are major components of the RTP/SCS. However, the RTP/SCS also focuses on the general land use growth pattern for the region because geographical relationships between land uses (such as density and intensity) help determine the need for travel. The RTP/SCS includes both a transportation component (described above) and a land use component (described below). In summary, under SB 375, an RTP/SCS must:

- Identify existing and future land use patterns;
- Consider statutory housing goals and objectives;
- Identify areas to accommodate long-term housing need;
- Identify areas to accommodate eight-year housing need;
- Consider resource areas and farmland;
- Identify transportation needs and the planned transportation network;
- Set forth a future land use pattern to meet GHG emissions reduction targets; and
- Comply with federal law for developing an RTP.

However, SB 375 specifically states that an SCS cannot dictate local General Plan land use or policies, but rather is intended to provide a regional policy foundation for local governments to build upon in reducing GHG emissions. As discussed in **Chapter 1.0**, qualifying projects that meet statutory criteria and are consistent with the RTP/SCS are eligible for streamlined environmental review.

The RTP/SCS demonstrates the region's ability to attain and exceed the GHG emission reduction targets identified by CARB. The RTP/SCS outlines a plan for integrating the transportation network and related strategies with an overall land use pattern that responds to projected growth, housing needs and changing demographics, and transportation demands.

One of the key components of the RTP/SCS is a sustainable regional forecasted development pattern that when integrated with the transportation network enables the region to accommodate future growth in a manner that reduces passenger vehicle emissions, enhances economic vitality, promotes housing

affordability, and encourages resource land conservation while preserving private property rights and local land use decision-making authority. This forecasted development pattern is the basis for development of the regional transportation system described throughout the 2026 RTP/SCS and summarized in the SCS. Kern County has a unique pattern that is dominated by rural, outlying areas. This section describes:

- Current development patterns, urban/rural connectivity, residential densities, and building intensities in the Kern region.
- Anticipated future population, jobs, and housing in the region.
- A forecasted development pattern, regional housing needs, and strategies to promote conservation of resource areas and farmland.

The RTP/SCS identifies QTAs as being located within ½ mile of fixed route transit service along the length of existing and planned routes. The SCS also identifies illustrative Transit Priority and Strategic Employment Place Types, which are primarily strategic employment areas characterized by concentrations of residential uses and jobs in close proximity to transit stations to minimize transportation costs and the carbon footprint. Transit Priority Areas (TPAs) combine these two concepts. TPAs are locations within ½ mile of transit stations where urban uses exist or may be planned. Not all of these areas have been identified, as station planning is in the early stages for some routes. The Golden Empire Transit (GET) Long Range Transit Plan, adopted in June 2012 and updated in 2024, was developed in coordination with SCS.

The Long-Range Transit Plan provides for an expansion of transit priority areas (these areas are eligible for environmental streamlining provisions under SB 375). **Figure 3.0-4** above illustrates the expansion of areas within one-half mile of passenger rail service or rapid bus service (15-minute headways), bus rapid transit, and/or light rail. Prior to 2012, only 5,600 people lived within one-half mile of high-quality transit areas. The Kern region has been proactive in expanding high-quality transit service since SB 375 passed in 2008. With the implementation of short-term transit improvements in 2012, the population served by transit priority areas has already expanded more than 20 times. Another 38 percent increase was realized by 2020, and an increase of up to 225 percent is anticipated by 2035 over 2012 service areas. The long-range transit plan assumes passage of a local transportation measure or other new funding source.

The Long-Range Transit Plan also analyzed improvements to the Kern Transit (KT) express bus system that services outlying communities. The plan found that KT can achieve operating efficiencies by interfacing with GET at its outlying transfer centers, reducing operating costs, and allowing service improvements to outlying communities.

In addition, 2012 saw the finalization of the Kern Commuter Rail Study. The study called for consideration of extending Metrolink service from Lancaster north to Rosamond and Edwards AFB in eastern Kern. The study recommended additional passenger rail stops on the Burlington Northern Santa Fe Railway alignment in northwest Bakersfield. The stops may become part of a future passenger feeder rail system for the high-speed rail project.[10]

3.5.5 Regional Housing Needs Assessment (RHNA)

Kern COG is responsible for preparing the RHNA for each jurisdiction within the County. Kern COG adopted the 2023- 2031 RHNA on July 21, 2022. Each jurisdiction is assigned a forecast of housing needs to be used in the local general plan housing elements. SB 375 required local jurisdictions to zone sufficient land to accommodate their housing needs. The law's intent is that all cities provide sufficient housing to accommodate the forecasted growth in an effort to slow increases in migration from coastal communities to inland communities. The increasing need for lower-income housing may require jurisdictions to consider strategies such as more affordable, compact housing around transit centers. The five recent studies on housing market demand (see **Chapter 3**, 2026 RTP – Forecast and Modeling Assumptions) indicate a growing interest in higher-density housing and mixed-use development in certain areas.

With enough land identified in local general plans to accommodate significantly more than the total forecasted housing need by 2031 and local plans and zoning that are flexible and responsive to changing market trends, the Kern region continues to have little difficulty in providing adequate acreage for housing.

The Kern region's official regional housing need from HCD for the projection period December 2023 – December 2031 is a minimum of 57,650 housing units (14,658 very low income, 9,328 low-income, 9,299 moderate income and 24,365 above moderate income). The 2026 RTP/SCS exceeds and is consistent with the minimum required by the HCD 6th Cycle Regional Housing Need Determination. Of these, approximately 41.6 percent are expected to be in the very low- and low-income category (affordable to those who make less than 80 percent of area median income), 16 percent are expected to be in the moderate-income category (affordable to those who make between 80 percent and 120 percent of median income) and 42 percent are expected to be offered at the above moderate-income category.[11] The allocation represents the minimum housing need that Kern COG's RHNA plan must address in total and also for

---

10 Kern COG, Commuter Rail Feasibility Study, 2012, Available at: https://www.kerncog.org/wp-content/uploads/2010/03/KernCOG_Commuter_Rail_Draft_Report_20120720.pdf, accessed April 28, 2026

11 Kern COG. Regional Housing Needs. Available online at: https://www.kerncog.org/regional-housing-needs/#:~:text=REAP%20is%20a%20State%20of,case%20studies%20and%20other%20resourceshttps://www.kerncog.org/regional-housing-needs/#:~:text=REAP%20is%20a%20State%20of,case%20studies%20and%20other%20resources., accessed April 22, 2026.

very-low, low, and moderate-income ranges. The SCS provides a forecasted development pattern that identifies where housing need could be accommodated in the future.

3.5.6 Reducing Greenhouse Gas Emissions in Kern County

The key purpose of SB 375 and the Kern region SCS is to reduce per capita emissions originating from passenger vehicles and light trucks. The 2026 RTP:

- Compares the emissions reductions anticipated with implementation of the SCS with the regional targets.
- Quantifies the effect of policies and programs in the RTP that reduce transportation-related emissions in the region.
- Describes sources of emissions in the Kern region, 2020 and 2035 emission reduction targets established by CARB for the San Joaquin Valley, and modeling techniques used to estimate and forecast emissions.
- Identifies statewide strategies to reduce transportation-related emissions and their anticipated effect within the Kern region.
- Identifies regional strategies that complement the SCS by reducing emissions in other sectors (e.g., energy consumption).

Comparison to Reduction Targets

In 2018, CARB set targets for lowering emissions in the eight San Joaquin Valley counties. The targets called for a 9 percent reduction in per capita emissions from passenger vehicles and light trucks in Kern by 2020, and a 15 percent reduction by 2035 through land use and transportation planning. Based on the analysis of strategies included in the SCS, CO2 emissions have now been observed to be 10.6 percent lower than 2005 levels in 2020 and 17.7 percent lower by 2035, meeting and exceeding the targets established by CARB in 2018.

GHG Modeling

The analysis of strategies for the RTP/SCS used the UPlan land use model, a significantly improved travel demand model (VMIP2), and the CARB Emission Factor model (EMFAC 2014). The modeling methodology was developed in close coordination with CARB and the seven other San Joaquin Valley COGs using the best available information and best modeling practices. The modeling reflects strategies that are technically

feasible to model. A more detailed discussion of modeling assumptions and forecasts can be found in Chapter 3 Regional Growth Forecast Modeling Assumptions.

The Kern region will exceed (improve upon) the identified CARB targets, as shown in **Table 3.0-3, Results for Greenhouse Gas Emissions on Vehicle Trips Reductions**. Targets will be met (exceeded) by focusing transportation expenditures on strategies such as transit/bike/walk facilities, and development of future housing closer to jobs and shopping.

Table 3.0-3
Results of SB 375 Greenhouse Gas Emissions and Vehicle Trips Reductions

Indicators and Measures	2020	2035
Total Population	906,710	975,900
VMT per Weekday (Miles, in Thousands)	23,974	25,415
SB 375 VMT by Passenger Vehicles per Weekday (-XX, Miles, in Thousands)	19,624	19,291
Per Capita VMT (All Travel)	26.44	26.04
Per Capita VMT SB 375	21.64	19.77
Difference between 2005 Base Per Capita VMT for SB375 (24.22 miles)	-10.6%	-14.2%
Modeled SB 375 CO2 Emissions by Passenger Vehicles per Weekday (lbs)*	7,296	7,433
Off-Model SB 375 CO2 Emissions Reductions by Passenger Vehicles per Weekday (lbs)**	0	68
Total SB 375 CO2 Emissions by Passenger Vehicles per Weekday (lbs)	7,296	7,365
Total Per Capita SB 375 CO2 Emissions by Passenger Vehicles per Weekday (lbs)	16.09	15.09
Total CO2e Pounds Per Capita Reduction***	-11%	-15%
SB 375 Targets (Targets Beginning October 1, 2018)	-9%	-15%

*Note: * SB 375 Modeling for 2026 RTP uses Emfac2014. Results for 2005 differ between Emfac2011 and Emfac2014.*
*** Targets were developed using Emfac2011, adjustment base on difference between Emfac2011 and Emfac2014 for the same model runs.*
**** Targets are expressed as a percent change in per capita passenger vehicle greenhouse gas emissions relative to 2005; CARB first set regional targets on September 23, 2010 and updated targets on March 22, 2018*
2035 SB 375 VMT uses CARB SB375 methodology.

3.5.7 Incentives and Other Approaches to Reducing GHG

The 2026 RTP/SCS is first and foremost a transportation plan. However, the transportation network and forecasted development patterns envisioned must complement each other. Integration of transportation and land use is essential for improved mobility and access to transportation options.

SB 375 calls for the integration of forecasted development patterns with transportation investments and asks that MPOs identify, quantify, and highlight co-benefits throughout the process. SB 375 provides CEQA incentives for development projects that are consistent with the regional RTP/SCS and help meet GHG emissions reduction targets. Kern County and the cities maintain their existing authority over local

planning and land use decisions, including discretion in certifying the environmental review for a project, regardless of eligibility for streamlining. To achieve the goals of the 2026 RTP/SCS, public agencies at all levels of government may implement a wide range of strategies that focus on four key areas:

- A transportation network that consists of public transit, highways, local streets, bikeways, and walkways.
- Transportation demand management (TDM) measures that reduce peak-period demand on the transportation network.
- Transportation systems management (TSM) measures that maximize the efficiency of the transportation network.
- A forecasted development pattern that accommodates the region's future employment and housing needs, especially in rural outlying areas while protecting habitat and resource areas.

Table 3.0-4, Identified SCS Strategies and Potential Off-Model Strategies, lists specific implementation strategies that local governments, Kern COG, and other stakeholders may consider in order to successfully implement the SCS.

Table 3.0-4
Identified SCS Strategies and Potential Off-Model Strategies

Strategy Type	Quantification Approach	Responsible Agencies	Notes
Land Use			
Infill, compact development, transit-oriented development, mixed-uses and allocation of growth along transportation corridors and in areas with higher access to bike, ped, and transit	Traffic/land use model	Local jurisdictions	Present in last plan -- Consistent with Core Area Impact Fee Development Incentive
Rebalance housing closer to employment/shopping areas	Traffic/land use model	Local jurisdictions	Present in last plan -- Assumes more shopping opportunities and housing in outlying communities near jobs
Accessory Dwelling Units (ADUs)	Traffic/land use model	Local jurisdictions	Present in last plan
Transportation Demand Management (TDM)			
Vanpooling	Off model	Vanpool entities	Present in the last plan
Employer- based trip-reduction programs (Rule 9410) eTRIP	Off model	Air District	Present in the last plan
Additional Bike & Pedestrian Infrastructure	Off model	Local jurisdiction	Present in the last plan

Strategy Type	Quantification Approach	Responsible Agencies	Notes
Telecommuting Promotion	Traffic model	COG	Off model in last plan
Transportation System Management (TSM):			
Transportation System Management (TSM), Intelligent Transportation Systems (ITS)	Off model	Local jurisdiction	Present in the last plan
Add HOV facilities	Traffic model	Caltrans	Present in last plan – ramp metering
Technology Improvements			
Additional Regional/Local Electric Vehicle Charging Station Installations	Off model	Local jurisdiction	Present in the last plan
Miocar Electric Carsharing in Disadvantaged Communities	Off model	COG, Non-profit	Present in the last plan
Bike Share Programs	Off model	Local jurisdiction	Present in the last plan
Regional Electric Vehicle Incentive Program	Off model	Air District	Present in the last plan
Pricing:			
Parking Management Program	Off model	Local jurisdiction	Present in the last plan
Reduced transit fares	Traffic model	Local jurisdiction	Present in the last plan
Circulation Improvements:			
Delay or Eliminate Capacity Projects	Traffic model	COG, Local jurisdictions	Present in last plan – delay west beltway

3.5.7 Other Sustainable Practices

Along with the rest of the state, the County of Kern is increasing sustainable practices. Through information sharing, coordination among agencies and other feasible means, including provision of funds as appropriate, Kern COG will continue to work to encourage and facilitate:

- energy and water conservation;
- protection of open space;
- protection of sensitive uses from noise and air quality impacts;
- increased permeable surfaces;
- improved stormwater management and protection of water resources;
- quality design; and
- other measures to minimize impacts on natural and man-made resources and promote increased livability in Kern County.

3.5.8 Strategic Investments

The 2026 RTP/SCS promotes a more efficient transportation system that calls for fully funding alternative transportation modes, while emphasizing transportation demand and transportation system management approaches for new highway capacity. The following are components of the planned sustainable transportation system to serve the needs of the Kern region:

- A revenue-constrained transportation network funded by financial resources expected between now and 2049.
- Transportation demand management (TDM) measures.
- Transportation system management (TSM) measures.
- Pricing measures.

A summary of RTP/SCS transportation projects is provided in **Tables 3.0-5**. **Figure 3.0-5** provides a map of the RTP/SCS projects. **Figure 3.0-6** provides a map of the RTP bicycle network.

Revenue-Constrained Network

Important parts of the revenue-constrained transportation network, which is described more fully in RTP/SCS Chapter 5, Strategic Investments, include an emphasis on maintenance, global gateways, a significant investment in public transit (rail and bus), and facilities that encourage walking and bicycling as forms of active transportation. The aim of these investments is to significantly increase the attractiveness of public transit, walking, and bicycling. Investments in the Kern region's local streets and roads, including access to regional airports, goods movement projects, and TDM and TSM projects and programs, are also integral to the overall transportation network.

Rail/Public Transit

The overarching goal of the rail and public transit investments detailed in the 2026 RTP/SCS is to provide high-volume rail and transit corridors to move goods and people in and through the region. The objective is to efficiently move goods to and through the region, while connecting homes to the major regional employment centers and high-speed connections to destinations beyond the region. Rail and public transit measures identified in the 2026 RTP/SCS include:

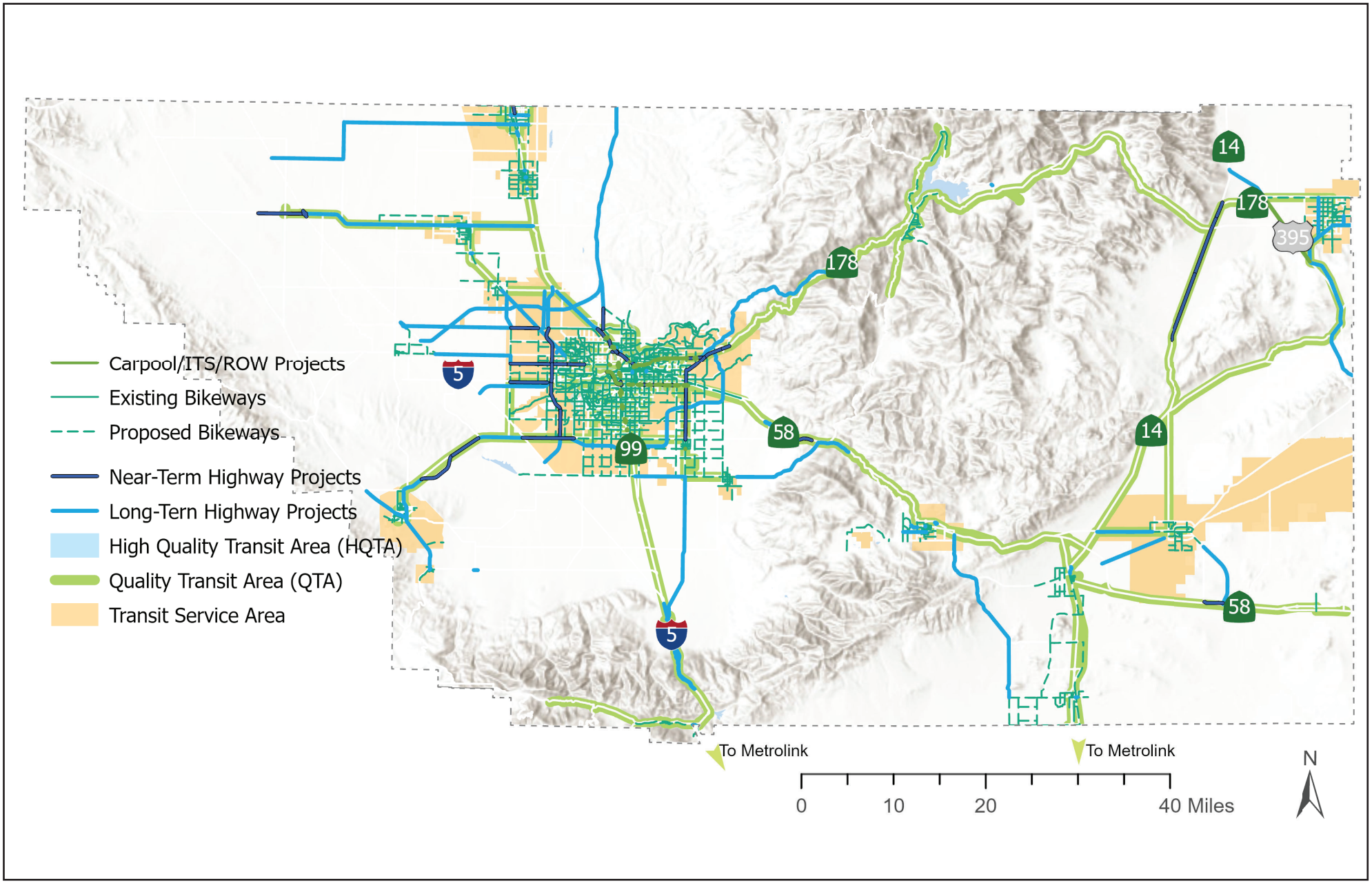
- 320 new buses in the region, including Bus Rapid Transit, Rapid Bus, and Express Bus Service
- Extension/enhancement of transit service to new and intensified centers
- Addition of up to six passenger rail stops
- Ridesharing and voluntary employer-based incentives

- Traffic flow improvements/railroad grade separations
- Park and ride lots and vanpooling

Table 3.0-5
2026 RTP Transportation Projects -- 2026 through 2049 Transit and Other

Project	Location	Scope
Vanpooling	Countywide	Vanpooling, Park & Ride Lots
Bus Service - Metro Bakersfield	Bakersfield/County	Full size zero/low emission (Z/LE) buses - 120 replacement.
Bus Service - Metro Bakersfield	Bakersfield/County	Full size Z/LE buses - Fixed Routes - 130 new buses
Bus Service - Metro Bakersfield	Bakersfield/County	Full size Z/LE Bus Rapid Transit (BRT) buses - 24 buses
Bus Service - Metro Bakersfield	Bakersfield/County	Full size Z/LE buses - Express Service - 36 new buses
Bus Service - Metro Bakersfield	Bakersfield/County	Operations and Maintenance (incl. fare box, TDA, fed.)
Bus Service	Countywide	Full size Z/LE buses - Express Service - 10 buses
Bus Service	Countywide	Midsize alternative Z/LE buses - 120 replacement buses
Bus Service	Countywide	Midsize Z/LE buses - 120 new buses
Bus Service	Countywide	Mini Z/LE van / buses) - 45 replacement buses
Bus Service	Countywide	2 Transit Maintenance Stations
Bus Service	Countywide	3 transfer stations
Bus Service	Countywide	Operations and Maintenance (incl. fare box, TDA, fed.)
Intelligent Transportation. Sys.(ITS)	Countywide	ITS related improvements / upgrades - Traffic Ops, etc.
Aviation	Countywide	Capital, Maintenance and Operational Improvements
Passenger Rail	County/Rosamond	Metrolink Extension - Lancaster to Rosamond/Mojave (Cap,+O&M)
Passenger Rail	Bakersfield	High Speed Rail (HSR) Station - Bakersfield***
Passenger Rail	County/Bakersfield/Shafter/Wasco	HSR Alignment and Facilities Fresno to Bakersfield***
Passenger Rail	County/Shafter/Wasco	HSR Heavy Maintenance Facility***
Various Locations	Countywide	Other TCMs,--Alternative fuel/zero emission infrastructure, Promotion of alt. modes, alt. commuting, etc.

Source: Kern COG, 2026 RTP/SCS

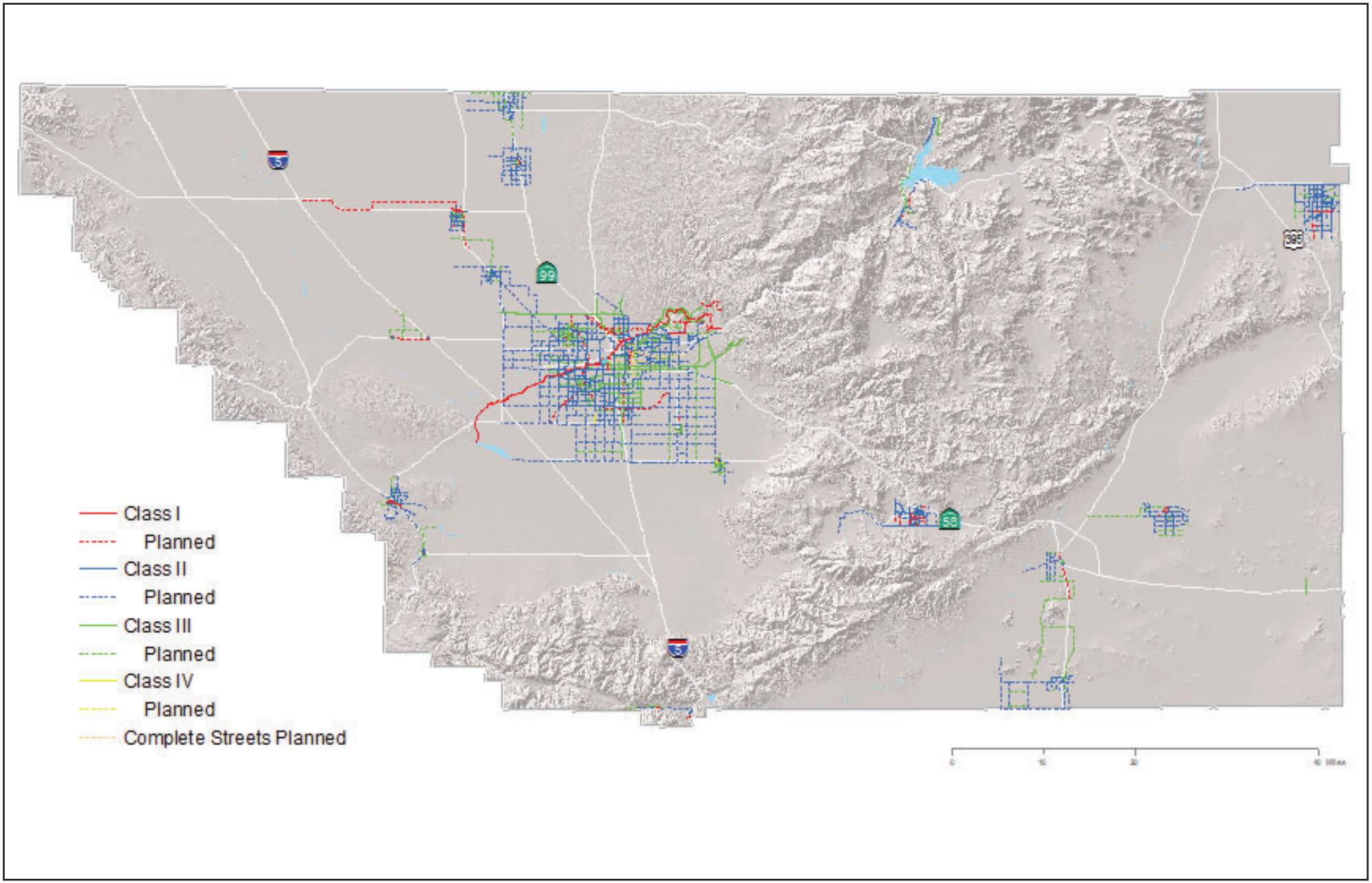


SOURCE: Kern COG, 2026

FIGURE **3.0-5**

IMPACT SCIENCES

Constrained Projects Map (2026-2049)



SOURCE: Kern COG, 2026

FIGURE **3.0-6**

RTP Bicycle Network

IMPACT SCIENCES

1170.004•04/26

Table 3.0-6
2026 RTP Transportation Projects -- Summary of Constrained Project Costs

Program Category	Totals
Transit & Other	5,175,000,000
Operational Improvements - HOV Lanes/Ramp Metering	738,000,000
Non-Motorized	767,000,000
Freight Rail	257,600,000
Major Roadway Improvements 2026-2029	772,000,000
Major Roadway Improvements 2030-2049	1,480,600,000
Grand Total	**$9,190,200,000**

Source: Kern COG 2026 RTP

Bicycles and Pedestrians

Investments that promote bicycling and walking are also an important part of the revenue-constrained transportation network. In 2018, Kern COG completed the Kern Active Transportation Plan to build on previous planning efforts, conversations with community stakeholders, and careful observations of the existing transportation network to establish recommendations that can help make Kern County a better place for people to walk and bike. The Plan encourages safer, healthier communities that provide safe and comfortable access to local parks, schools, workplaces, retail, transit, and other essential destinations. One objective of the Plan is to serve all communities, especially disadvantaged ones, by improving bicycle and pedestrian infrastructure, safety, and accessibility. For example, bicycle lanes and bicycle boulevards are recommended throughout Lamont and Weedpatch to provide better connectivity and safer local and regional bicycle travel. Regional connectivity to Arvin will be enhanced through the addition of bicycle lanes and bicycle routes on several other key corridors in southeast Metropolitan Bakersfield. Corridor improvements are also recommended in Lamont along Panama Road, Myrtle Avenue, and San Diego Street to create a stronger pedestrian network and to improve connections to schools and parks. Corridor improvements are also proposed along State Route 184, which runs through both Lamont and Weedpatch, to address a history of pedestrian-related collisions.

The Plan calls for an additional 1,245 miles of new Class I, Class II, and Class III bicycle paths, lanes, and routes in the Kern region. The Plan also calls for 242 miles of pedestrian facilities in the Kern region.

In 2012, Kern COG completed the Kern County Bicycle Master Plan and Complete Streets Recommendations to enhance bike, pedestrian, and transit use of the transportation network in the unincorporated portion of Kern County. Since the adoption of the plan, Kern County has been one of the most successful regions in California in applying for and being awarded grants for bike and pedestrian

facilities. In the 2014 RTP/SCS, Kern COG forecasted it would receive $37 million for active transportation projects by 2040. In the first seven years since the first SCS was adopted, the Kern region has funded twice the amount of active transportation projects that were anticipated over the 24-year life of that Plan. This is largely due to aggressive local government efforts to obtain new bike and pedestrian grant programs, with more than half of the funding coming from the Caltrans Active Transportation Program (ATP).

Bicycle and pedestrian measures identified in the 2018 Active Transportation Plan include:

- 41 miles of Class I bike paths
- 291 miles of Class II bike lanes
- 287 miles of Class III bike routes
- Bike parking facilities
- 16 miles of neighborhood green streets
- Pedestrian facilities as part of local transportation projects and developments
- 116 miles of Canal Bike Paths

Planned bicycle travel facility mileage by community in Kern County is provided in **Table 3.0-7, Bicycle Facility Mileage in Kern County**.

Table 3.0-7
Bicycle Facility Mileage in Kern County

	Existing	Planned (2049)
Unincorporated County	344.20	207.75
Arvin	8.84	25.90
Bakersfield	381.66	449.25
California City	14.64	32.60
Delano	32.00	37.60
Maricopa	1.00	3.90
McFarland	2.90	21.50
Ridgecrest	54.69	63.20
Shafter	14.61	53.10
Taft	21.41	33.10
Tehachapi	15.35	17.30
Wasco	14.32	56.10
Total	905.62	1,001.30

Source: Kern COG 2026

Bicycle and pedestrian measures identified in the 2026 RTP/SCS (see **Chapter 5**) include:

- Encourage member jurisdictions to implement their adopted local bicycle plans and to incorporate bicycle facilities into local transportation projects.
- Continue to seek funding for bicycle projects from local, state, and federal sources.
- Continue to seek funding to maintain existing bikeways.
- Promote the purchase and construction of bicycle racks and lockers for Kern County multimodal stations.
- Promote the inclusion of bike tie-downs and racks on commuter trains and buses.
- Fund updated Bicycle Facilities Plans for the incorporated cities.

Highway/Road Facilities and Complete Streets

The Complete Streets Act of 2008 requires local jurisdictions in California to plan for the needs of all transportation system users with every major revision to general plan local circulation elements. Highways and roads can be designed to optimize pedestrian, bike, and transit usage. The complete streets approach affords policymakers, planners, and engineers with the opportunity to carefully evaluate and accommodate the needs of motorists, pedestrians, cyclists, transit vehicles and transit users, the young and old, and the able-bodied and physically challenged through the entire project development process. This ensures that the needs of all users of the public right-of-way are properly accommodated based on informed decisions about existing and future demand and that proper accommodations are designed into the project from the outset.

Highway/road facilities and complete streets measures identified in the 2026 RTP/SCS (see **Chapter 5**) include:

- As roads are maintained, bikeways should be implemented and upgraded per local development standards.
- Apply for funding to implement bike and pedestrian projects in the active transportation plan.

Transportation Demand Management Measures

TDM measures are important in helping to improve the efficiency of the region's regional transportation system. These measures help reduce or eliminate vehicle trips during peak periods of demand. They typically offer programs and incentives to encourage the use of modes of transportation other than driving alone or to encourage people to shift their trips to times when demand on the transportation system is low.

Examples of current TDM measures are employer-sponsored transportation benefits, regional transit and vanpool subsidies, and carpool and biking incentives.

TDM measures identified in the 2026 RTP/SCS include:

- Employer-sponsored transportation benefits
- Regional transit and vanpool subsidies
- Carpool, vanpool, and biking incentives
- Park-and-ride facilities
- Flextime and telecommuting programs
- Intelligent transportation system (ITS) technologies to support multimodal travel

Transportation System Management Measures

TSM measures also help to maximize the efficiency of existing and future transportation facilities. A combination of programs, including signal and ramp metering coordination and optimization, improved performance monitoring, and advanced vehicle and roadside communication platforms will increase the ability of operators to monitor the performance of the transportation system, manage the system better, and improve efficiency.

TSM measures identified in the 2026 RTP/SCS (see **Chapter 5**) include:

- Carpool facilities where appropriate
- Traffic signalization and synchronization
- Ramp metering where appropriate
- Truck auxiliary lanes on major inclines
- Railroad grade separations
- Advanced vehicle and roadside communication systems

Pricing Measures

Pricing assumptions are also used to reduce the demand on the Kern region's transportation system. On major freeway and highway facilities, HOV lanes, bus lanes, and toll lanes can be used to fund new capacity for non-single-occupant vehicle traffic. In other California regions, odometer-based tolling (i.e., a passenger vehicle travel fee) is also being considered to fund and maintain infrastructure that support goods movement activity. Variable parking cost can also be used as a strategy to reduce congestion during peak periods. The rising vehicle operating costs in the Kern region can act as a TSM measure.

Pricing measures identified in the 2026 RTP/SCS (see **Chapter 5**) include:

- Assume vehicle operating costs by 2035 consistent with the San Joaquin Valley Transportation Planning Agencies validated methodology used by the seven COGs to the north and approved by CARB in the 2022 SCS. The methodology includes region-specific fuel prices, effective passenger vehicle fuel efficiency, which are used to calculate the fuel-related automobile operating costs, and also includes non-fuel related costs (tires, insurance, etc.)
- Continue timed parking and parking pricing in downtown Bakersfield parking structures.
- Congestion pricing in North L.A. County implemented by FasTrak and subscribed to by Kern residents that use these variable toll lanes.

3.5.9 Action Elements

The Constrained Program of Projects (**Table 3.0-8**) includes projects that move the region toward a financially constrained and balanced system. Constrained projects have undergone air quality conformity analyses to ensure that they contribute to the Kern region's compliance with state and federal air quality rules. The Unconstrained Program of Projects is not included in this list but can be found in the RTP/SCS as these projects represent alternatives that could be moved to the constrained program if support for an individual project remains strong and if project funding is identified.

Status as an unconstrained project does not imply that the project is not needed; rather, it simply cannot be accomplished or funded given the fiscal constraints facing Kern County. Kern COG is vigilant in its search for funding to support these projects.

No unconstrained projects are included in the air quality conformity analysis. In the future, as the funding picture changes and community values and priorities for transportation projects are honed, unconstrained projects may be moved to the constrained program. Should this occur, the RTP would be amended and a new assessment of the plan's conformity with state and federal air quality rules and standards would be made.

The Strategic Investments Chapter of the RTP/SCS is divided into the following action elements:

- Freight Movement Action Element
- Public Transportation/Shared Mobility Action Element
- Active Transportation Action Element
- Transportation Air Emissions Reduction Action Element

- Intelligent Transportation Systems Action Element
- Congestion Management Program Action Element
- Regional Streets and Highways Action Element
- Aviation Action Element
- Safety/Security Action Element
- Land Use Action Element

In the Constrained Program of Projects, major highway improvements are divided into five chronological groupings to facilitate estimations of project completion. Highway improvements that cannot be constructed within the financial constraint of any one group may be repeated in later groups. If a project is not fully funded within the five-year time frame, it would require phasing over a longer time frame. The entire corridor, however, would be environmentally assessed during the preliminary engineering phase.

Freight Action Element

Efficient freight transportation is critical to the economic health of the Kern region. As one of the prime agricultural regions in the nation, the intra-county road linkage of goods to processing plants, and the intercounty linkage of goods to other regions, manufacturers, and shipping ports is essential tradeable sectors and the associated economic benefits. Kern, and two other counties just to the north in the San Joaquin Valley have regularly ranked as the top three agricultural producing counties in the nation, and Kern is the "Energy Capitol of California" with 74 percent of the State's oil production and 60 percent of its renewable energy. These industries rely heavily on bulk goods movement by truck, rail and pipeline.

The San Joaquin Valley is also becoming a prominent location for regional distribution centers of consumer products, providing service to coastal population centers as well as its own growing population. In addition, the manufacturing and employment base of the valley is increasing. All these factors contribute to increasing demand for freight transportation by rail, truck, pipeline and air.

Proposed Actions

Near-Term, 2026–2030

- Convene an annual freight movement stakeholders group for coordinating preservation and expansion efforts such as: Coordinate preservation and expansion efforts; Encourage communication between short-line rail operators, shippers, and economic development agencies; Explore options for potential uses of the southern portion of Arvin Subdivision as identified in the Kern County Rail Study Phase 2; Explore the potential to retain freight rail service on the southern portion of the Arvin Subdivision.

- Coordinate with SJVR, Tejon Ranch Company, and other potential area shippers/users, area economic development agencies, and the Central California Rail Authority; explore rail intermodal, transfer facility, and alternative transfer options for the region.

- Maintain liaison with Southern California Association of Governments and all San Joaquin Valley Councils of Government for efficient coordination of freight movement between regions and counties.

- Construct truck climbing lanes on the west grade of SR 58 over the Tehachapi Mountains to improve safety near the Bakersfield National Cemetery.

- Develop the rural trucking network, avoiding populated areas to minimize impacts to both disadvantaged and all communities.

- Program safety-related infrastructure improvements such as passing lanes, roundabouts, and widening of high-volume truck routes such as Seventh Standard Road, SR 46, SR 43 in response to growing freight movement activities in the area.

- Continue development of the BNSF & UP intermodal freight hubs in/near Shafter, as well as the BFL International Airport freight hub, into a Trade Port District with a network spoke system of connecting truck access routes. Participate in state planning for a system of inland ports.

- Continue development of other intermodal rail freight shipping facilities throughout the County, including last-mile truck access infrastructure.

- Research Targeted Logistics Transportation Fees such as: 1) Logistic Mitigation Fee – Prepare a Nexus Study that would determine appropriate infrastructure needed and cost to mitigate future warehouse/manufacturing/processing facilities; 2) Mobility Fee – Also known as a VMT fee can be applied to autonomous/clean tech vehicles to assist with their fair share of the cost of maintenance of the transportation facilities they use.

- Explore Development of a Program to Shift Goods-movement from Road to Rail through: Rail Usage Tax Credit – The Mitigation/Mobility Fees could be offered a tax credit if a commitment is secured to ship by rail; Incentive Fund - Create an incentive fund to subsidize the rail freight rate to make it competitive with trucking rates to encourage mode shift. The incentive could be designed to provide support to the railroads to offer competitive rates or an incentive could be paid directly to the company based upon the delta between the rail rate and the truck rate. This could be for a short period of time in recognition of the initial risk for employing a new mode in a company's logistics system.

- Develop Clean Trucking Technology on Highways: Provide assistance applying for numerous existing programs; Create a loan program to purchase clean tech; Revision to building codes by requiring electric charging stations and new warehouse/manufacturing facilities and incentives for electric charging.

- Explore Development of a Next-Generation Industrial Trade Port District: Provide for phased incremental testing of emerging goods movement technology such as clean tech, autonomous trucks, and warehouses/manufacturing & processing, mining, and agriculture to foster higher-paying jobs in the region.

- Explore the development of a containerized intermodal rail service in East Kern that provides access to the ports of LA by connecting with the daily Rio Tinto bulk train to the port of LA.

Long Term, 2030–2049

- Expand the rural "greenpass" truck route network such as expanding Wheeler Ridge Road to four lanes and/or create a parallel expressway on a new NW/SE diagonal alignment from roughly SR 223/Rockpile Rd to Wheeler Ridge Rd/David Rd to improve safety and provide a gap-closure tying I-5 to SR 58 south of Arvin and delay need for the planned South Beltway and making SR 223 safer in downtown Arvin.

- Complete construction of the SR 58 freeway corridor from I-5 to U.S. 395, upgrading to controlled access freeway standards.

- Expand rail service to existing distribution centers throughout the County.

Public Transportation Action Element

Within Kern County, existing public transportation services are anchored by connections to Amtrak and Metrolink passenger rail service, with feeder service connections to public transit and other private carriers such as Greyhound. Transit service in the region uses a modified pulse schedule that is timed to connect to passenger rail service in Bakersfield and Lancaster. Local and regional public transit is available within and between sixteen Kern County communities and has been experiencing some challenges. From 2019 to 2024, public transit services in Kern County saw a 47 percent decrease in passengers from 7.9 million to 4 million. Since the initial decline in riders due to COVID in 2020, Kern has slowly increased 3 percent to 4 million passengers.

Proposed Actions

Near Term 2026–2030

- Promote vanpools by creating community vanpool programs that target workers at major job centers including farmworker vanpools including employer-sponsored shuttles and rural vanpool programs;
- Create partnerships with ridesharing and taxi companies with wheelchair accessible vehicles including introducing a pilot program involving subsidized/discounted rideshare or taxi trips to/from key transit hubs to close First and Last Mile gaps, including consideration of partnerships between healthcare providers, ridesharing companies, and taxi companies with wheelchair accessible vehicles;
- Introduce/expand electric vehicle carshare program including service anchored at low-income populations;
- Introduce a volunteer driver program, including a volunteer driver program to serve ambulatory riders with disabilities;
- Consider partnering with door-through-door service providers;
- Create an inter-network transfer subsidy program with regional transit providers;
- Create a commute shuttle partnership with colleges and other higher-education or technical campuses for a campus;
- GET should decrease emphasis on timed connections at transit centers by providing greater frequency;
- Promote use of new transit centers at New GET transit centers at CSU Bakersfield (begin construction in 2020); and Bakersfield College;
- Promote faster crosstown trips through; new express routes; new "Rapid" routes; or direct routes;
- Continue fine tuning KT scheduling; stop placement; and route reconfiguration;
- Rural and outlying transit providers should consider supplementing or replacing low volume fixed routes with shared mobility options such as Miocar;
- GET should consider supplementing or replacing low volume/low frequency routes with their new On-Demand shared mobility service;

- Continue discussions with the Southern California Regional Rail Authority regarding the extension of Metrolink from Lancaster to Rosamond; Initiate discussions with the State regarding replacement of Amtrak San Joaquin service between Bakersfield and Wasco with a local commuter rail service;
- Monitor advancement of the California High-Speed Rail (HSR) project;
- Provide education on Federally authorized pre-tax deductions for transit passes, vanpools, and bicycle commuting costs;
- Promote subsidized transit passes for employees;
- Promote "parking cash-out" program in which employees would be paid to avoid use of on-site parking; and
- Promote a "guaranteed ride home" program in which employees who took transit or other alternative modes to work would be offered a limited number of fully-subsidized taxi rides home after hours.

Long Term, 2030-2049

- Promote HSR funding of improvements to nearby transit stops/centers/mobility hubs;
- Continue phased improvements to the GET Bus Rapid Transit and express routes;
- Improve GET Crosstown service connecting one side of Bakersfield to the other;
- Improve GET Circulator services within neighborhoods or around outlying areas of Bakersfield;
- Continuation of GET Express routes and connecting outlying strategic employment centers;
- Truck climbing lane along eastbound SR 58 to provide safer inter-city transit service;
- Continue ramp metering/diamond lane program at urban freeway ramps;
- Research peak period only Business Access Transit (BAT) or High Occupancy Vehicle (HOV) lanes on congested arterials;
- Consider converting BRT corridors to light rail transit when ridership warrants;
- Consider additional peak period HOV/transit lanes on freeways;

- Continue pursuing an extension of Metrolink from Lancaster to Rosamond and commuter rail service in to replace Amtrak in the SJV portion of Kern; and

- As HSR proceeds to construction, identify preferred corridor to connect Bakersfield and Delano with commuter rail/HSR feeder service; Identify potential funding for commuter rail operations; Work with local transit providers to connect riders to commuter rail/HSR; Reassess feasibility of commuter rail in various corridors.

Active Transportation Action Element

Kern County is especially well suited for active transportation such as biking and walking. The climate and terrain of the region is favorable for active transportation, with many clear, dry days and moderate temperatures throughout the spring and fall. For short trips, biking and walking can serve as an alternative to the automobile. Because these modes are non-polluting and energy efficient, it is an element in the region's multimodal transportation system that leads to a more efficient transportation network while promoting public health.

Proposed Actions

Near Term, 2026–2030

- Encourage COG member jurisdictions to implement their adopted local bicycle plans and to incorporate bicycle facilities into local transportation projects;

- Continue to seek funding for bicycle and pedestrian projects from local, state, and federal sources;

- Continue to seek funding to maintain existing bikeway and pedestrian facilities;

- Promote the purchase and construction of bicycle racks and lockers for Kern County multimodal stations;

- Promote the inclusion of bike tie-downs and racks on commuter trains and buses;

- Fund updated bicycle plans for incorporated cities;

- Fund a Pedestrian Facilities Plan for the County of Kern as well as incorporated cities;

- Investigate the connectivity between Off-Road Vehicles and Non-motorized transportation uses, especially in areas with high concentrations of Off-Road Vehicle use such as the Indian Wells Valley and the California City area; and

- Explore the possibility of the establishment of "Cabana" (covered) parking and information kiosks at Off-Road Vehicle trail heads, especially in the Indian Wells Valley and the California City area.

Long Term, 2030–2049

- Periodically update the Kern Regional Active Transportation Plan;
- Continue to seek funding for bicycle and pedestrian projects from local, state, and federal sources;
- Continue to seek funding to help maintain existing bikeway and pedestrian facilities;
- Promote development of revitalized, walkable/bikeable neighborhoods with easy access to transit; paving/controlling dust from streets and shoulders; and improve street intersections that facilitate bicycle travel; and
- Investigate the connectivity between Off-Road Vehicles and Non-motorized transportation uses, especially in areas with high concentrations of Off-Road Vehicle use, such as the Indian Wells Valley and the California City area.

Transportation Air Emissions Action Element

The Transportation sector includes the movement of people and goods by cars, trucks, trains, ships, airplanes, and other vehicles. The majority of greenhouse gas emissions from transportation are carbon dioxide (CO_2) emissions resulting from the combustion of petroleum-based products, like gasoline, in internal combustion engines. The largest sources of transportation-related greenhouse gas emissions include passenger cars and light-duty trucks, including sport utility vehicles, pickup trucks, and minivans. These sources account for over half of the emissions from the transportation sector, which makes of 40 percent of state GHG emissions. The remainder of greenhouse gas emissions comes from other modes of transportation, including freight trucks, commercial aircraft, ships, boats, and trains, as well as pipelines and lubricants. California's state laws and regulations (such as AB 32) have set goals for reducing California's GHG air emissions. These efforts aim to reduce GHG emissions to 1990 levels by 2020—a reduction of approximately 30 percent.

Over the past two decades, efforts have eliminated harmful exposure to Carbon Monoxide and the 1-hour ozone standard, and have led to the reduction of harmful pollutants such as Ozone, Particulate Matter, nitrogen oxides, sulfur dioxide, lead, and air toxics. To continue along a successful path for reducing these harmful pollutants, new and innovative strategies must be implemented in the Kern region to further achieve healthy air quality and meet national and state criteria pollutant standards.

Transportation Control Measures

Transportation Control Measures (TCMs) have received a high level of attention since the passage of the state and federal Clean Air Acts. As a result, air quality planning areas for the entire San Joaquin Valley, Mojave Desert, and Indian Wells Valley have been designated as nonattainment for harmful pollutants such as ozone and PM2.5 and PM10. According to the state and federal Clean Air Acts, the worst nonattainment areas must ensure that "all feasible measures" are implemented to reduce harmful air emissions. Goals identified in the 2026 RTP, including livability and sustainability, focus on carrying out these requirements to achieve standards for healthy air quality. The most typical and successful TCM strategies include improved public transit, traffic flow improvements, and high occupancy vehicle lanes, shared ride services, pedestrian/bicycle facilities, and flexible work schedules. For a complete discussion of TCMs strategies, see the most recent adopted Federal Air Quality Conformity Analysis document.[12] The 2026 RTP includes a combined public review process for the Conformity Analysis and is adopted by joint resolution that includes the conformity document.

Proposed Actions

Near Term, 2026 – 2030

- Maintain air quality coordination Memorandum of Understanding (MOU) with the San Joaquin Valley Metropolitan Planning Organizations, San Joaquin Valley Air Pollution Control District, Eastern Kern Air Pollution Control District, and Caltrans Districts 6 and 10.
- Improve public transit by lowering transit fares and subsidies;
- Increase alternative-fuel fleets – work closely with private and public entities to support the conversion of alternative-fuel vehicles;
- Encourage ridesharing and voluntary employer-based incentives – programs such as Commute Kern's Guaranteed Ride Home program and SJVAPCD's Rule 9410 – eTRIP both promote ridesharing that will immensely reduce vehicle miles traveled, ultimately reducing harmful air emissions;
- Traffic flow improvements/railroad grade separations;
- Bicycle and pedestrian travel – construct class I, II, and III bicycle paths, accompanied with striping and signage;

12 Kern COG, Federal Air Quality Conformity Analysis, available at: https://www.kerncog.org/conformity/.

- Promote development of revitalized, walkable/bikeable neighborhoods with easy access to transit; Paving/controlling dust from streets and shoulders and improve street intersections that facilitate bicycle travel;

- PM10 efficient street sweeping – SJVAPCD Rule 8061: Paved and Unpaved Roads implements the usage of specific street sweepers that target the reduction of PM10 emissions within urbanized street networks;

- Identify funding options for Congestion Mitigation Air Quality Improvement Program (CMAQ), AB 2766 Motor Vehicle Emissions Reductions Program, and other sources that fund air emission reduction;

- Identify all Reasonably Available Control Measures (RACM) for ozone and all Best Available Control Measures (BACM) for PM10 by Kern COG's member agencies;

- Special presentations and workshops for member agencies on transportation-related control measure strategies for air pollution emissions as new standards, technology, and funding opportunities evolve; and

- Media campaigns promoting the various air emission reduction measures listed above.

Long Term, 2030 – 2049

- High Occupancy Vehicle (HOV) lane additions as well as ramps and metering improvements: Centennial Corridor and Westside Parkway provide room to accommodate HOV;

- Add "missing links" (streets) to the roadway network that reduce out-of-direction travel: Centennial Connector will provide a major free-flow traffic connector that will improve air quality by reducing stop-and-go truck travel on local arterials. The Hageman Flyover Project will provide another east/west connection over SR 99 to downtown Bakersfield's central business district; the Mohawk Street extension provides an extension from Rosedale Highway south that connects to Truxtun Avenue, accessing downtown Bakersfield;

- Carpool programs – By 2049 a fleet of over 500 vans will be utilized and maintained for vanpooling; and

- Flextime programs – Offsets the traditional work hours of 8 a.m. to 5 p.m., ultimately reducing traffic congestion during peak periods.

- Park and Ride Facilities – provide 1,500 vehicle spaces;

- Public Electric Vehicle Charging Infrastructure – provide 4,000 vehicle spaces.

Intelligent Transportation System Action Element

Intelligent Transportation Systems (ITS) apply advanced information processing, communications, vehicle sensing, and traffic control technologies to the surface transportation system. The objective of ITS is to promote more efficient use of the existing highway and transportation network, increase safety and mobility, and decrease the environmental impacts of congestion. The Federal Highway Administration sponsored the preparation of Early Deployment Plans (EDPs) to identify ITS application opportunities.

Proposed Actions

Short- and Long-Term Actions, 2026–2049

- Continue stakeholder outreach;
- Demonstrate the benefits to member agencies of the Regional Transportation Planning Agencies and Metropolitan Planning Organizations;
- Mainstream ITS into program and project prioritization;
- Mainstream and update regional architecture; and
- Form a public/private partnership task force (on a project-by-project basis).

Congestion Management Program Action Element

As with the previous federal surface transportation acts, under the Fixing America's Surface Transportation Act, all urbanized areas larger than 200,000 in population are required to have a Congestion Management Program (CMP), System, or Process. Kern COG has chosen to continue referring to its congestion management activities as a program. The federal Congestion Management Process requirements are similar to the optional California requirements; in fact, the CMP was largely modeled after the California program. Both processes are structured around the identification and monitoring of a system, the establishment of performance standards, and the identification and correction of congestion. The CMP was developed through an open public process in 1991 under state guidelines. Since 1998, the CMP has been included as a subsection of the RTP. In 2005, the CMP became federally mandated.

Regional Streets and Highways Action Element

A system of safe and efficient highways, streets, and roads is essential to the movement of people, vehicles, and goods in and through Kern County. Public vehicles, private automobiles, and commercial shippers all share the same transportation network. Providing a system of state and federal highways and regionally significant arterials that can meet this variety of needs is critical to the plan's goal of enhancing the quality of life for Kern County's residents.

In 2012, Kern COG adopted new SB 375-enhanced project selection criteria, which will be used for all future calls for projects. The new project selection criteria include livable community strategies into the prioritization elements for projects of regional significance. This is an important step for the region in that it helps to implement Chapter 4 Sustainable Communities Strategy by allowing projects that incorporate sustainable strategies to score higher for funding consideration. Additionally, complete streets elements were incorporated into the project selection criteria and the Congestion Mitigation and Air Quality Improvement (CMAQ) Program to prioritize new projects.

Proposed Action

Near Term, 2026–2030

Work with Caltrans, COG member agencies, and other interested parties to prepare environmental studies, right-of-way acquisitions, and design engineering work to:

- State Route 58 – initiate pre-construction phase for truck-climbing lanes (Safety);
- Provide input to neighboring regions' transportation studies and projects for corridors that have significance to the Kern region. In particular:
- Participate in San Bernardino County's study for the US Highway 395 corridor, and SR 58.
- Participate in implementing the SR 99 Business Plan with the 7 other counties in the San Joaquin Valley.
- Participate in implementing the SR 46 improvements with San Luis Obispo County. (Safety)
- Participate in regular meetings with Southern California Association of Governments to coordinate projects along I-5, SR 14 and SR 58 corridors;
- Maintain Regional Traffic Models to aid in traffic and air quality analyses;

- Prepare a systems-level planning analysis of various transportation system alternatives using multimodal performance measures;
- Pursue ground access improvements for Meadows Field;
- Local Governments consider pursuing alternative funding sources such as regional and individual TIFs where justified as a necessary means to address transportation needs; and
- Implement the capital improvements for highways, regional roads, and interchanges for this time period.

Long Term, 2030–2049

- Maintain existing roadway infrastructure;
- Implement as appropriate and feasible the recommendations of completed transportation planning studies;
- Pursue and implement the recommendations from earlier transportation planning studies;
- Implement capital improvements for highways, regional roads, and interchanges for this time period; and
- Review and revise countywide transportation impact fees.

Aviation Action Element

Kern County's airports address a variety of local and regional services. The aviation system connects the traveling public and freight and cargo movers with California's major metropolitan airports. Additionally, Kern's airports serve the US military directly or in an auxiliary fashion. Many of the airports also support local farmers, police, and medical services, and provide recreational opportunities. Together, the airports provide a viable mobility option for the County's residents and businesses.

Proposed Actions

Near Term, 2026–2030

- Work with Meadows Field and Inyokern Airport to obtain funding from the state and federal governments for their respective development programs;

- Work with local and regional transit providers to increase alternative mode ground access options at Meadows Field;
- Assist Meadows Field with planning related to high-speed rail connections;
- Work with public airports to increase their access to state and federal funds; and
- Work with the JLUS committee to implement planning activities listed in the JLUS for R-2508 airspace (China Lake Naval Air Weapons Station and Edwards Air Force Base).

Long Term, 2030–2049

- Continue to work with the public access airports to increase their access to state and federal funds;
- Update the Regional Transportation Plan to be consistent with the California Aviation System Plan, and regional aviation systems plans, as necessary;
- Implement the Action Plan of the Central California Aviation System Plan;
- Participate in master plan updates for various Kern County airports; and
- Implement planning actions and strategies listed in the JLUS for R-2508.

Safety and Security Action Element

Federal law specifies that MPOs will develop a metropolitan planning process that provides for consideration of projects and strategies that will increase the security of the transportation system for motorized and non-motorized users. Kern COG is committed to promoting increased safety, and the performance measures of the RTP include safety as a critical factor.

Policies and Recommendations

Kern COG's Transportation Security Plan 2026–2049 provides an action plan and constrained policies detailing nine measures that the agency will undertake in regional transportation security planning.

1. Kern COG should help ensure the rapid repair of transportation infrastructure critical in the event of an emergency.
    a. Kern COG, in cooperation with the state agencies, should identify critical infrastructure needs necessary for emergency responders to enter the region, the evacuation of affected facilities, and the restoration of utilities.

b. Kern COG, in cooperation with the California Transportation Commission (CTC), Caltrans, and the federal government, should develop a transportation recovery plan for the emergency awarding of contracts to rapidly and efficiently repair damaged infrastructure.

2. Kern COG should continue to deploy and promote the use of intelligent transportation system technologies that enhance transportation security.

    a. Kern COG should work to expand the use of ITS to improve surveillance, monitoring, and distress notification systems and to assist in the rapid evacuation of disaster areas.

    b. Kern COG should incorporate security into the regional ITS architecture.

    c. Transit operators should incorporate ITS technologies as part of their security and emergency preparedness and share that information with other operators.

    d. Aside from developing ITS technologies for advanced customer information, transit agencies should work intensely with ethnic, local, and disenfranchised communities through public information/outreach sessions, ensuring public participation is used to its fullest. In case of evacuation, these transit-dependent persons may need additional assistance to evacuate to safety.

3. Kern COG should establish transportation infrastructure practices that promote and enhance security.

    a. Kern COG should work with transportation operators to plan and coordinate transportation projects, as appropriate, with the Department of Homeland Security grant projects to enhance the regional transit security strategy (RTSS).

    b. Kern COG should establish transportation infrastructure practices that identify and prioritize the design, retrofit, hardening, and stabilization of critical transportation infrastructure to prevent failure in order to minimize loss of life and property, injuries, and avoid long-term economic disruption.

4. Kern COG should establish a forum where policymakers can be educated and regional policy can be developed.

    a. Kern COG should work with local officials to develop regional consensus on regional transportation safety, security, and safety/security policies.

5. Kern COG will help enhance the region's ability to deter and respond to acts of terrorism and human-caused or natural disasters through regionally cooperative and collaborative strategies.

    a. Kern COG should work with local officials to develop regional consensus on regional transportation safety, security, and safety/security policies.

    b. Kern COG should encourage all Kern COG elected officials to be educated in the National Incident Management System (NIMS).

    c. Kern COG should work with partner agencies and federal, state, and local jurisdictions to improve communications and interoperability and to find opportunities to leverage and effectively use transportation and public safety/security resources in support of this effort.

6. Kern COG should enhance emergency preparedness among public agencies and with the public at large.

    a. Kern COG should work with local officials to develop regional consensus on regional transportation safety, security, and safety/security policies.

    b. Kern COG should work to improve the effectiveness of regional plans by maximizing the sharing and coordination of resources that would allow for proper response by public agencies. Kern COG should encourage and provide a forum for local jurisdictions to develop mutual aid agreements for essential government services during any incident recovery.

7. Kern COG will help to enhance the capabilities of local and regional organizations, including first responders, through provision and sharing of information.

    a. Kern COG should work with local agencies to collect regional GeoData in a common format and provide access to the GeoData for emergency planning, training, and response.

    b. Kern COG should develop and establish a regional information sharing strategy, linking Kern COG and its member agencies for ongoing sharing and provision of information pertaining to the region's transportation system and other critical infrastructure.

8. Kern COG should provide the means for collaborating in planning, communication, and information sharing before, during, or after a regional emergency.

a. Kern COG should develop and incorporate strategies and actions pertaining to response and prevention of security incidents and events as part of the ongoing regional planning activities.

b. Kern COG should offer a regional repository of GIS data for use by local agencies in emergency planning and response, in a standardized format.

Land Use Action Element

Land use is one of the most important factors in effective transportation planning to preserve the region's economic, environmental, and equitable sustainability. While Kern COG does not have jurisdiction over land use planning, the agency promotes and encourages dialogue among stakeholders involved in the land use decision-making process, through city and County General Plan actions, the environmental process, and the 2026 RTP outreach process.

Global Gateways – Land Use Actions

Near Term, 2026–2030

- Facilitate the Shafter Rail Terminal and the Wonderful Industrial Park by programming infrastructure to service rail and truck traffic that may be generated by the facility;
- Use the CEQA review process to inform stakeholders and decision makers on the impacts of sensitive land use developments near vital transportation infrastructure necessary to handle increasing air traffic and international cargo, as well as increasing port activity;
- Work with the Kern County Department of Airports and local planning departments to preserve existing airports from encroachment by sensitive land uses to strategic global gateways;
- Implement the Directions to 2050 Growth principles vision for economic vitality by planning and programming infrastructure to provide connectivity to air traffic and international cargo facilities;
- Coordinate with the County of Kern, City of Bakersfield, and City of Shafter on the proposed expansion of Meadows Field in the County of Kern Airport Master Plan; and
- Coordinate with the Southern California Association of Governments, the Metropolitan Transportation Commission, and the ports to minimize impacts of port activity through Kern County.

Long Term, 2030–2049

- Monitor progress toward implementing regional principles developed by the Directions to 2050 visioning process consistent with local general plans;
- Coordinate with the Kern County Department of Airports, municipalities, and airport districts to establish intermodal connectivity for rail, trucking, transit, and passenger vehicles; and
- Work with Kern Economic Development Corporation to promote logistics and aerospace job opportunities in Kern County.

Proposed Rail/Transit-Related Land Use Actions

Near Term, 2026–2030

- Acknowledge city and county adopted General Plans and amendments and the related CEQA review process to inform stakeholders and decision makers on the impacts of sensitive land use developments near vital transportation infrastructure necessary to handle increasing local, intercity, and interregional transit use;
- Work with GET, KT, other local transit providers, and local land use planners to preserve existing and future transit opportunities from the encroachment of low-density land uses around transit-oriented development centers;
- Implement the long-range 2022 RTP in partnership with member agencies to preserve near- and long-term transportation infrastructure, thus promoting the gradual intensification of transit use only when market demand for compact land uses increases;
- Encourage the adoption of General Plan circulation elements that address transit, bike, and pedestrian modes. Consider specific plan lines and form-based codes where appropriate to implement transit improvements along designated transit corridors that connect transit-oriented development centers;
- Expand transportation choices and transit usage by providing market-driven housing choices that include more compact and mixed land uses within walking distance to transit centers;
- Identify and space transit-oriented, village, town, and suburban/community centers a minimum of 1 to 4 miles apart or as determined in adopted city and county General Plans and subsequent amendments;
- Provide convenient and safe walking and bike paths to a fixed transit hub at each development center;

- Allow reduced parking requirements near transit centers that have alternative modes of access such as walking and bike paths, circulator buses, etc.;

- Coordinate with GET on implementation of traffic signal green-light extension technology as a first step toward implementation of Bus Rapid Transit and peak period bus/carpool lanes on arterial streets; and

- Coordinate with GET, KT, and the Kern County Department of Airports to improve intermodal connectivity between transit systems and Meadows Field.

Long Term, 2030–2049

- Monitor progress toward implementing principles developed by the Directions to 2050 outreach process;

- Promote more compact and mixed-use centers along major transit corridors where appropriate to support more intense transit options such as Bus Rapid Transit and light rail as areas urbanize;

- Land uses should be mixed both horizontally and vertically where appropriate. Vertical mixed use, with ground-floor retail in developed areas and activity centers as identified through land use plans, can increase the vitality of the street and provide people with the choice of walking to desired services;

- More important for Bakersfield, mixing uses horizontally can prevent desolate, single-use areas and encourage increased pedestrian activity; scale of use and distance between uses are important to successful horizontal mixed-use development;

- Support and enhance transit priority and strategic employment place types. These areas have a strong impact on transportation patterns as the major destinations. They are generally characterized by their regionally important commercial, employment, and service uses. To make these places more transit-supportive, they should be enhanced by land use decisions that locate new housing and appropriately scaled retail and employment uses to diversify the mix, creating an environment that maximizes transportation choice;

- The cities and the county should be encouraged to provide land use intensities where appropriate at levels that will promote use of transit and support pedestrian and bicycle activity. A general threshold for transit-supportive residential uses is 10 to 15 units per acre within ½ mile of a high-frequency transit stop (15 min. headways or less). This density can be lower, however, if the urban environment supports easy pedestrian/bike access to transit. Nonresidential uses with a floor area ratio (FAR) of 0.5 provide a baseline that can support viable transit ridership levels. Local land use plans should provide

flexibility to maximize the intensity of development in transit priority place types to be more responsive to changing market conditions; and

- The cities and the county should be encouraged to provide parking requirements (and parking provisions) compatible with compact, pedestrian, and transit-supportive design and development. Requirements should account for mixed uses, transit access, and the linking of trips that reduce reliance on automobiles and total parking demand.

Proposed Highway/Road-Related Land Use Actions

Near Term, 2026–2030

- Continue to use the CEQA review process to inform stakeholders and decision-makers on the impacts of sensitive land use developments near vital transportation infrastructure;
- Work with member agencies to preserve existing and future road and highway rights-of-way from the encroachment of sensitive land uses;
- Implement the long-range 2026 RTP in partnership with member agencies to preserve near- and long-term transportation infrastructure that promotes the preservation of goods movement routes and facilities;
- Encourage the adoption of general plan circulation elements with specific plan lines as appropriate to preserve goods movement corridors and high frequency transit corridors; and
- Provide for all types of truck-related goods movement along truck-route corridors.

Long Term, 2030–2049

- Monitor progress toward implementing regional principles developed by the Directions to 2050 outreach process;
- Promote land use along freight corridors that are compatible with goods movement traffic;
- The transportation and circulation framework should define compact districts and corridors that are characterized by high connectivity of streets to not overly concentrate traffic on major streets and to provide more direct routes for pedestrians, good access to transit, and streets that are designed for pedestrians and bicycles, as well as for vehicles;

- New residential developments should include streets that provide connectivity. Cul-de-sacs and walls around communities are especially challenging for providing effective pedestrian and bike access to public transit;

- Transit improvement projects should be targeted at areas with transit-supportive land uses (existing and planned) in and around key destinations and projects that can increase pedestrian activity;

- Streets should be designed to support use by multiple modes, including transit, bicycles, and pedestrians, through proper scaling and provision of lighting, landscaping, and amenities. Amenities must be designed to provide comfortable walking environments;

- Buildings should be human scaled, with a positive relationship to the street (e.g., entries and windows facing onto public streets, and appropriate articulation and signage);

- The impact of parking on the public realm should be minimized by siting parking lots behind buildings or screening elements (walls or landscaping). Buildings should be close to the road so parking can be located on the side or in the rear; and

- Relax roadway level of service (LOS) standards in high-priority transit corridors. In high-demand, high-capacity transit corridors—specifically, the Lines 1 and 2 Rapid alignments identified in the Short-Term Plan, where service is proposed to be upgraded to bus rapid transit—it may be desirable, even necessary, to reduce minimum standards for intersection LOS. There has been some discussion already of site-specific relaxations of the existing City of Bakersfield standard of LOS C related to adjacent transit-oriented developments. If traffic lanes along major arterials such as Chester Avenue and California Avenue were to be set aside for exclusive use by transit vehicles, congestion might result at some locations, exceeding the existing threshold for mitigation. In these cases, mitigation could be pursued, but it might not always be possible or even desirable to implement typical mitigation such as additional turn lanes, as such measures can sometimes impinge on the pedestrian realm or even adjoining properties. In these instances, policymakers would be faced with a decision: accept somewhat higher levels of traffic congestion at these locations or accept less robust transit-priority treatments. It should be noted that minimum roadway level of service standards in many urban areas are LOS D, or less in some cases.

Land Use Decisions Outside Kern County

Land use decisions in neighboring jurisdictions can greatly impact Kern's regional transportation system, as is being experienced at the northern end of the San Joaquin Valley. Spillover development from coastal areas will be a primary driver for development in the Kern region. However, the percentage commuting to

Los Angeles County from 1990 to 2000 remained unchanged at 3 percent of the total households in Kern, indicating that the main wave of urbanization has yet to reach this county. Kern COG and SCAG meet periodically to discuss interregional planning issues such as land use, transportation strategies, and regional housing needs. Recent meetings have been held to discuss the proposed Centennial new town development on Tejon Ranch property south of the Kern County line near Interstate 5 and State Route 138. Kern COG provides modeling on the transportation impacts of this development to the Kern region. In addition, Kern COG has agreements in place with the San Joaquin Valley metropolitan planning organizations and the four-county Eastern Sierra Transportation Planning Partnership.

Proposed Actions

Near Term, 2026–2030

- Encourage land use decisions by member agencies that promote pedestrian, bike, and transit-oriented mixed-use and infill development;
- Continue to review and comment on environmental documents and their identified transportation impacts, recommending pedestrian, bike, and transit-oriented development strategies;
- Promote increased communication with neighboring jurisdictions on interregional land use issues;
- Coordinate regularly with SCAG on interregional land use and transportation planning issues;
- Coordinate with the San Joaquin Valley Metropolitan Planning Organizations on interregional land use and transportation planning issues; and
- Coordinate with the Eastern Sierra Transportation Planning Partnership on interregional land use and transportation planning issues.

Long Term, 2030-2049

- Encourage land use decisions by local government member agencies that promote pedestrian, bike, and transit-oriented mixed-use and infill development;
- Where appropriate, encourage local government agencies to plan for high-density, pedestrian-oriented transit hubs that support the current and planned investment in alternative transportation modes such as bus transit;
- Encourage higher densities by member agencies necessary for the RHNA Plan;

- Promote land use patterns that support current and future investments in bus transit and that may one day support passenger rail alternatives;
- Re-evaluate feasibility of commuter rail alternatives and intermodal connections with implementation of the GET Long-Range Transit Plan and in light of potential high-speed rail service;
- Promote increased communication with neighboring jurisdictions on interregional land use issues;
- Coordinate regularly with SCAG on interregional land use and transportation planning issues;
- Coordinate with the San Joaquin Valley Metropolitan Planning Organizations on interregional land use and transportation planning issues;
- Coordinate with the Eastern Sierra Transportation Planning Partnership on interregional land use and transportation planning issues; and
- Continue coordination activities with the San Luis Obispo and Santa Barbara COGs on interregional land use and transportation planning issues for State Routes 33, 41, 46, 58, and 166.

3.6 PROPOSED RTP AND ALTERNATIVES

Each of the alternatives evaluated in this 2026 RTP/SCS Program EIR includes a collection of transportation projects and strategies or transportation network and a growth scenario. The alternatives evaluated for the 2026 RTP/SCS PEIR are as follows:

1. The **2026 RTP/SCS** (Plan or Project), which includes all of the elements summarized above, contains transportation/urban form strategies that encourage compact growth, increased jobs/housing balance, and development located in centers with a mix of uses designed to reduce vehicle trips and trip lengths, where feasible, in all parts of the region. The elements described above comprise the Plan network and the Plan growth scenario.
2. The **No Project Alternative** includes only those transportation projects that are included in the first year of the previously conforming transportation plan and/or Transportation Improvement Plan (TIP), or have completed environmental review by January 2026.
3. The **2022 Updated RTP/SCS Alternative** is an update of the adopted 2022 RTP/SCS to reflect the most recent growth estimates and transportation planning decisions and assumptions.

4. The **Countywide Infill Alternative** increases density and transit beyond what is included in the RTP/SCS. It includes a higher percentage of new growth as infill/redevelopment, additional transportation investments and a larger percentage of new housing as small lot or multi-family.

3.7 RELATIONSHIP TO OTHER EIRS

The 2026 RTP/SCS PEIR builds on the analysis and mitigation contained in the 2022 RTP/SCS PEIR. The 2026 RTP/SCS project list is similar to the project list for the 2022 RTP/SCS, although some of the transportation projects from the 2022 RTP/SCS are now considered committed and are included in the No Project Alternative. The 2026 RTP/SCS evaluates the most recent projects and policies and provides more direct comparisons between current conditions and expected future Plan conditions. This 2026 RTP/SCS PEIR includes additional analysis of cumulative, growth-inducing, and other indirect impacts.

3.8 INTENDED USES OF THE PROGRAM EIR

Kern COG will use this PEIR as part of its review and approval of the 2026 RTP/SCS. The lead agencies for individual projects may use this PEIR as the basis of their regional and cumulative impacts analysis. In addition, for projects that may be eligible for CEQA Streamlining, applicable mitigation measures from this PEIR shall be incorporated into those projects as appropriate and feasible, as determined by the lead/implementing agencies. It is the intent of Kern COG that member agencies and others use the information contained within the PEIR in order to "tier" subsequent environmental documentation of projects in the region. Information from this document may also be incorporated in future County Congestion Management Programs and associated environmental documents, as applicable.

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

This PEIR may also be used as part of CEQA Streamlining for projects that meet specified criteria. See **Chapter 1.0, Introduction**, for a discussion of CEQA streamlining.

4.0 ENVIRONMENTAL ANALYSIS

This section generally describes the regulatory framework and reviews the environmental setting for each issue area. Based on the regulatory context and existing setting, potentially significant environmental impacts that could result from implementation of the Plan are analyzed and identified. These potential impacts are analyzed for the following environmental issues: aesthetics; agriculture and forestry resources; air quality; biological resources; cultural resources including tribal cultural resources; energy; geology and soils; greenhouse gas emissions; hazards and hazardous materials; hydrology and water quality; land use and planning; mineral resources; noise; population and housing; public services; recreation; transportation; utilities and service systems; and wildfire. Discussion of potential impacts is focused on the identification of changes that may be considered to be environmentally significant (a substantial, potentially substantial, or adverse change in the environment) relative to the existing environmental conditions. Analysis of each environmental issue is organized into the following subsections:

- **Existing Setting:** A description of existing conditions that precede implementation of the proposed Project.
- **Regulatory Framework:** An identification of applicable federal, state, and local regulations.
- **Thresholds Of Significance:** The criteria by which the project components are measured to determine if the proposed Project would cause a substantial or potentially substantial adverse change in the existing environmental conditions. This section also includes a discussion of the methodology used to determine impacts, where appropriate.
- **Impacts:** An analysis of the beneficial and adverse effects of the proposed Project, including, where appropriate, assessments of the significance of potential adverse impacts, including cumulative impacts, relative to established thresholds (relative to existing conditions per the California Environmental Quality Act [CEQA]).
- **Mitigation Measures:** Whenever significant impacts relative to existing conditions are identified, mitigation measures are recommended to avoid or minimize impacts to the extent feasible.
- **Significance of Impacts After Mitigation:** A discussion of whether a significant and unavoidable impact would be reduced to a less than significant level after mitigation under CEQA or remain significant and unavoidable.

4.1 AESTHETICS

This section describes the existing visual characteristics within the region, identifies the regulatory framework with respect to regulations that address aesthetic resources, and evaluates the significance of the potential changes in the visual character that could result from development of the 2026 RTP. In addition, mitigation measures are identified as appropriate and feasible to reduce potentially significant adverse impacts.

4.1.1 ENVIRONMENTAL SETTING

4.1.1.1 Definitions

To provide context for the analysis presented below, a discussion of general definitions is necessary. Terms discussed include "viewsheds" and "visual quality," both key factors in addressing impacts to aesthetics and views. The environmental setting also generally describes regionally significant resources and lists the designated scenic highways, byways, and vista points.

The aesthetic value of an area is a measure of its visual character and quality, combined with the viewer's response to the area. The scenic quality component can best be described as the overall impression that an individual viewer retains after driving through, walking through, or flying over an area. Viewer response is a combination of viewer exposure and viewer sensitivity. Viewer exposure is a function of the number of viewers, the number of views seen, the distance of the viewers, and the viewing duration. Viewer sensitivity relates to the extent of the public's concern for particular viewsheds. These terms and criteria are described in detail below.

Degree of visibility: The extent to which transportation improvements and/or anticipated development can be seen. This refers to a large extent on route alignment and configuration (i.e., elevated, at grade, depressed, or underground) of the transportation improvement and location, height/bulk, construction materials (reflectivity, color) of development. Generally, elevated grade transportation investments have a more substantial impact on aesthetics and views. The taller a development, in general, the greater the potential for impact.

Glare: Perceived glare is the unwanted and potentially objectionable sensation as observed by a person looking directly into the light source (e.g., the sun, the sun's reflection, automobile headlights, or other light fixtures). Reflective surfaces on existing buildings, car windshields, etc., can expose people and property to varying levels of glare. Glare is typically a daytime condition where the sun reflects off a particular building, while lighting effects often occur when new nighttime sources of lighting are introduced into an area.

Scale: The size and proportion of transportation improvements and development in relation to the massing of the structures and buildings in the surrounding area.

Scenic Resources: Significant visual resources identified by local planning documents that can be maintained and enhanced to promote a positive image in the community, such as natural open spaces, topographic formations, and landscapes that contribute to a high level of visual quality. Natural landforms and landscapes are often established as scenic resources, such as lakes, rivers, and streams, mountain meadows, and oak woodlands. However, scenic resources can also include man-made open spaces and the built environment, such as parks, trails, nature preserves, sculpture gardens, and similar features.

State-designated Scenic Highway: The State Scenic Highway Program was created in 1963 to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment, a highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

Viewshed: A viewshed is a geographic area composed of land, water, biotic, and/or cultural elements seen from one or more viewpoints and has inherent scenic qualities and/or aesthetic value as determined by those who view it. A viewshed's extent can be limited by a number of intervening elements, including trees and other vegetation, built structures, or topography such as hills and mountains.

Visual Quality Visual quality refers to the character of the landscape, which generally gives visual value to a setting.[1,2] Various jurisdictions within the County, such as cities, the county, and federal or regional agencies, provide guidelines regarding the preservation and enhancement of visual quality in their plans or regulations.[3] An example of such guidance is the Caltrans Scenic Highway Visual Quality Program Intrusion Examples, which are presented in **Table 4.1-1, Caltrans Scenic Highways Program: Examples of Visual Quality Intrusions**. As that table illustrates, a given visual element may be considered desirable or undesirable, depending on design, location, use, and other considerations. Because of the size

---

1 California Department of Transportation (Caltrans). *Federal Highways, " Guidelines for the Visual Impact Assessment of Highway Projects,"* Available online at: https://www.environment.fhwa.dot.gov/env_topics/other_topics/VIA_Guidelines_for_Highway_Projects.aspx, accessed on March 23, 2026.

2 The term "visual quality" is used synonymously with "scenic quality" in this document.

3 California cities and counties are not required to include visual quality elements in their General Plans, although many do. However, the General Plans are required to include a Conservation Element, which includes resources such as waterways and forests that frequently are also scenic resources.

and diversity of Kern County, it is not possible or appropriate to apply uniform standards to all areas within the region.

In urban areas, roadway rights-of-way comprise 20 to 30 percent of the total land area. As a result, transportation systems have a major influence on human perception of the visual environment. As most vehicular movement occurs along transportation corridors, their placement largely determines what parts of the area will be seen. Even for people not using the transportation system at a particular time, or who never use certain modes of travel, transportation systems are usually a dominant element of the visual environment. Air quality and visibility affect view sheds and visual quality. In Kern County, high pollutant emissions combined with poor natural ventilation in the air basin result in degraded visibility. Of particular note is photochemical smog and airborne particulates, finely divided solids or liquids, such as soot, dust, aerosols, and mists that absorb sunlight, producing haze and reducing visibility.

It is useful to think of scenic resources in terms of "typical views" seen throughout Kern County because scenic resources are rarely encountered in isolation. A typical view may include several types of scenic resources, including both natural and man-made elements. The typical views seen in Kern County are outlined in the following paragraphs. It is important to distinguish between public and private views. Private views are views seen from privately owned land and are typically viewed by individual viewers, including views from private residences.

Public views are those experienced by the collective public. These include views of significant landscape features such as Lake Isabella or the Beale Clock Tower, as seen from public viewing spaces, not privately owned properties. CEQA (Pub. Resources Code, § 21000 *et seq*.) case law has established that obstruction of private views is not generally regarded as a significant environmental impact. (See *Citizens for Responsible and Open Government v. City of Grand Terrace* (2008) 160 Cal.App.4th 1323, 1337-38; *Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477, 492-93).

For example, in *Association for Protection etc. Values v. City of Ukiah* (1991) 2 Cal. App. 4th 720 [3 Cal. Rptr.2d 488] the court determined that:

> *we must differentiate between adverse impacts upon particular persons and adverse impacts upon the environment of persons in general. As recognized by the court in Topanga Beach Renters Assn. v. Department of General Services (1976) 58 Cal.App.3d 188 [129 Cal.Rptr. 739]: '[A]ll government activity has some direct or indirect adverse effect on some persons. The issue is not whether [the project] will adversely affect particular persons but whether [the project] will adversely affect the environment of persons in general.'*

Therefore, this analysis considers only public views in analyzing the visual impacts of implementing the proposed 2026 RTP.

Table 4.1-1
Caltrans Scenic Highways Program: Examples of Visual Quality Intrusions

Land Use Type	Minor Intrusion	Moderate Intrusion	Major Intrusion
Buildings: Residential, Commercial, Industrial Development	Widely dispersed buildings. Natural landscape dominates. Wide setbacks and buildings screened from roadway. Exterior colors and materials are compatible with environment. Buildings have cultural or historical significance.	Increased number of buildings, but they are complementary to the landscape. Smaller setbacks and lack of roadway screening. Buildings do not degrade or obstruct scenic view.	Dense and continuous development. Highly reflective surfaces. Buildings poorly maintained. Visible blight. Development along ridgelines. Buildings degrade or obstruct scenic view.
Unsightly Land Uses: Dumps, Quarries, Concrete Plants, Tank Farms, Auto Dismantling	Screened from view so that facility is not visible from the highway.	Not screened from view and visible but programmed/funded for removal and site restoration.	Not screened from view and visible by motorists. Will not be removed or modified. Scenic view is degraded.
Strip Malls		Neat and well landscaped. Blend with surroundings	Not harmonious with surroundings. Poorly maintained or vacant. Blighted, Development degrades or obstructs scenic view.
Parking Lots	Screened from view so that vehicles and pavement are not visible from the highway	Neat and well landscaped. Blend with surroundings	Not screened or landscaped. Scenic view is degraded.
Off-Site Advertising Structures			Billboards degrade or obstruct scenic view
Noise Barriers		Noise barriers are well landscaped and complement the natural landscape. Noise barriers do not degrade or obstruct views.	Noise barriers obstruct scenic view.
Power Lines	Not easily visible from road.	Visible, but compatible with surroundings	Poles and lines dominate view. Scenic view is degraded.
Agriculture: Structures, Equipment, Crops	Blends in and complements scenic view. Indicative of regional culture.	Not in harmony with surroundings. Competes with natural landscape for visual dominance.	Incompatible with and dominates natural landscape. Structures equipment or crops degrade scenic view.
Exotic Vegetation	Used as screening and landscaping. Blends in and complements scenic view.	Competes with native vegetation for visual dominance.	Incompatible with and dominates natural landscape. Structures equipment or crops degrade scenic view.
Clearcutting		Trees bordering highway remains so that clearcutting is not evident.	Clearcutting or deforestation is evident. Scenic view is degraded.
Erosion	Minor soil erosion.	Slopes beginning to erode. Not stabilized.	Large slope failures and no vegetation. Scenic view is degraded.
Grading	Grading blends with adjacent landforms and topography.	Some changes, but restoration is taking place.	Extensive cut and fill. Scarred hillsides and landscape. Canyons filled in. Scenic view is degraded.
Road Design	Blends in and complements scenic view. Roadway structures are suitable for location and compatible with surroundings.	Cut and fill is visible but has vegetative cover.	

Source: Caltrans. Scenic Highways Program, 1996.

4.1.1.2 Typical Views of the Plan Area's Visual Resources

The extraordinary range of visual features in the region is afforded by the mixture of climate, topography, and flora and fauna found in the natural environment, and the diversity of style, composition, and distribution of the built environment. Aesthetically significant features occur in a diverse array of environments within the region, ranging in character from urban centers to rural agricultural lands to natural woodlands.

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

Views of the various mountain ranges from locations in the region are considered valuable visual resources. Other natural features that may contain visual significance include the numerous rivers, streams, creeks, lakes, and reservoirs located within the region. Features of the built environment that may have visual significance include individual or groups of structures that are distinctive due to their aesthetic, historical, social, or cultural significance or characteristics. Examples of the visually significant built environment may include bridges or overpasses, architecturally appealing buildings or groups of buildings, landscaped freeways, or a location where an historic event occurred.

Agricultural Land and Pasture

Agricultural lands are a dominant visual landscape in the region, with 819,405 acres harvested in 2024.[4] Agriculture is an important industry for the region, but unlike most industrial uses, agricultural lands contribute to the scenic value of the region and contrast with urban landscapes. Agriculture provides an open space visual resource, characterized by no form, limited line (row crops), color, or textural features. The main agricultural uses in the region include grazing land, row crops, field crops, orchards, and nursery crops. Adding additional character to the visual landscape are agricultural buildings, including barns, processing facilities, storage areas, and farm housing.

---

4 Kern County Department of Agriculture and Measurement Standards, 2024 Kern County Agricultural Crop Report, October 7, 2025. Available online at: http://www.kernag.com/caap/crop-reports/crop20_29/crop2024.pdf, accessed on April 30, 2026.

Mountain Views

The east-west mountains of the Transverse Ranges, located in southern Kern County, are visible in many views within the County. Ranges present or visible from locations within Kern County include the Tehachapi Mountains (part of the Transverse ranges to the south), which reach elevations up to approximately 8,000 feet, the San Emigido Mountains (also part of the Transverse Ranges to the south), with elevations up to approximately 7,500 feet, and the Temblor Range (located along the Kern County western border), with elevations up to approximately 3,800 feet. Kern County also includes the southern slopes of the Sierra Nevada range and extends into the Mojave Desert to the east. Due to the County's extensive open space and development patterns, most areas of the County offer panoramic views of the surrounding mountain ranges.

Open Space, Habitat, and Protected Lands

Kern County is home to substantial open space areas, including national and state parks, and habitat conservation areas. National parks in the County include Sequoia National Forest, Los Padres National Forest, and the Carrizo Plain National Monument. State parks include Red Rock Canyon State Park, Fort Tejon State Historic Park, Tomo-Kahni State Historic Park, and the Tule Elk State Natural Reserve. In addition, the Valley Floor Habitat Conservation Plan (VFHCP) encompasses 3,110 square miles of primarily open space land, and the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) covers open space land scattered throughout the 408 square miles of the Bakersfield metropolitan area.[5] Public views of these areas vary according to the type of open space, and may include open grasslands, rolling hills, forested areas, and cultural sites.

Residential and Commercial Development

Most residential and commercial development within the County is concentrated in Bakersfield. Other population centers include Delano and smaller cities such as California City, Ridgecrest, Tehachapi, Shafter, Wasco, Arvin, and McFarland. Residential and commercial development in these cities is a mix of older and newer construction and is generally not more than two or three stories tall, although a few commercial buildings exceed this height, such as the 10-story Bank of America building in Bakersfield. The foot of the Grapevine also contributes to the visual character of the County with a combination of distribution centers mixed with small residential populations.

---

5 Federal Register, *Habitat Conservation Plan for the Kern County Valley Floor, Kern County, CA*, July 12, 2007. Available online at: https://www.federalregister.gov/documents/2007/07/12/E7-13528/habitat-conservation-plan-for-the-kern-county-valley-floor-kern-county-ca, accessed on March 26, 2026.

Downtown Bakersfield

Downtown Bakersfield offers numerous views of historically and culturally significant buildings. Such buildings include the Padre Hotel, constructed in 1928, the Fox Theater, constructed in 1930, the Women's Club building, constructed in 1921, and the Beale Clock Tower, constructed in 1964. Such structures, along with the generally low City skyline, form the typical view available in the downtown area.

Transportation Network

Many public views of Kern County are from the Interstate and US freeway routes. The freeways themselves are also a visual component of the landscape. I-5 and State Route (SR)-99 are the two primary north/south routes. Both are major transportation corridors (including substantial use by trucks) within California. Other north-south highways include SR-33 in the western portion of the County and SR-14 in the eastern portion. SR-58 is an east/west route. Other east/west routes include SR-46, SR-155, SR 166 and SR-178.

Streets in Kern County range from multi-lane, signalized roads to narrow, tree-lined streets in residential neighborhoods. Roadways include minor arterials, collector streets that connect residential uses to major street systems, local streets that serve the interior of a neighborhood, and alleys that provide delivery access to businesses located along the transportation system. Many streets have sidewalks and bicycle facilities included in the transportation right-of-way.

Rural areas tend to have narrower roads that cater to agricultural and goods movement traffic. Some roads in town centers or residential areas have sidewalks and bicycle facilities, though widened shoulders are the more common pedestrian and bicyclist treatments. In more remote areas, the transportation system contains gravel and dirt roads.

As discussed in more detail below, California's Scenic Highway Program was created by the legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. The program is administered by Caltrans and regulated at the local level. The program consists of laws, incentives, and guidelines intended to protect the scenic, historic, and recreational resources within designated scenic highway corridors. Caltrans defines a scenic highway corridor as the area of land generally adjacent to and visible from the highway. It is usually limited by topography and/or jurisdictional boundaries.

While there are no designated State Scenic Highways in Kern County, according to the Caltrans California Scenic Highway Mapping System, portions of three highways are eligible for designation, including SR 14, SR 58, and SR 41. Designations represent recognition of the high scenic and visual

qualities of these corridors. Specific design guidelines are required by local regulation for all designated highways, and the state-designated corridors must be reviewed when improvements are proposed to determine if the highway will remain eligible for designation as a scenic corridor. The remainder is locally designated highways or streets.

In addition to roadways and freeways, rail lines also contribute to the region's urban form. The region has two heavy rail systems, the Union Pacific (PC) and Burlington Northern and Santa Fe (BNSF) railroad. The primary function of the heavy gauge rail system is to transport freight cargo, but there is also some regional passenger rail via Amtrak. Given their cargo function, the heavy rail lines tend to be located adjacent to industrial and warehouse type uses whose design character is utilitarian and scaled for train and truck traffic and large-scale storage and manufacturing operations; but heavy rail lines are also found in urbanized core areas in the region. Planned high-speed rail facilities are generally planned near existing rail facilities and rights of way. For example, the planned Bakersfield Station for the California High Speed Rail would be located in the Downtown Bakersfield area near existing rail routes.[6] Current California High-Speed Rail Authority planning documents identify the Bakersfield station as part of the Interim Initial Operating Segment between Merced and Bakersfield, with additional rail and operational facilities located in northwestern Kern County near Shafter and 7th Standard Road. [7]

There is currently no light rail in Kern County. Light rail systems are designed for public transit and are intended to attract people and to serve populated destinations. Light rails and trains are designed to be more integral to the urban fabric, for example, in downtown areas where light rail lines are located in the center of active urban streets. Thus, unlike the heavy rail lines that create edges and barriers within the community, light rail lines can function as magnets or focal features around which development and people can congregate.

Although at a much smaller scale, air traffic also contributes to aesthetic character. Small planes, metal airplane hangars, and surface parking lots are visible from roadways surrounding airports in Kern County. A majority of airport buildings, including the hangars, are warehouse-like buildings with metal siding. The airstrips are paved, and there is artificial lighting throughout the night, providing sky glow over the airports.

---

6 California High Speed Rail Authority. Bakersfield. Available at: https://hsr.ca.gov/high-speed-rail-in-california/station-communities/bakersfield/, accessed March 27, 2026.

7 California High-Speed Rail Authority (CHSRA), 2025 Project Update Report, February 2025. Available online at:. https://hsr.ca.gov/wp-content/uploads/2025/03/2025-Project-Update-Report-FINAL-030125-A11Y.pdf

Trees and Forested Lands

In addition to the national and state parks discussed previously, Kern County contains a number of large forested areas. The County has areas of Douglas Oak Woodland, Pinyon Woodland, Red Fir Forest, Southern Cottonwood-Willow Riparian Forest, and Yellow Pine Forest. Such areas can be found on the valley floor and on mountainsides throughout the County.

Waterways

The Kern River is the primary waterway in the County. Covering approximately 160 miles, it extends south from the northern County line, where it feeds into Lake Isabella, and then from Lake Isabella it extends westward toward and through Bakersfield. The River terminates within the County and does not drain to the Pacific Ocean. Both the river and the lake provide recreational uses and scenic views. The California Aqueduct (Governor Edmund G. Brown California Aqueduct) also passes through Kern County. The aqueduct splits off into the East Branch and West Branch in extreme southern Kern County, north of the Los Angeles County line.

Light and Glare

General sources of light can be categorized as follows:

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

Examples of direct light associated with transportation systems can include highway signs, car headlights, and street/highway lights, as well as illumination from the interior of transit facilities. An example of indirect light can include the reflection of sunlight from a new, lightly colored road surface or a highly reflective noise wall. Development that occurs consistent with the SCS would be expected to have lighting associated with residential and commercial development, including security lighting, landscape and building lighting, as well as signage and other forms of lighting typical of urban areas.

4.1.2 REGULATORY FRAMEWORK

4.1.2.1 Federal

Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act of 1968 (16 USC. §§ 1271-1287), as set forth herein, consists of Public Law 90-542 (October 2, 1968) and amendments thereto. The Act established a method for providing federal protection for certain of the country's remaining free-flowing rivers, preserving them and their immediate environments for the use and enjoyment of present and future generations. Eligible rivers can be designated as Wild River Areas, Scenic River Areas, or Recreational River Areas. Recreational River Areas are "those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past." The Wild and Scenic Rivers Act, under Section 10, includes management direction for designated rivers. Section 10(a) states the following:

> *Each component of the national wild and scenic rivers system shall be administered in such manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration primary emphasis shall be given to protecting its aesthetic, scenic, historic, archeological, and scientific features. Management plans for any such component may establish varying degrees of intensity for its protection and development, based on the special attributes of the area.*

United States Department of Transportation Act, Section 4(f)

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

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

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

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

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

Federal Highway Administration National Scenic Byways Program

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

United States Bureau of Land Management Scenic Areas

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

United States Forest Service National Scenic Byways Program

The United States Forest Service (USFS) also has a National Scenic Byways Program, independent from the BLM program, to indicate roadways of scenic importance that pass through national forests. There are no National Scenic Byways or All-American Roads in Kern County.[8]

---

8 U.S. Department of Transportation, Federal Highway Administration, *National Scenic Byways & All-American Roads* . Available online at: https://fhwaapps.fhwa.dot.gov/bywaysp/States/Show/CA, accessed on March 27, 2026.

4.1.2.2 State

California Department of Transportation (Caltrans) Scenic Highway Program

The California Scenic Highway Program was created by the state legislature in 1963 to preserve and protect scenic highway corridors from changes that would reduce the aesthetic value of lands adjacent to highways. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

State goals for scenic highways include the following:

1. Preserve and enhance the unique visual, biological, and ecological resources of the Scenic Highway Corridor

2. Prevent and eliminate (when reasonably possible) conditions that detract from or compromise the quality of the aesthetic resources of the Scenic Highway Corridor

3. Encourage the development and maintenance of park and recreational facilities that contribute to the aesthetic quality of the Scenic Highway Corridor;

4. Encourage preservation of historical landmarks adjacent to the Scenic Highway Corridor

5. Encourage community civic groups to create programs that increase community interest in the visual assets of the Scenic Highway Corridor and facilitate the implementation of such programs

To be included in the program, the highways proposed for designation must meet Caltrans' eligibility requirements and have visual merit. After it is determined that a proposed highway satisfies the qualifications for Scenic Highway designation, the local jurisdiction, with the support of its citizens, must adopt a program to protect the scenic corridor. The five legislatively required standards for scenic highways are:

1. Regulation of land use and density (i.e., density classifications and types of allowable land uses)

2. Detailed land and site planning (i.e., permit or design review authority and regulations for the review of proposed developments)

3. Prohibition of off-site outdoor advertising and control of on-site outdoor advertising

4. Careful attention to and control of earthmoving and landscaping (i.e., grading ordinances, grading permit requirements, design review authority, landscaping, and vegetation requirements)

5. The design and appearance of structures and equipment (i.e., placement of utility structures, microwave receptors, etc.)

The status of a state scenic highway changes from eligible to officially-designated when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives notification that the highway has been designated as a scenic highway. Portions of SR-14, SR-58 and SR-41 are eligible state scenic highways in the County but have not officially been designated as of March 2026.[9]

Caltrans Adopt-a-Highway Program

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

California Code of Regulations Title 24 Part 6

The California Energy Code (Cal. Code Regs., tit. 24 § 6) was created as part of the California Building Standards Code by the California Building Standards Commission in 1978 to establish statewide building energy efficiency standards to reduce California's energy consumption. California's Building Energy Efficiency Standards are updated on an approximately three-year cycle; the 2025 Standards went into effect on January 1, 2026. These standards include mandatory requirements for efficiency and design of lighting control devices and mandatory requirements for indoor and outdoor lighting systems in residential and non-residential buildings, and hotel or motel buildings.

---

9 Caltrans. *California State Scenic Highway System Map*. 2026. Available online at: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa, accessed on March 24,2026.

Senate Bill 743

Changes to CEQA pursuant to new state law, Senate Bill No. 743 (Stats. 2013, ch. 386) (SB 743), required the Governor's Office of Planning and Research (OPR) to develop a new approach to analyzing transportation impacts under CEQA and create a new exemption for certain projects that are consistent with an adopted specific plan. The exemption applies if the project is a) within a transit priority area, b) consistent with a specific plan for which an EIR has been certified, and c) consistent with an SCS. SB 743 further provides that aesthetic and parking impacts of a project shall not be considered significant impacts on the environment if the project is 1) a residential, mixed-use residential, or employment center project, and 2) located on an infill site within a transit priority area. The exemption for aesthetic impacts does not include impacts to historic or cultural resources. Local governments retain their ability to regulate a project's transportation, aesthetics, and parking impacts outside of the CEQA process pursuant to local design review ordinances or other discretionary powers.[10]

4.1.2.3 Local

Kern County General Plan

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

In addition to federal and state designations, counties and cities have their own scenic highway designations, which are intended to preserve and enhance existing scenic resources. Criteria for designation are commonly included in the conservation/open space element of the city or County General Plan. The Kern County General Plan provides policies for establishing County scenic highways, but none have been designated at this time.[11]

---

10 California Legislative Information. 2013. *Senate Bill No. 743*.

11 County of Kern, Kern County General Plan, June 2004. Available online at: https://psbweb.kerncounty.com/planning/pdfs/kcgp/KCGP_Complete.pdf, accessed April 30, 2026.

Cities and counties can use open space easements as a mechanism to preserve scenic resources if they have adopted open-space plans, as provided by the Open Space Easement Act of 1974 and codified in the California Government Code (Section 51070 et seq.). According to the Act, a city may acquire or approve an open-space easement through a variety of means, including the use of public money. The Kern County General Plan includes aesthetic policies in an effort to preserve the visual characteristics of the County. They are as follows:

- Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.

- Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.

- Rural communities are historically identifiable small-scale non-urban settlements located in outlying areas of the County, which contain a mixture of residential and supportive commercial and other uses serving the community and the surrounding rural population. The County will ensure that the unique character of these communities is preserved and enhanced by recognizing the scale, density, size, and composition of development.

- Linear commercial development of shallow depth, lacking demonstrated demand, will be discouraged along streets or highways when it can be shown that it impairs the traffic-carrying functions of the highways, it detracts from the aesthetic enjoyment of the surroundings, or if it can be demonstrated that equally effective services can be provided in an alternative configuration.

- Encourage upgrading the visual character of existing industrial areas through the use of landscaping, screening, or buffering.

- Require that industrial uses provide design features such as screen walls, landscaping, increased height and/or setbacks, and lighting restrictions between the boundaries of adjacent residential land use designations so as to reduce impacts on residences due to light, noise, sound, and vibration.

- Provide for an orderly expansion of new urban development so that it maintains continuity of existing development, allows for the incremental expansion of infrastructure and public service, minimizes impacts on natural environmental resources, and provides a high-quality environment for residents and businesses.

County Zoning Ordinance (Title 19) Chapter 19.81: Outdoor Lighting

Residents in many areas of Kern County enjoy a dark night sky and have expressed interest in continued access to natural dark skies. In order to maintain the existing character of Kern County, the County takes a minimal approach to outdoor lighting, as excessive illumination can create a glow that may obscure the night sky, and excessive illumination or glare may constitute a nuisance. Chapter 19.81, Outdoor Lighting, of the County's Zoning Ordinance provides requirements for outdoor lighting within specified unincorporated areas of Kern County in order to limit unnecessary light intensity and glare, and to reduce light spillover onto adjacent properties and protect the ability to view the night sky by restricting unnecessary upward projections of light.[12]

County Zoning Ordinance (Title 19) Chapter 19.74: Scenic Corridor Combining District

The purpose of the Scenic Corridor (SC) Combining District is to designate areas which contain unique visual and scenic resources as viewed from a major highway or freeway. The siting of off-site advertising signs is required to be reviewed on a case-by-case basis to safeguard the scenic qualities of the natural environment and the visual qualities of primary entranceways into the County. The regulations established by the SC District are in addition to the regulations applicable to the commercial or industrial zoning district.[13]

County Zoning Ordinance (Title 19) Chapter 19.84 Signs

The purpose of this ordinance is to promote the orderly and attractive construction, placement, and display of signs throughout the County.[14] It is the policy of the County that the primary purpose of signs is identification and public information. Signs that cause distraction and represent potential safety hazards as well as aesthetic problems are either discouraged or prohibited. These general provisions serve as specific development standards to be applied in addition to the basic sign provisions within each zoning district.

---

12 County of Kern, Code of Ordinances - Chapter 19.81: Outdoor Lighting. Available online at: https://library.municode.com/ca/kern_county/codes/code_of_ordinances?nodeId=TIT19ZO_CH19.81OULIDASKOR, accessed April 30, 2026.

13 County of Kern, Code of Ordinances - Chapter 19.74: Scenic Corridor Combining District. Available online at: https://library.municode.com/ca/kern_county/codes/code_of_ordinances?nodeId=TIT19ZO_CH19.74SCCOSCCODI, accessed April 30, 2026.

14 County of Kern, Code of Ordinances - Chapter 19.84: Signs. Available online at: https://library.municode.com/ca/kern_county/codes/code_of_ordinances?nodeId=TIT19ZO_CH19.84SI, accessed April 30, 2026.

County Zoning Ordinance (Title 19) Chapter 19.64 Wind Energy Combining District

The Wind Energy Combining District contains development standards and conditions (Section 19.64.140)[15] that would be applicable to the siting and operation of Wind Turbine Generators (WTGs). The following provisions apply to aesthetics and visual resources.

B. Towers and blades shall be painted a non-reflective, unobtrusive color or have a non-reflective surface.

D. All on-site electrical power lines associated with wind machines shall be installed underground within one 150 feet of a wind turbine and elsewhere when practicable, excepting therefrom "tie-ins" to utility type transmission poles, towers, and lines. However, if project terrain or other factors are found to be unsuitable to accomplish the intent and purpose of this provision, engineered aboveground electrical power lines shall be allowed.

G. Wind generator machine and associated meteorological tower overall height shall not exceed 600 feet and is subject to Section 19.08.160.B.

Metropolitan Bakersfield General Plan[16]

Adopted on December 11, 2002, the Metropolitan Bakersfield General Plan is a policy document designed to give long-range guidance to those making decisions affecting the future character of the Metropolitan Bakersfield planning area. It represents the official statement of the community's physical development as well as its economic, social, and environmental goals. The general plan acts to clarify and articulate the relationship and intentions of local government to the rights and expectations of the general public, property owners and prospective investors. Through the plan, the local jurisdiction can inform these groups of its goals, policies, and development standards; thereby communicating what must be done to meet the objectives of the Plan. Similar to the Kern County General Plan, the Metropolitan Bakersfield General Plan includes aesthetic policies in an effort to preserve the visual characteristics of the City's metropolitan area. They are as follows:

- Encourage maintenance of the residential character of specially identified neighborhoods through such mechanisms as architectural design, landscape, and property setbacks.

---

15 County of Kern, Code of Ordinances - Chapter 19.64: Wind Energy (WE) Combining District. Available online at: https://library.municode.com/ca/kern_county/codes/code_of_ordinances?nodeId=TIT19ZO_CH19.64WIENWECODI, accessed April 30, 2026.

16 City of Bakersfield, *Metropolitan Bakersfield General Plan,* December 2002. Available online at: https://content.civicplus.com/api/assets/37a2e20d-e610-431f-a222-9f4f2ecd2ddd.

- Require that new multiple family residential projects incorporate design features such as screen walls and height and setback restrictions which foster compatibility with adjacent existing and future single-family residential uses.

- Provide for infill of commercial land uses to be compatible with the scale and character of existing commercial districts and corridors.

- Encourage adjacent commercial uses to be of compatible height, setback, color, and materials.

- Require that commercial development provide design features such as screen walls, landscaping and height, setback and lighting restrictions between the boundaries of adjacent residential land use designations so as to reduce impacts on residences due to noise, traffic, parking, and differences in scale.

- Encourage upgrading of visual character of heavy manufacturing industrial areas through the use of landscaping or screening-of visually unattractive buildings and storage areas.

- Require that industrial uses provide design features, such as screen walls, landscaping and height, setback, and lighting restrictions between the boundaries of adjacent residential land use designations so as to reduce impacts on residences due to light, noise, sound, and vibration.

- Encourage the use of creative and distinctive signage which establishes a distinctive image for the planning area and identifies principal entries to the metropolitan area, unique districts, neighborhoods, and locations.

- Prohibit the use of private, permanent signs in residential neighborhoods, except those for identification, sales, and rental of property.

- Develop a distinctive identity for the Bakersfield region which differentiates it as a unique place in the Southern San Joaquin Valley.

- Allow variation in the use of street trees, shrubs, lighting, and other details to give streets better visual continuity and increased shade canopy.

- Provide for the installation of street trees which enhance pedestrian activity and convey a distinctive and high quality visual image.

- Encourage landscaping the banks of flood control channels, canals, roadways and other public improvements with trees to provide a strong visual element in the planning area.

- Promote the establishment of attractive entrances into communities, major districts, and transportation terminals, centers, and corridors within the planning area.
- Encourage the establishment of design programs which may include signage, street furniture, landscape, lighting, pavement treatments, public art, and architectural design.
- Encourage new uses and buildings in pedestrian sensitive areas to incorporate design characteristics which include:
  - Walls which are aesthetically treated by the use of color, materials, offset planes, columns, and/or other architectural details, to provide visual interest to pedestrians
  - Landscaping, including trees, flowering shrubs, and ground cover
  - Pedestrian amenities, such as benches, trash receptacles and signage oriented to the pedestrian
  - Design amenities related to the street level such as awnings, arcades, and paseos
  - Visual access to the interior of buildings
  - Uses other than parking and traffic circulation between the sidewalk and building

While the Metropolitan Bakersfield General Plan remains the current long-range planning document for the City, the City of Bakersfield is in the process of updating their General Plan; the Bakersfield 2045 General Plan began to be drafted in 2021 and is anticipated to be adopted in 2027.[17]

4.1.3 ENVIRONMENTAL IMPACTS

4.1.3.1 Thresholds of Significance

For the purposes of this PEIR Kern COG has determined that adoption and/or implementation of the proposed 2026 RTP could result in significant adverse impacts to visual resources, if any of the following could occur:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway);

---

17 City of Bakersfield, *Bakersfield 2045 General Plan Update*. Available online at: https://bakersfield2045.com/general-plan/, accessed April 30, 2026.

- In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings; (Public views are those that are experienced from publicly accessible vantage point). In an urbanized area, conflict with applicable zoning and other regulations governing scenic quality;

- Create a new source of substantial light or glare, which would adversely affect day or nighttime views and/or cause a public hazard.

4.1.3.2 Methodology

The analysis assesses the potential impacts on visual resources that could result from the implementation of the proposed 2026 RTP. For each potential impact, implementation of the proposed 2026 RTP is analyzed at the regional level. Impacts on aesthetic resources are assessed in terms of both land use and transportation changes that could occur. By 2049, implementation of the proposed 2026 RTP would result in a land use pattern and transportation network that is different from existing conditions. Unless otherwise stated, "existing conditions" refers to conditions in the year 2025 (the year the Notice of Preparation was published).

Transportation routes in Kern County include highways, rail alignments, bicycle trails, state routes, and roads. Caltrans controls rights-of-way for interstates and state routes. The aesthetic appearance of Kern County is a function of both the natural landscape and man-made elements that create both urban and rural character and design in different areas of the County. Because transportation facilities can have a major influence on human perception of the visual environment, this section addresses the general aesthetic landscape of the region and assesses the potential impacts from region-wide construction of at- and above-grade transportation facilities. The County is relatively flat within the valley and desert regions. The valley areas are bounded to the south, east, and west by foothills and mountain ranges. The aesthetic quality of the County has been affected by various forms of transportation for some time. Because the SCS component of the 2026 RTP would influence urban development in Kern County, patterns of development are assessed with respect to aesthetics.

As outlined above, Kern County does possess considerable scenic resources; impacts to such resources are addressed in the analysis of impacts to views and visual character.

Determination of Significance

The methodology for determining the significance of visual impacts compares the existing conditions to the conditions anticipated to occur in 2049 with the adoption of the 2026 RTP, consistent *with CEQA Guidelines* Section 15126.2(a). Conditions anticipated to occur in 2049 are generally assessed based on the

conceptual level of detail available for transportation projects and development patterns. Because details of individual transportation projects and development projects are not known, the assessment is necessarily programmatic in detail. As project-level details (including for planning projects, individual transportation projects, and individual development projects) become available, they must be assessed in a project-specific environmental review.

The known visual resources located within the region were evaluated using the criteria set forth by the California Department of Transportation, the BLM, FHWA, USFS, and the *State CEQA Guidelines*. The analysis addresses visual resources of local significance.

Generally, with regard to aesthetic impacts, the greater the change from existing conditions, the more noticeable the change to the aesthetic environment. The construction of a new roadway generally has a greater impact on scenic resources than the widening of an existing one. Road widening, however, can have significant local impacts, especially when requiring the removal of trees and other important landscape buffers, or when construction of noise barriers or other visual impediments is necessary.

The development of new transportation facilities may affect visual resources, either through direct effects to buildings or through indirect effects to the area surrounding a resource if it creates a visually incompatible structure or blocks the visual resource completely. The region contains visual and scenic corridors; therefore, the potential for impacts to visual resources is significant. Improvements within existing rights-of-way are less likely to affect existing visual resources; however, new highway segments near visual resources could result in a significant impact. Also, reducing buffer zones between transportation corridors and visual resources through lane widenings and/or construction of noise walls or other features could cause significant impacts.

Scale and degree of visibility were considered in assessing the significance of impacts from the proposed Plan on scenic resources.

Implementation of the 2026 RTP would affect aesthetics and views. Expected significant impacts would be the obstruction of scenic views and resources, altering areas along routes eligible as state-designated scenic highways and vista points, creating significant contrasts with the scale, form, line, color, and overall visual character of the existing landscape, and adding visual urban elements to rural areas.

Both short-term construction-related impacts and long-term or permanent impacts would occur as a result of the implementation of the 2026 RTP. Below are descriptions of the types of direct impacts foreseeable from new transportation projects, as well as impacts anticipated to result from changes in development patterns.

Generally, proposed transportation projects are of the following two types:

- **New Systems:** new facilities, goods movement roadway facilities, rail corridors, connectors, interchanges, and high-speed trains.
- **Modifications to Existing Systems:** widening bridges, high-occupancy vehicle (HOV), grade crossings, interchange improvements, and maintenance operations.

Highway and arterial projects proposed in the 2026 RTP primarily consist of widening existing highways. However, some projects involve constructing new highway segments and new interchanges. Many transportation-related projects and/or programs proposed in the 2026 RTP would not involve construction activities. These projects would include travel demand management (such as increasing ridesharing and carpooling). However, critical gaps remain in the region's transportation system, and the Plan includes highway projects that would complete these gaps. **Table 3.0-7** in **Section 3.0, Project Description**, highlights some of these system expansion and completion projects.

The 2026 RTP also calls for expansion of transit facilities and service over the next 26 years. Many of the proposed public transit projects would involve service alterations on existing streets, highways, and rail lines only. Other proposed public transit projects would involve the possible construction of new rail lines. Some public transit projects, such as high-speed rail, include new stations or upgrades to existing stations. **Table 3.0-5** in **Chapter 3.0, Project Description**, shows major transit projects included in the 2026 RTP.

Impacts to scenic resources resulting from these proposed projects would depend on several factors, such as the type of project proposed for the given area, scenic resources in the given area, and the duration of the proposed construction activities.

In general, scenic resources could be significantly impacted by transportation projects proposing new systems (i.e., new facilities, goods movement roadway facilities, rail corridors, connectors, interchanges, and high-speed rail). Construction and operation of transportation projects proposed within the 2026 RTP could affect scenic resources located in the vicinity of these new system projects. Modification of transportation projects generally would result in short-term construction impacts to scenic resources.

Development can take many different forms. In general, high-rise development has more impacts than low or medium-rise, but aesthetic impacts are very site specific and must be addressed on a case-by-case basis as appropriate.

The following discussion presents a first-tier regional evaluation of potential impacts of the 2026 RTP on aesthetic resources. However, the evaluation of potential significant impacts and identification of appropriate mitigation measures must be undertaken at the project level as appropriate.

Kern COG's role is to prioritize and facilitate transportation projects consistent with adopted procedures. For regionally significant land use and transportation projects, Kern COG reviews and provides comments on environmental documents to determine consistency with applicable Kern COG planning and policy documents, including the RTP. Kern COG does not directly implement transportation projects and does not conduct project-specific environmental review. SB 375 specifically addresses the role of Metropolitan Planning Organizations (MPOs), such as Kern COG, and does not provide Kern COG with the authority to regulate land use. Therefore, Kern COG has no ability to impose mitigation measures within local jurisdictions.

Approach to Mitigation

As discussed in **Section 1.0**, **Introduction**, Kern COG does not have the authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG does not have the authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

4.1.3.3 Impacts and Mitigation Measures

Impact AES-1 **Have a substantial adverse effect on a scenic vista.**

Impact AES-2 **Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.**

Regional Impacts

Implementation of the transportation improvements and changes to land use patterns identified in the proposed 2026 RTP could result in visual impacts by blocking or impeding views of significant landscape features. In general, the potential to impact panoramic views and landscapes (both natural and man-made) varies by the location of transportation improvement projects. Panoramic views are found both in open space areas and in developed urban areas.

Within Kern County, views of scenic resources, including the Tehachapi Mountains, the San Emigido Mountains, the Temblor Mountain Range, and the Sierra Nevada can be seen from highways and roadways, including scenic corridors, throughout the County.

Improvements to existing transportation infrastructure, resulting from the implementation of the proposed 2026 RTP, such as roadway widening, bridge replacements, signal installation, and road rehabilitation, could result in modifications to the foreground of the various scenic viewsheds throughout the County. There is also potential for transportation projects, such as new roadways and bridges, to affect scenic resources or degrade the visual character of the area. This would include transportation projects that are located adjacent to a broad viewshed, such as the mountain ranges, valleys, ridgelines, or water bodies along roadways, or adjacent to the focal point of the forefront of the broad viewshed, such as visually important trees, rocks, or historic buildings.

While the projected regional increase in developed areas would be relatively small compared to the area of Kern County, and would occur through the year 2049, both changes to land use patterns and individual transportation improvements resulting from implementation of the proposed 2026 RTP have the potential to cause significant impacts to panoramic views. Both changes to land use patterns and transportation improvements have the potential to change the view of the middle ground or background elements of broad viewsheds through the conversion of open space uses to transportation use and/or urban use, or through the removal of visually important resources (such as trees, rocks, or historic buildings). Transportation projects could include features, such as sound walls, substantial grading, or structures (for example, bridges, elevated rail tracks) that could disrupt views. The high-density, mixed-use development in the Bakersfield area is indicative of transportation infrastructure's potential to influence urban form and character, while outlying infrastructure (such as train stations) still tends to include stand-alone elements that are not fully integrated with, nor have significantly influenced, the surrounding development patterns.

Changes in land use patterns would both (1) introduce a variety of urban uses into existing open space land and (2) increase density in existing urban areas. Changes in land use patterns and individual

transportation projects could cause intermittent interruptions in views to users of the highways, roadways, and rail system. Such changes to views could result in significant impacts. In some cases, impacts to visual resources can be reduced to less than significant levels by avoiding certain high-profile improvements and/or by minimizing alterations, and/or designing new structures so that they do not impede the scenic landscape and/or view.

Portions of SR-14, SR-58, and SR-41 are eligible state scenic highways in the County but have not officially been designated as of March 2026. Eligible state-designated corridors are not protected under the Corridor Protection Programs that safeguard scenic corridors from encroaching development. Development near eligible state-designated scenic highway corridors could affect panoramic views or views of significant landscape features or landforms.

Urban areas already have substantial existing transportation infrastructure and urban development. The additional infrastructure in these areas, associated with the implementation of the proposed 2026 RTP, would not impede or change the existing panoramic views or landscape features in the County. The 2026 RTP also anticipates that existing developed areas would be extended, which is less impactful than new towns forming in totally undeveloped areas.

While each jurisdiction in which land use and transportation improvements may be located has policies related to the protection of scenic resources and views, the potential remains for removal of scenic features, particularly those that would be in the foreground of scenic viewsheds and vistas. Impacts to panoramic views or views of significant features related to land use changes and/or transportation projects are significant for **Impact AES-1. Mitigation Measures MM AES-1** through **MM AES-3**, described below, would reduce but not necessarily eliminate potential significant adverse impacts.

Transit Priority Areas

Identified TPAs already have substantial existing transportation infrastructure and urban development. The additional infrastructure in these areas, associated with the implementation of the proposed RTP, will not impede or change the existing panoramic views or landscape features in the County. Furthermore, any projects consistent with SB 743 requirements would not have a significant aesthetic impact. Impacts to panoramic views and important visual resources within TPAs are considered less than significant for **Impact AES-1** and **Impact AES-2**. Mitigation at the TPA level is not required.

Level of Significance Before Mitigation

Significant at the regional level; less than significant at the TPA level.

Mitigation Measures

MM AES-1: Impacts to aesthetic resources shall be minimized through cooperation, information sharing regarding the locations of designated scenic vistas, and regional program development as part of Kern COG's ongoing regional planning efforts.

MM AES-2: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to identify and protect panoramic views and significant landscape features or landforms and implement project-specific mitigation as applicable. If it is determined that a project would significantly obstruct scenic views, implementing and local agencies should consider alternative designs that seek to avoid and/or minimize obstruction of scenic views to ensure compliance with Caltrans regulations for scenic vistas and the goals and policies of county and city general plans as applicable and feasible. Project-specific design measures may include a reduction in the height of improvements or the width of improvements to reduce obstruction of views or relocation of improvements to reduce obstruction of views. Additional measures may include the following, or other comparable measures identified by the Lead Agency:

- Use a palette of colors, textures, and building materials that are graffiti-resistant, and/or plant materials that complement the surrounding landscape and development.
- Use contour grading to better match the surrounding terrain. Contour the edges of major cut-and-fill to provide a more natural-looking finished profile.
- Use alternating facades to "break up" large facades and provide visual interest.
- Design new corridor landscaping to respect existing natural and man-made features and to complement the dominant landscaping of the surrounding areas.
- Replace and renew landscaping along corridors with road widenings, interchange projects, and related improvements.
- Retain or replace trees bordering highways, so that clear-cutting is not evident.
- Provide new corridor landscaping that respects and provides appropriate transition to existing natural and man-made features and is complementary to the dominant landscaping or native habitats of surrounding areas.

- Reduce the visibility of construction staging areas by fencing and screening these areas with low contrast materials consistent with the surrounding environment, and by revegetating graded slopes and exposed earth surfaces at the earliest opportunity.

- Use see-through safety barrier designs (e.g., railings rather than walls).

- Implement design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions in design of projects to minimize contrasts in scale and massing between the project and surrounding natural forms and developments. Avoid, if possible, large cuts and fills when the visual environment (natural or urban) would be substantially disrupted. The site or design of projects should minimize their intrusion into important viewsheds and use contour grading to better match the surrounding terrain.

MM AES-3: Kern COG, through its Environmental Review Program/Intergovernmental Review process, will facilitate and encourage implementing and local agencies to protect panoramic views and views of significant landscape features or landforms and implement project-specific mitigation as applicable. Kern COG will facilitate and encourage implementing and local agencies to consider taking the following (or equivalent) actions:

- Require that the scale and massing of new development in higher-density areas provide appropriate transitions in building height and bulk that are sensitive to the physical and visual character of adjoining neighborhoods that have lower development intensities and building heights; ensure building heights stepped back from sensitive adjoining uses to maintain appropriate transitions in scale and to protect scenic views; and

- Avoid siting electric towers, solar power facilities, wind power facilities, communication transmission facilities, and/or above-ground lines along scenic roadways and routes, to the maximum feasible extent.

Level of Significance After Mitigation

Mitigation Measures **MM AES-1** through **MM AES-3** would reduce potential impacts on scenic vistas and scenic resources. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional level, even with implementation of

the measures above, impacts are considered significant and unavoidable. Impacts at the TPA level would remain less than significant.

Impact AES-3 **In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings; (Public views are those that are experienced from publicly accessible vantage points). In an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.**

Regional Impacts

The implementation of the proposed 2026 RTP would result in (1) new and improved transportation infrastructure and (2) generally more compact development patterns as well as expansion of existing urban areas (rather than new towns in previously undeveloped areas). Both the new transportation infrastructure and the densification/extension of urban uses could result in changes to the visual character of the region.

The 2026 RTP promotes infill development and increased density, especially close to transit hubs and corridors. The 2026 RTP also anticipates expansion of existing urban areas in order to serve jobs located outside the urban areas. Infill development and urban expansion are beneficial at the regional scale, as it generally occurs in areas already designated for and receiving growth and preclude growth in undeveloped and/or agricultural and rural areas. Infill development, in general, does not significantly change the existing visual character or quality at the regional level, but rather adds to it while preserving the undeveloped character and quality in the agricultural and rural areas. Urban expansion does consume undeveloped land, but it does so in areas already affected by urbanization.

Development in more rural areas in the region could introduce new views to areas that are currently undeveloped. Depending on the design and siting of new transportation infrastructure and new development, these new views could be seen as a degradation of the visual character or quality of the region.

The proposed 2026 RTP would invest approximately $8.9 billion to support the region's capital transportation investments, including transit/rail/high speed rail and major highway improvements. Other improvements to existing facilities include road widening, intersection or interchange improvements, intelligent transportation system upgrades, bicycle lanes, turn pockets, HOV lanes, auxiliary and transition lanes, and other improvements.

Most of the road and highway investments would occur in urbanized areas where transportation infrastructure is already a dominant feature of the landscape. In terms of visual character and quality, infill development would not substantially change the visual character or quality of urban areas. Transportation projects would not degrade the existing visual character of the region because transportation infrastructure is already a dominant feature of the landscape in those areas. Within these urbanized spaces, transportation infrastructure projects would adhere to regulations governing scenic quality, such as those established at the County level in the General Plan and the County's ordinances (Chapters 19.81, 19.74, 19.84, and 19.64), as well as at the City level, such as the policies aimed at preserving aesthetic and visual characteristics in the Bakersfield Metropolitan General Plan. In non-urbanized areas of the region, such as rural areas, adding new transportation infrastructure could add an element of urban character to previously undeveloped lands and impact the natural landscapes of these areas. Depending on the design and siting of transportation projects, this could be considered a degradation of the visual character or quality of an area. As such, impacts to visual character from implementation of the proposed 2026 RTP at the regional level are considered potentially significant for **Impact AES-3,** and mitigation is required. **Mitigation Measures MM AES 1** above and **MM AES-4** through **MM AES-6** described below would mitigate these potential impacts to visual character.

Transit Priority Areas

The TPAs are generally located in areas that are already developed with urban uses. In terms of visual character and quality, the type of growth described in the regional impact discussion above would not substantially change the visual character or quality in the identified TPAs. The TPAs already contain mostly urban uses and are relatively compact. TPAs would see a variety of transportation improvements by 2049, including highway operation and maintenance, roadway widenings, bicycle and pedestrian infrastructure improvements, and improved transit service projects. Transit service would include increased frequency on local fixed route buses and transit service increases in commuter service. Because the identified TPAs already have a significant amount of transportation infrastructure, implementation of the proposed RTP would not substantially degrade the existing visual character or quality of the area. Further, as described above, TPAs are presumed to have less than significant aesthetic impacts under SB 743.

Therefore, the impacts on visual character in the vicinity of TPAs related to the proposed RTP are considered less than significant for **Impact AES-3**. No mitigation is required.

Level of Significance Before Mitigation

Significant at the regional level; less than significant at the TPA level.

Mitigation Measures

MM AES-4: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to design projects to be visually compatible with surrounding areas that possess high aesthetic value. Implementing and local agencies should design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. The design of projects should minimize intrusion into important viewsheds and use contour grading to better match surrounding terrain. To the extent feasible, landscaping should be designed to add significant natural elements and visual interest to soften hard edges. Projects should, to the extent feasible, avoid large cuts and fills when the visual environment (natural or urban) would be substantially disrupted.

MM AES-5: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to establish development standards for visually sensitive areas. Prior to approval of individual projects, Kern COG will encourage and facilitate implementing and local agencies to apply such development standards to maintain compatibility with surrounding natural areas, including site coverage, building height and massing, building materials and color, landscaping, site grading, etc.

MM AES-6: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to ensure that sites should be kept in a blight/nuisance-free condition. Any existing blight or nuisance should be abated within 60 to 90 days of approval, unless an earlier date is specified elsewhere.

Level of Significance After Mitigation

Mitigation Measures MM AES-1 and **MM AES-4** through **MM AES-6** would reduce potential impacts on visual character and consistency with existing policies related to scenic quality. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional level, even with implementation of the measures above, impacts are considered significant and unavoidable at the regional level. Impacts at the TPA level would remain less than significant

Impact AES-4 **Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.**

Regional Impacts

In general, new and improved transportation projects result in increased lighting as a result of security lighting, landscape and structure lighting, and lights on vehicles.

Implementation of the proposed 2026 RTP would result in higher and more intense levels of development as well as urban expansion, resulting in additional sources of light and glare in the region, potentially resulting in a significant impact. In areas of the region that are already built out, such increases would not cause public hazard or substantially degrade the visual character or quality of the area because existing sources of light and glare are already a dominant feature of the urban landscape. Within these areas, the marginal increases in light and glare, from new infill development would be less than significant.

Implementation of the proposed 2026 RTP would result in development beyond the County's existing urban footprint. In less developed areas of the region, where existing sources of light and glare are not as prevalent, new development could create new sources that could significantly impact day or nighttime views. However, new sources of light and glare would not create a public hazard because people are generally accustomed to light sources from transportation projects and urban uses, and although such lights can startle drivers, it is not anticipated that they would create a hazard.

Improvements to existing roadways and highways would not significantly increase the amount of glare and light in an area, as these improvements generally take place on existing facilities that have existing sources of glare and light. The marginal increases in glare and light from additional vehicle headlights, new reflective signage, new streetlights, new intersection control devices, and other improvements would be less than significant when considered at the regional level.

New transportation facilities could increase the amount of light and glare as a result of additional vehicles and additional streetlights, intersection control devices, reflective signage, and reflective roadway materials, which increase the total amount of illumination in an area in such a way as to cause a public hazard or degrade the existing visual character or quality. During the daytime, additional vehicles could increase the amount of glare in an area, and at night, additional vehicle headlights could increase the amount of light in an area where no sources of transportation glare and light previously existed. Transportation investments and new planned developments are generally expected to be located in areas already impacted by existing sources of light and glare, which would help to reduce aesthetic impacts; however, transportation projects, as well as expansion of urban areas, could introduce light and glare to areas where previously no sources existed, and therefore the impact is considered significant. Mitigation

is required for **Impact AES-3** to reduce light and glare impacts. **Mitigation Measure MM AES 1** above and **MM AES-7** described below would mitigate these potential impacts.

Transit Priority Areas

The regional impact section describes the conditions that could result in a potentially significant impact on visual resources because of light and glare. Because the identified TPAs already have significant existing transportation and urban development, the incremental increases in light and glare associated with implementation of the proposed RTP would not cause a public hazard.

Impacts to light and glare related to transportation projects and changes to land use patterns from implementation of the proposed RTP are considered less than significant for TPA areas for **Impact AES-4**. Mitigation is not required.

Level of Significance Before Mitigation

Significant at the regional level; less than significant at the TPA level.

Mitigation Measures

MM AES-7: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to design measures to reduce glare, light, and shadow. As part of planning, design, and engineering for projects, implementing and local agencies should ensure that projects proposed near light-sensitive uses avoid substantial spillover lighting. Design measures could include the following:

- Use lighting fixtures that are adequately shielded to a point below the light bulb and reflector and that prevent unnecessary glare onto adjacent properties.
- Restrict the operation of outdoor lighting for construction and operation activities to the hours of 7:00 a.m. to 10:00 p.m.
- Use high-pressure sodium and/or cut-off fixtures instead of typical mercury-vapor fixtures for outdoor lighting.
- Use unidirectional lighting to avoid light trespass onto adjacent properties.
- Design exterior lighting to confine illumination to the project site, and/or to areas which do not include light-sensitive uses.

- Provide structural and/or vegetative screening from light-sensitive uses.
- Shield and direct all new street and pedestrian lighting away from light-sensitive off-site uses.
- Use non-reflective glass or glass treated with a non-reflective coating for all exterior windows and glass used on building surfaces.
- Architectural lighting shall be directed onto the building surfaces and have low reflectivity to minimize glare and limit light onto adjacent properties.

Level of Significance After Mitigation

Mitigation Measures MM AES-1 and **MM AES-7** would reduce potential impacts from light and glare. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional level, even with implementation of the measures above, impacts are considered significant and unavoidable. Impacts at the TPA level would remain less than significant.

4.1.4 CUMULATIVE IMPACTS

The 2026 RTP includes transportation projects and land use strategies that would shape the region over the next 23 years and beyond. These changes include the extension of transportation and related infrastructure and the expansion of urbanized areas that would impact scenic resources. Transportation projects could facilitate access not only within the County but also to areas outside the region. In addition, Plan projects would connect with projects outside the region, facilitating and potentially inducing the construction of transportation infrastructure outside the region. This additional infrastructure outside the County could lead to development outside the region. The combination of urban infrastructure and development would change the character of the County. Urbanization or loss of these visual resources could also affect areas outside the region, as many of these scenic areas extend beyond Kern County. As a result, the 2026 RTP could indirectly cause changes to the visual character or to scenic areas outside Kern County. Therefore, the 2026 RTP would contribute to cumulative impacts to scenic resources, visual character, and light and glare. Implementation of **Mitigation Measures MM AES-1** through **MM AES-7** would reduce potential impacts to aesthetic resources. However, even with the implementation of mitigation measures, impacts are considered significant and could add to such impacts from cumulative projects (for example, other RTPs for surrounding jurisdictions) outside the region.

4.2 AGRICULTURE AND FORESTRY RESOURCES

This section describes the existing agricultural resources within the region and evaluates the significance of the changes in agricultural resources that could result from development of the 2026 RTP. In addition, this PEIR provides regional-scale mitigation measures as well as a framework of mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies to reduce identified impacts as appropriate and feasible.

4.2.1 ENVIRONMENTAL SETTING

4.2.1.1 Existing Conditions

Agricultural Lands

Kern County is located at the southern end of California's San Joaquin Valley, one of the richest agricultural areas in the world. The County is home to 2.73 million acres of some of the world's most productive farmland and grazing land. Farmers grow approximately 88 different crops,[1] contributing $7.9 billion a year to the California economy.[2] A number of crops are not grown commercially anywhere else in the nation. Additional statistics include the following:[3,4]

- Number of farms – 1,691
- Harvested cropland – 819,405 acres
- Irrigated land – 729,956 acres

Despite the low precipitation in the area and the County's dependence upon the availability of irrigation water, agriculture remains one of the primary industries in the County, with much of the level and moderately sloping land used for the production of agricultural crops. The foothills and mountain areas are used for livestock grazing. In the rolling hills northeast of Bakersfield, oil production dominates. Tehachapi is known for its apples, berries, pumpkins, lilac, and other mild temperature crops. Leading crops grown on the Valley floor area within the County include grapes, almonds, citrus, and pistachios.

---

1 County of Kern, *Kern County Crop Statistics*. 2025. Available online at: http://www.kernag.com/dept/stats/crop-stats.asp , April 2, 2026.

2 2024 Kern County Agricultural Crop Report, http://www.kernag.com/caap/crop-reports/crop20_29/crop2024.pdf, April 2, 2026.

3 Ibid.

4 USDA. 2022 Census of Agriculture County Profile. Kern County. Available online at: https://data.nass.usda.gov/Publications/AgCensus/2022/Online_Resources/County_Profiles/California/cp06029.pdf, accessed April 2, 2026.

One in six jobs in Kern County are directly related to agriculture. With Kern County containing some of the most productive farmland in the world, agriculture has deep roots in the region's history and future. According to the 2024 Kern County Agricultural Crop Report, the 2024 gross value of all agricultural commodities produced in Kern County was $7,960,900,835, representing an eight percent decrease from the 2023 crop value of $8,626,533,000.[5]

Kern County's agricultural areas also provide benefits such as habitat, flood control, groundwater recharge, and energy production. The California Department of Conservation maps farmland throughout California under the Farmland Mapping and Monitoring Program (FMMP). The FMMP has divided the County's important farmland into three separate maps: west, east, and central. **Figure 4.2-1, Kern County Farmland,** illustrates the location of farmlands in and outside Spheres of Influence (SOI).[6] For purposes of this analysis and in accordance with SB 375, "Farmland" means farmland that is outside all existing city spheres of influence or city limits as of January 1, 2008, and is one of the following:

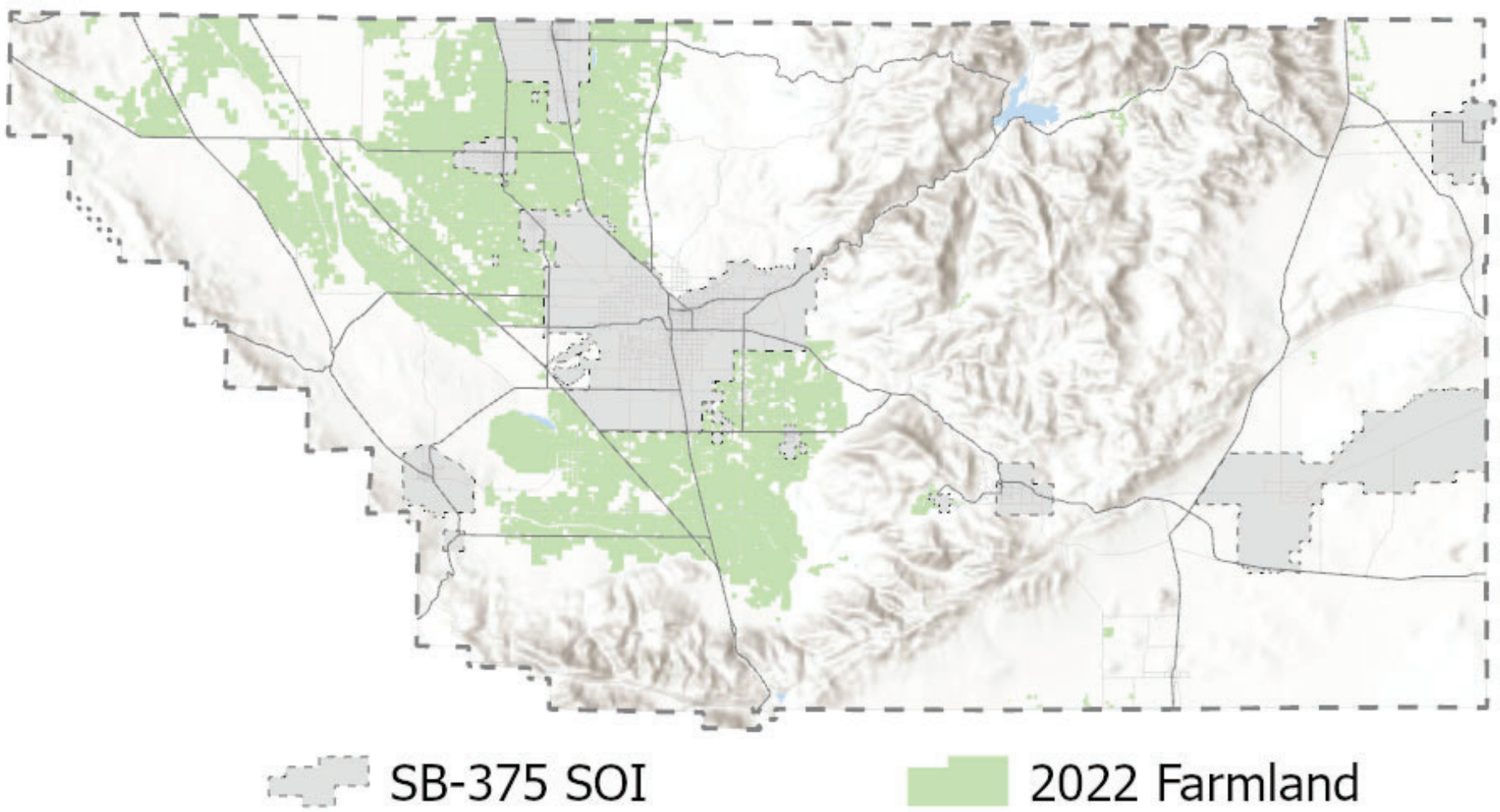
- Classified as prime or unique farmland or farmland of statewide importance.
- Farmland classified by a local agency in its general plan that meets or exceeds the standards for prime or unique farmland or farmland of statewide importance.

Table 4.2-1, Kern County Summary and Change by Land Use Category, compares the County's acreage in agricultural lands, urban and built-up land, other land, and water area from 2020 to 2022, and identifies the acreage lost and gained in each land use designation. As the table shows, from 2020 to 2022, farmland showed a net loss of 12,383. During the same period, urban and built-up land had a net total increase of 8,268 acres, and grazing land had a net total increase of 9,485 acres.

---

5 Kern County Department of Agriculture and Measurement Standards, 2024 Kern County Agricultural Crop Report, October 7, 2025. Available online at: http://www.kernag.com/caap/crop-reports/crop20_29/crop2024.pdf, accessed April 29, 2026.

6 Sphere of Influence (SOI) is an area that is affected by development within another county or city, but which the county or city has no formal authority.



SOURCE: Kern COG, 2026

FIGURE **4.2-1**

IMPACT SCIENCES

Kern County Farmland

1170.004•04/26

Table 4.2-1
Kern County Summary and Change by Land Use Category

Land Use Category	Total Acreage Inventoried 2020	2022	2020-2022 Total Acreage Changed	2020-2022 Net Acreage Changed
Important Farmland Subtotal	868,712	856,329	17,479	-12,383
Grazing Land	1,857,261	1,866,746	16,531	9,485
Agricultural Land Subtotal	2,725,973	2,723,075	34,010	-2,898
Urban and Built-up Land	170,342	178,610	8,902	8,268
Other Land	2,318,956	2,313,601	8,715	-5,355
Water Area	9,042	9,027	29	-15
Total Area Inventoried	5,224,313	5,224,313	51,656	0

Source: California Department of Conservation , Kern County 2020-2022 Land Use Conversion Table. Available online at: https://www.conservation.ca.gov/dlrp/fmmp/Pages/Kern.aspx , accessed on April 2, 2026.

The conversion of irrigated farmland to urban land[7,8] is primarily due to urbanization. The largest concentration of conversions occurred in the form of new homes in the Bakersfield area.[9] Non-irrigated and other land that was converted to urban land were primarily due to the construction of new homes, commercial and industrial buildings, and groundwater recharge or water control ponds, while conversions from irrigated farmland to non-irrigated land uses were due to irrigated farmland having been fallow or used for dry grain production for three or more update cycles. [10,11,12]

The FMMP has kept records of land use changes every two years since 1988. From 2004-2022, Important Farmland has shown a steady decrease with an average annual decrease of 6,157 acres, with acreage dropping 110,822 acres over eighteen years. During the same time period, grazing land increased by 75,279

7 Urban Land includes residential, industrial, recreational, infrastructure and institutional uses.

8 Irrigated Farmland includes most irrigated crops grown in California. When combined with soil data, these farmed areas become the Important Farmland (IFL) categories of Prime Farmland, Farmland of Statewide Importance & Unique Farmland. Because of the nature of the IFL definitions, some irrigated uses, such as irrigated pastures or nurseries, may not be eligible for all three IFL categories.

9 Department of Conservation, Farmland Mapping and Monitoring Program, Kern County 2004-2022 Land Use Summary.

10 Non-irrigated land uses include grazing areas, land used for dryland crop farming, and formerly irrigated land that has been left idle for three or more update cycles.

11 Other Land includes a variety of miscellaneous uses, such as low-density rural residential development, mining areas, vacant areas, and nonagricultural vegetation. Confined animal agriculture facilities are mapped as Other Land unless incorporated into a county Farmland of Local Importance definition.

12 Department of Conservation, Farmland Mapping and Monitoring Program, Kern County 2004-2018 Land Use Summary.

acres, an average of 4,182 acres per year. All agricultural land has decreased by 35,543 acres or an average of 1,975 acres per year. **Table 4.2-2, 2004 – 2022 Kern County Land Use Summary,** shows the decrease in important farmland and increase in grazing land within the County. Between 2004 and 2022, there was an average annual increase in urban and built-up land of approximately 3,155 acres.

Table 4.2-2
Kern County Land Use Summary 2004- 2022

Land Use Category	2004	2006	2008	2010	2012	2014	2016	2018	2020	2022	2004-2022 Net Acreage Change	Average Annual Acreage Change
Important Farmland												
Prime Farmland	643,128	640,037	626,217	608,790	597,771	585,035	579,295	573,935	567,066	557,531	-85,597	-4,755
Farmland of Statewide Importance	214,705	214,848	216,347	213,463	212,867	209,563	209,484	208,323	207,938	205,790	-8,915	-495
Unique Farmland	109,318	107,295	96,657	91,830	89,694	90,107	91,323	91,768	93,710	93,008	-16,310	-906
Farmland of Local Importance	0	0	0	0	0	0	0	0	0	0	0	0
Important Farmland Subtotal	967,151	962,180	939,221	914,083	900,33	884,705	880,102	874,026	868,714	856,329	-110,822	-6,157
Grazing Land	1,791,467	1,792,926	1,807,069	1,827,390	1,843,605	1,847,615	1,849,266	1,854,641	1,857,259	1,866,746	75,279	4,182
Agricultural Land Subtotal	2,758,618	2,755,106	2,746,290	2,741,473	2,743,937	2,732,320	2,729,368	2,728,667	2,725,973	2,723,075	-35,543	-1,975
Urban and Built-Up Land	121,828	129,339	138,696	141,89	143,726	151,595	159,179	164,084	170,341	178,610	56,782	3,155
Other Land	2,331,095	2,327,121	2,329,396	2,330,998	2,326,719	2,330,521	2,325,914	2,321,526	2,318,957	2,313,601	-17,494	-972
Water Area	9,842	9,811	9,880	9,890	9,876	9,874	9,853	9,038	9,042	9,027	-815	-45
Total Area Inventoried	5,221,383	5,221,377	5,224,262	5,224,258	5,224,258	5,224,310	5,224,314	5,224,315	5,224,313	5,224,313	2,930	163

Source: California Department of Conservation, Farmland Mapping and Monitoring Program 2004-2022.
(1) Due to completion of NRCS soil surveys for the southwestern and northeastern parts of Kern County, Important Farmland coverage is now available countywide. Figures are generated from the most current version of the GIS data.
(2) Total Area Inventoried changed in 2008 due to adoption of updated county boundary file; adjacent counties gained or lost corresponding acreages.
(3) Conversion of geospatial data to North American Datum 1983 (NAD 83) led to minor changes in total FMMP acreage beginning in 2014.

Williamson Act Lands

Kern County currently contains over 1.66 million acres of prime and non-prime agricultural land under Williamson Act preserve status through the Kern County Agricultural Preserve Program established in 1968. **Table 4.2-3, Number of Williamson Act Acres in Kern County in 2024,** illustrates the type (prime and non-prime) and amount of agricultural land within the County.

Table 4.2-3
Number of Williamson Act Acres in Kern County in 2024

Land Conservation Act	Acres 2024
Prime	601,470
Non-Prime	1,058,302
Total	**1,659,771**

Source: Kern COG 2026

The California Legislature passed the Williamson Act in 1965 to preserve agricultural and open space lands by discouraging premature and unnecessary conversion to urban uses. An agricultural preserve defines the boundary of an area within which a city or county will enter into Williamson Act contracts with landowners. The Williamson Act creates an arrangement whereby private landowners contract for a minimum of 10 years with counties and cities to voluntarily restrict their land to agricultural and compatible open-space uses. In return, restricted parcels are assessed for property tax purposes at a rate consistent with their actual use, rather than potential market value.

Farmland Security Zones are another vehicle to preserve agricultural and open space lands. Farmland Security Zones offer landowners greater property tax reduction than that of the Williamson Act. Land restricted by a farmland security zone contract is valued for property assessment purposes at 65 percent of its Williamson Act valuation, or 65 percent of its Proposition 13 valuation, whichever is lower. The minimum initial term for a farmland security zone contract is 20 years.

Though state subventions to backfill lost property tax revenue have been eliminated, the program is still embraced by the County and remains an important part of its farmland conservation strategy. Private land

use agreements, such as the Tejon Ranch Conservation and Land Use Agreement, are another alternative method to conserve the right to continue farming agricultural lands.

Oak Woodlands

Various types of Oak Woodlands, including Douglas, Valley, and Pinyon Oak are found in Kern County. Douglas, or Blue Oak (Quercus douglasii), are found at average elevations in the County's mountains, including the Temblor Range. Areas with the strongest growth include Granite Station, Wood, and Glenville.

Valley Oak woodlands are also found in Kern County and require deep soils and good moisture. Similar to Douglas Oaks vernal pools are often associated with the Valley Oak species. Valley Oak can be found in Castaic Valley, near the Tejon Pass, in the valleys surrounding Tehachapi, and at Lynns Valley in Greenhorn Range.

Digger Pine Oak (*Pinus sabiniana*) is dominant in rocky and exposed places in the County along ridges and in canyons, usually with poor or shallow soil. In this habitat, Douglas oak, although common, often grows in a stunted, dwarfed, or even shrubby form. At lower levels, the woodland grows on north slopes and in canyons with the Upper Sonoran grassland on the south slopes. With the exception of the region in the Greenhorn foothills between Granite Station and Glennville, the Douglas oak woodland is rarely extensive. At the middle and higher elevations, it alternates with the chaparral, shin oak brush, and even the yellow pine forest. The Douglas oak woodland occurs locally particularly in the region from Tehachapi south to the west end of Antelope Valley. It is also well developed on the south end of the Piute Mountains at Kelso Valley. In the San Emigdio and Temblor ranges it occurs in a distinctive association with California junipers, and from the Piute Mountain region south through the Tehachapi Mountains with Junipers and Pinyon pines.

On the desert-facing slopes of the Sierra Nevada, the easterly slopes of the Piute Mountains, the northwestern Tehachapi Range, and much of the Mt. Pinos region, the Douglas oak woodland of the western slopes is replaced by a sparse woodland of Pinyon Pines (*Pinus monophylla*), usually with large shrubs of California Juniper (*Juniperus californica*) at lower borders. This Pinyon woodland is especially well developed along the Kern-Tulare County line at the southeast border of the Kern Plateau in the Lamont Peak region; from here it extends to Kiahvah (Scodie) Mountain south of Walker Pass. South of here, on the desert-like summits of the extreme Southern Sierra Nevada, such as Gold, Dove, and Butterbredt Peaks, it is poorly developed. Pinyons are scattered but hardly form true woodland along the east slope of the Tehachapi Mountains, especially south of Tehachapi Pass. Finally, the woodland grows in a continuous

belt, often of forest proportions, around Mt. Pinos and in the San Emigdio Range west to the canyons bordering the upper Cuyama Valley in Ventura and Santa Barbara counties.

Forest Lands

In addition to the oak woodlands discussed above, several types of forest land are found in the County, including red fir, southern cottonwood-willow, and conifer forest land.

Throughout the County, the conifer Yellow Pine forest is typically found at higher elevations, except for a small area at Sunday Peak in the extreme northern part of the Greenhorn Range, where the Sierran Red Fir forest reaches its southern limits. The yellow pine forest occurs at elevations above 5,500 feet in the Mt. Pinos region, the Tehachapi Mountains, and the Piute Mountains. On Breckenridge Mountain and in the Greenhorn Range, it grows between 4,000 and 5,000 feet, and on the Kern Plateau at approximately 6,000 feet.

The Ponderosa pine (*Pinus ponderosa*) is the most common conifer in the Greenhorn Range and on Breckenridge Mountain. However, in the colder, more arid mountains ponderosa pine grows only in relict colonies and is generally replaced by the Jeffrey pine (*Pinus jeffrey).* Both Jeffrey and Ponderosa Pines are found in the Piute Mountains. The tree is rare in the Tehachapi Mountains and is only found in a small area on the east slope of Brush Mountain, in the Mount Pinos region.

Incense cedar (*Calocedrus decurrens*) is common in the Greenhorn Range and as a scattered grove in the Black Bob Canyon, San Emigdio-Mt. Pinos region. White fir (*Abies concolor)* is also found in the Greenhorn, San Emgdio-Mt Pinos forests. Big cone spruce or Douglas fir (*Pseudotsuga macrocarpa*) grows in parts of the Jeffrey pine forest in the Mt. Pinos region. The Kellogg oak (*Quercus kelloggii*) is a characteristic and common tree of both forests often extending as a narrow woodland below the lowest yellow pines.

The ponderosa pine forest in Kern County is notable for the number of species that reach their southern limits and includes no less than 48 plants. These plants at the southern limits of their range are often scattered and rare, sometimes forming single, isolated colonies.

The Southern cottonwood-willow riparian forest, found along the banks of the Kern River, is dominated by the broad-leafed deciduous Fremont's popular (*Populus fremontii*) and the black cottonwood (*Populus trichocarpa).*

Although occupying the smallest area of any association recognized, the red fir forest on the north and east slope of Sunday Peak near the summit is the southern limits of a widespread and important forest zone of the Sierra Nevada. This association grows for the most part on open slopes in thoroughly decomposed

granite, rich in organic matter, interspersed with open areas with extensive colonies of choke cherry (*Prunus emarginata*) and chinquapin (*Castanopsis sempervirens*). Here the granite outcrops have colorful colonies of pride-of-the-mountains (*Penstemon newberryi*), and Sierra manzanita (*Arcotostaphylos nevadensis*.).

4.2.2 REGULATORY FRAMEWORK

4.2.2.1 Federal

Department of Transportation Act, Section 4(f)

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

- It is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.

- The Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the states, in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of lands crossed by transportation activities or facilities.

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

    1. There is no prudent and feasible alternative to using that land; and

    2. The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) of 1981 (7 USC § 4201, *et seq.*) is administered by the NRCS. The NRCS maps soils and farmland to provide comprehensive information necessary for understanding, managing, conserving, and sustaining the nation's limited soil resources. The NRCS determines impacts to farmland that could occur due to a proposed project. The determination is made through coordination

between the federal agency proposing or supporting the project and the NRCS. The NRCS makes a determination, using set thresholds, as to whether additional project-specific mitigation is required. The FPPA is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to non-agricultural uses. It assures that—to the extent possible—federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland. Federal agencies are required to develop and review their policies and procedures to implement the FPPA every two years. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

Federal Farm and Ranchland Protection Program

The Federal Farm and Ranchland Protection Program (FRPP) is a voluntary easement purchase program that helps farmers and ranchers keep their land in agriculture. Pursuant to Sections 1539-1549 of the Farmland Protection Policy Act (FPPA) of 1981 Sections, the Secretary of Agriculture is directed to establish and carry out a program to "minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to the extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland." (7 USC 4201-4209 & 7 USC 658). The program provides matching funds to state, tribal, or local governments and nongovernmental organizations with existing farmland protection programs to purchase conservation easements or other interests in land.

The FRPP is re-authorized in the Farm Security and Rural Investment Act of 2002 (Farm Bill). The NRCS manages the program. The Technical Committee awards funds to qualified entities to conduct their farmland protection programs. Although a minimum of 30 years is required for conservation easements, priority is given to applications with perpetual easements. The Farm Bill was amended in 2018 to repeal the Desert Terminal Lakes Program (The Department of Agriculture program requires the transfer of certain Commodity Credit Corporation funds to the Bureau of Reclamation to provide water to at-risk natural desert terminal lakes).

Agricultural Act of 2014

Every five years, Congress passes a Farm Bill to establish national agriculture, nutrition, conservation, and forestry policy; the Agricultural Act of 2014 (2014 Farm Bill; H.R. 2642; Public Law 113-79) provides for the reform and continuation of agricultural and other programs of the Department of Agriculture through fiscal year 2018. The Agricultural Act of 2014 consolidates agricultural conservation programs for

flexibility, accountability, and adaptability at the local level; makes the USFS's Stewardship Contracting Authority over forestry resources permanent; provides funding for agricultural research, development, and promoting local and regional food systems; and encourages agricultural producers and partners to design conservation projects that focus on and address regional priorities. Projects that are funded under the Agricultural Act of 2014 are subject to FPPA agricultural conservation requirements. The Farm and Ranch Lands Protection Program (FRPP), a voluntary easement purchase program that helped farmers and ranchers keep their land in agriculture, was repealed under the Agricultural Act of 2014 and replaced with the Agricultural Conservation Easement Program (ACEP). Acres under the FRPP are considered enrolled ACEP. ACEP is composed of an Agricultural Land Easement (ALE) component and a Wetlands Reserve Easement (WRE) component; the purposes of the ALE component are to protect the agricultural use and future viability and related conservation values of eligible land by limiting nonagricultural uses of that land and to protect grazing uses and related conservation values. The United States Natural Resources Conservation Service (NRCS) manages the program.

Agricultural Improvement Act of 2018

The Agricultural Improvement Act of 2018, or 2018 Farm Bill, which was signed on December 20, 2018 (and will remain in effect through 2023, although some provisions extend beyond 2023), builds upon and continues to implement many of the crucial programs that serve agricultural producers. The United States Department of Agriculture (USDA) is charged with implementing the bill, which reauthorized previous programs in the 2014 Farm Bill to serve producers now while they seek public input for future programs.[13] The 2018 Farm Bill continued funding for major programs but did include some changes to Natural Resources Conservation Programs, such as expanding support to producers who address significant natural resources concerns through the adoption of conservation practices and activities.[14]

Federal Forest Legacy Program

The Forest Legacy Program (FLP) (16 USC § 2103c) was part of the 1990 Federal Farm Bill. The purpose of the FLP is to protect environmentally important forestland under private ownership from conversion to non-forest uses, such as residential or commercial development. The FLP promotes the use of voluntary conservation easements on these properties. Landowners who wish to participate may sell or transfer particular rights, such as the right to develop the property or to allow public access, while retaining

---

13 United States Department of Agriculture. 2018 Farm Bill. Available online at: https://www.farmers.gov/working-with-us/farm-bill, accessed April 2, 2026.

14 United States Department of Agriculture, What's New: Natural Resources Conservation Service (NRCS) and the 2018 Farm Bill. Available online at: https://www.farmers.gov/sites/default/files/documents/NRCS-FarmBill2018_WhatsNew-19.pdf, accessed April 2, 2026.

ownership of the property and the right to us it in any way consistent with the terms of the easement. The agency or organization holding the easement is responsible for managing the rights it acquires and for monitoring compliance by the landowner. Forest management activities, including timber harvesting, hunting, fishing, and hiking are encouraged, provided they are consistent with the program's purpose.

Federal Environmental Quality Incentives Program

The Environmental Quality Incentives Program (EQIP) is a voluntary program that provides financial and technical assistance through contracts up to 10 years in length to farmers and ranchers who face threats to soil, water, air, and related natural resources on their land. These contracts provide financial assistance to help plan and implement conservation practices that address natural resource concerns and for opportunities to improve soil, water, plant, animal, air and related resources on agricultural land and non-industrial private forestland. In addition, another purpose of EQIP is to help producers meet Federal, State, Tribal and local environmental regulations.

4.2.2.2 State

Farmland Mapping and Monitoring Program

In 1982, the State of California created the Farmland Mapping and Monitoring Program (FMMP) within the Department of Conservation to carry on the mapping activity from the NRCS on a continuing basis. The FMMP is a non-regulatory program that provides consistent and impartial analysis of agricultural land use and land use changes throughout California for use by decision-makers in assessing present status, reviewing trends, and planning for the future of California's agricultural land resources. The FMMP produces Important Farmland Maps, which are a hybrid of resource quality (soils) and land use information. Information from the FMMP was used to identify agricultural resources within the Kern County region. The FMMP is the primary system by which the extent, distribution, and quality of farmland is evaluated and monitored. Maps of Important Farmland are prepared periodically (approximately every two years) by the FMMP for most of the state's agricultural regions, based on soil survey information and land inventory and monitoring criteria developed by the NRCS. The classification system employed by FMMP consists of eight mapping categories: five categories of agricultural lands and three categories of nonagricultural lands. The characteristics of these eight categories are summarized below. As discussed above the data provided by FMMP (maps and tables) include farmland in and outside the SOI. Further, under SB 375 farmland is defined as all farmland outside all existing city spheres of influence (SOIs)/city limits and is classified as prime or unique, or farmland of statewide importance, or is farmland is classified by a local agency in its general plan that meets or exceeds the standards for prime or unique farmland or farmland of statewide importance. The following definitions apply to the FMMP:

- **Prime Farmland**: Prime farmlands are lands with the best combination of physical and chemical features able to sustain long-term production of agricultural crops. The land must be supported by a developed water supply that is dependable and of adequate quality during the growing season. It must also have been used for the production of irrigated crops at some time during the four years before the mapping data were collected.

- **Farmland of Statewide Importance**: Farmland of statewide importance is land with agricultural land use characteristics, irrigation water supplies, and physical characteristics similar to prime farmland but with minor shortcomings, such as steeper slopes or less ability to hold and store moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

- **Unique Farmland**: Unique farmlands are lands with lesser quality soils used for the production of California's leading agricultural crops. These lands are usually irrigated but may include non-irrigated orchards or vineyards as found in some of the state's climatic zones. Land must have been cropped at some time during the four years prior to the mapping date.

- **Farmland of Local Importance**: Farmlands of local importance are important to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.

- **Grazing Land**: Grazing lands are lands on which the existing vegetation is suited to the grazing of livestock.

- **Urban and Built-up Land:** This category describes land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

- **Other Land:** This category encompasses land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; vacant and nonagricultural land surrounded on all sides by urban development; confined livestock, poultry, or aquaculture facilities; strip mines; borrow pits; and water bodies smaller than 40 acres.

- **Water:** This category describes perennial bodies of water with an extent of at least 40 acres.

Figure 4.2-1, Kern County Farmland, depicts the areas devoted to prime farmland, unique farmland, farmland of statewide importance, and farmland of local importance.[15] Most of the land is located in Western Kern County. An acreage summary by FMMP mapping category for RTP plan area land is presented in **Table 4.2-1, Kern County Summary and Change by Land Use Category**. Urban development pressures and water availability affect agricultural lands throughout the region due to high population and employment growth. Agriculture conversion pressure is greatest at the edge of existing urban development.

The California Land Conservation Act (Williamson Act)

The California Land Conservation Act (Williamson Act) of 1965 (Gov. Code, § 51200–51207) was enacted by the California State Legislature in 1965 to encourage the preservation of agricultural lands. The California Department of Conservation administers the Williamson Act for the conservation of farmland and other resource-oriented laws. The Williamson Act program permits property tax adjustments for landowners who contract with a city or county to keep their land in agricultural production or approved open space uses for at least 10 years. Lands covered by Williamson Act contracts are assessed on the basis of their agricultural value instead of their potential market value under nonagricultural uses. In return for the preferential tax rate, the landowner is required to contractually agree not to develop the land for a period of at least 10 years.

Williamson Act contracts are renewed annually for 10 years unless a party to the contract files for non-renewal. The filing of a non-renewal application by a landowner ends the automatic annual extension of a contract and starts a nine-year phase-out of the contract. During the phase-out period, the land remains restricted to agricultural and open-space uses, but property taxes gradually return to levels associated with the market value of the land. At the end of the nine-year non-renewal process, the contract expires, and the owner's use of the land is restricted only by applicable local zoning.

The Williamson Act defines compatible use of contracted lands as any use determined by the county or city administering the preserve to be compatible with the agricultural, recreational, or open-space use of land within the preserve and subject to contract (Gov. Code, § 51202[e]). However, uses deemed compatible by a county or city government must be consistent with the principles of compatibility set forth in Government Code sections 51231, 51238, or 51238.1. **Table 4.2-3** shows the amount of agricultural lands under the Williamson Act contract in Kern County.

---

15 California Department of Conservation, Farmland Mapping and Monitoring Program. Available online at: https://www.conservation.ca.gov/dlrp/fmmp/Pages/Kern.aspx, accessed on April 2, 2026.

California Forest Legacy

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

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

The Right to Farm Act of 1981

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

California Farmland Conservancy Program Act

The California Farmland Conservancy Program Act of 2010 (Pub. Resources Code, § 10200 *et seq*.), also known as Sen. Bill No. 1142 (Stats. 2010, ch. 323) (SB 1142), established the California Farmland Conservancy Program (CFCP), which provides grants for agricultural conservation easements. An agricultural conservation easement aims to maintain agricultural land in active production by removing the development pressures from the land. Such an easement prohibits practices that would damage or interfere with the agricultural use of the land. Because the easement is a restriction on the deed of the property, the easement remains in effect even when the land changes ownership. Agricultural conservation easements are created specifically to support agriculture and prevent development on the subject parcels. While other benefits may accrue because the land is not developed (scenic and habitat values, for example), the primary use of the land is agricultural. Easements funded by the CFCP must be of a size and nature suitable for viable commercial agriculture.

Open Space Subvention Act

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

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000

The Cortese-Knox-Hertzberg Local Government Reorganization Act (Cortese-Knox-Hertzberg Act) of 2000 (Gov. Code, § 56000 *et seq.*) established procedures for local government changes of organization, including city incorporations, annexations to a city or special district, and city and special district consolidations. This act requires that the development or use of land for purposes other than open space shall be guided away from existing prime agricultural lands in open space use toward areas containing nonprime agricultural lands, unless that action would not promote the planned, orderly, efficient development of an area.

Z'berg-Nejedly Forest Practice Act of 1973

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

Timberland Production Zones

Under the Z'berg-Warren-Keene-Collier Forest Taxation Reform Act of 1976 (Gov. Code, §§ 51110–51119.5), counties must provide for the zoning of land used for growing and harvesting timber as Timberland Preserve Zones (TPZ). A TPZ is a 10-year restriction on the use of timberland, similar to the Williamson Act for agricultural lands. Land use under a TPZ is restricted to growing and harvesting timber or to compatible uses. In return, taxation of timberland under a TPZ will be based only on such restrictions in use.

California Timberland Productivity Act of 1982

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

4.2.2.3 Local

General Plans

The most comprehensive land use planning for the Kern region is provided by city and county general plans, which local governments are required to prepare as a guide for future development. The general plan contains goals and policies concerning topics that are mandated by state law or which the jurisdiction has chosen to include, such as land use, conservation and open space, natural resources, parks and recreation, and agricultural elements. As the largest jurisdiction in Kern County and the most likely to be impacted by the 2026 RTP, policies from the Kern County General Plan are summarized below.[16] In addition, as the largest City in Kern County, policies from the Metropolitan Bakersfield General Plan are also summarized below; other cities have similar policies to these two jurisdictions.

County of Kern General Plan

- Discourage premature urban encroachment into areas of intense agriculture.
- Appropriate resource uses of all types will be encouraged as desirable and consistent interim uses in undeveloped portions of the County, regardless of General Plan designation.
- In areas with a resource designation on the General Plan map, only industrial activities that directly and obviously relate to the exploration, production, and transportation of the particular resource will be considered to be consistent with this General Plan.

16 2004 Kern County General Plan. Available online at: https://kernplanning.com/planning/planning-documents/general-plans-elements/, accessed on April 2, 2026.

- The County will support programs and policies that provide tax and economic incentives to ensure the long-term retention of agriculture, timber, and other resource lands.

- Approval of any Confined Animal Facility (CAF), including dairies and feedlots, shall consider proximity to incorporated areas of urban development and sensitive receptors such as schools and hospitals. Environmental documentation shall analyze distances to these areas, as well as potential impacts and mitigation.

- Areas of low intensity agriculture use should be of an economically viable size in order to participate in the State Williamson Act Program/Farmland Security Zone Contract. Intensive Agriculture, Resource Reserve, Extensive Agriculture, and Map Code Resource Management shall be allowed when creation of the homesite parcel is found to be accessory and contiguous to a commercial agricultural use. Homesite parcels shall only be permitted when the property supporting the contiguous commercial agricultural use is subject to a Williamson Act Land Use Contract or Farmland Security Zone Contract.

- Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities.

- Provide for the orderly expansion of new urban-scale infrastructure and development and the creation of new urban-scale centers in a manner that minimizes adverse effects on agriculture and natural resource uses.

- When evaluating General Plan Amendment proposals to change an Intensive Agriculture designation to accommodate residential, commercial, or industrial development, the County shall consider the following factors:

  – Approval of the proposal will not unreasonably interfere with agricultural operations on surrounding lands.

  – Necessary public services (fire, sheriff, etc.) and infrastructure are available to adequately serve the project.

  – There is a demonstrated need for the proposed project location based upon population projections, market studies and other indicators.

  – The requested change in land use designation is accompanied by a zone change and other implementing land use applications for a specific development proposal.

  - The site is contiguous to properties that are developed or characterized by nonagricultural land uses.

  - Past agricultural use of the site has led to soil infertility or other soil conditions which render the property unsuitable for long-term agricultural use.

  - Approval of the proposed project outweighs the need to retain the land for long-term agricultural use.

  - Where adjacent or within proximity (0.5 mile) to existing urban areas, the County shall discourage agricultural conversion that is discontinuous with urban development.

- Any property in an Agriculture Preserve proposing to be subject to a Williamson Act Contract or Farmland Security Zone Contract must have a Resource designation.

- Agriculture and other resource uses will be considered a consistent use in areas designated for Mineral and Petroleum Resource uses on the General Plan.

- The County shall encourage qualifying agricultural lands to participate in the Williamson Act program or the Farmland Security Zone program.

- The County shall encourage efforts through the state legislature to increase subvention payment rates for state reimbursement to the County to more realistically offset the loss of property tax revenues associated with participation in the Williamson Act program or the Farmland Security Zone program.

- The County should encourage the merger of largely undeveloped, antiquated subdivisions that are designated Intensive Agriculture, Resource Reserve, Extensive Agriculture, or Resource Management into larger holdings to achieve density consistency with the underlying land use designation.

- Urban residential or commercial development on property contiguous to property designated Intensive Agriculture should employ landscaping, lot size, open space buffering, increased building setbacks, or other techniques to reduce the potential for land use conflicts when it can be demonstrated that such measures will provide for public welfare and benefit and promote continued agricultural uses.

- Oak woodlands and large oak trees shall be protected where possible and incorporated into project developments.

- Promote the conservation of oak tree woodlands for their environmental value and scenic beauty.

Metropolitan Bakersfield General Plan[17]

- Allow for the continuance of agricultural uses in areas designated for future urban growth.
- Provide for an orderly outward expansion of new "urban" development (any commercial, industrial, and residential development having a density greater than one unit per acre) so that it maintains continuity of existing development, allows for the incremental expansion of infrastructure and public services, minimizes impacts on natural environmental resources, and provides a high-quality environment for living and business.
- Determine the extent and location of all prime agricultural land within the study area.
- Review projects that propose subdividing or urbanizing prime agricultural land to ascertain how continued commercial agricultural production in the project vicinity will be affected.
- Protect areas designated for agricultural use, which include Class I and II agricultural soils having surface delivery water systems, from the encroachment of residential and commercial subdivision development activities.
- Monitor the amount of prime agricultural land taken out of production for urban uses or added within the plan area.
- Encourage agricultural uses to employ soil conservation measures to prevent erosion.
- Protect prime agricultural lands against unplanned urban development by adopting agricultural zoning, agricultural land use designations, and by encouraging the use of the Williamson Act and the Farmland Security Zone Program and policies that provide tax and economic incentives to ensure the long-term retention of agricultural lands.
- Encourage landowners to retain their lands in agricultural production.
- When considering proposals to convert designated agricultural lands to non-agricultural use, the decision-making body of the City and County shall evaluate the following factors to determine the appropriateness of the proposal:
  - Soil quality

17 2002 Metropolitan Bakersfield General Plan. Available online at: https://content.civicplus.com/api/assets/37a2e20d-e610-431f-a222-9f4f2ecd2ddd, accessed on April 2, 2026.

  - Availability of irrigation water
  - Proximity to non-agricultural uses
  - Proximity to intensive parcelization
  - Effect on properties subject to "Williamson Act" land use contracts
  - Ability to be provided with urban services (sewer, water, roads, etc.)
  - Ability to affect the application of agricultural chemicals on nearby agricultural properties
  - Ability to create a precedent-setting situation that leads to the
  - premature conversion of prime agricultural lands
  - Demonstrated project need
  - Necessity of buffers such as lower densities, setbacks, etc.

- Buffers such as setbacks, berms, greenbelts, and open space areas shall be established to separate farmland from incompatible urban uses.

- Sensitive subdivision design of lands near or adjacent to agricultural areas shall be conducted with consideration given to the impacts of nonagricultural uses on agricultural uses.

- To reduce the potential for conflicts between agricultural and nonagricultural uses, sensitive subdivision design of lands near or adjacent to agricultural areas shall be conducted, including provisions for buffer zones (i.e., a road, canal, wall, easement, or setback).

Community and Specific Plans

A city or county may also provide land use planning by developing community or specific plans for smaller, more specific areas within its jurisdiction. These more localized plans provide for focused guidance for developing a specific area, with the development standards tailored to the area, as well as systematic implementation of the general plan.

Zoning

City and county zoning codes provide detailed requirements that implement general plan policies at the level of the individual parcel. Zoning codes identify standards for different uses and specify which uses are allowed in the various zoning districts of a given jurisdiction. Since 1971, state law has required city and county zoning codes to be consistent with the applicable general plan, except in charter cities such as Bakersfield and Shafter.

Land Conservation Trust

A land trust is a nonprofit organization that, as all or part of its mission, actively works to conserve land by undertaking or assisting in land or conservation easement acquisition, or by its stewardship of such land or easements. A land conservation trust is another type of organization devoted to protecting open space, agricultural lands, wildlife habitats, and natural resource lands. There are approximately 80 established trusts in California. Local and regional land trusts, organized as charitable organizations under federal tax laws, are directly involved in conserving land for its natural, recreational, scenic, historical, and productive values. Local governments and special districts, either on their own or working with land trusts and conservancies, can acquire fee title to agricultural and open space lands or purchase development rights to preserve rural and agricultural areas, watersheds, or critical habitat, or to create public parks and recreational areas.

Local Agency Formation Commissions

The Local Agency Formation Commission (LAFCO) is the agency that has the responsibility to create orderly local government boundaries, with the goal of encouraging "planned, well-ordered, efficient urban development patterns," the preservation of open-space lands, and the discouragement of urban sprawl. While LAFCO has no direct land use authority, its actions determine which local government will be responsible for planning new areas. LAFCO addresses a wide range of boundary actions, including the creation of spheres of influence for cities, adjustments to boundaries of special districts, annexations, incorporations, detachments of areas from cities, and the dissolution of cities.

4.2.3 ENVIRONMENTAL IMPACTS

4.2.3.1 Thresholds of Significance

For the purposes of this PEIR, Kern COG has determined that adoption and/or implementation of the proposed 2026 RTP would result in significant impacts to agricultural and/or forestry resources, if any of the following could occur:

- Convert prime farmland, unique farmland, or farmland of statewide importance (farmland), as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.

- Conflict with existing zoning or land use designation for agricultural use, or a Williamson Act contract.

- Conflict with existing zoning or land use designation for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220(g)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104(g));
- Result in the loss of forest land or conversion of forest land into non-forest use.
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

4.2.3.2 Methodology

The analysis assesses the potential impacts on agricultural, timber, and forest resources that could result from the implementation of the 2026 RTP. For each potential impact, the implementation of the 2026 RTP is analyzed at the regional level.

Impacts are assessed in terms of both land use and transportation impacts using Kern County data related to projected population, housing, and employment growth. The methodology for determining the significance of these impacts applies the significance criteria above to the expected future (2049) land use pattern and transportation network.

The development of new transportation facilities may also affect agricultural, timber, and forest resources through indirect effects, including traversing agricultural, timberland, and forest lands.

Since this document analyzes impacts to agricultural, timber, and forest resources on a program level only, project-level analysis of impacts must be undertaken as appropriate.

Determination of Significance

The methodology for determining the significance of agricultural, timberland, and forest impacts compares the existing conditions to expected conditions in 2049 with the 2026 RTP, as required by *State CEQA Guidelines* Section 15126.2(a). The known agricultural, timberland, and forest resources located within the region were evaluated using the criteria set forth by the California Department of Conservation and the *State CEQA Guidelines*. The research analysis was limited to state-recognized agricultural, timberland, and forest resources.

Implementation of the proposed 2026 RTP has the potential to affect land use patterns, including the consumption of agricultural land, timberland, and forest land. In general, the potential to impact agricultural, timber, and forest resources varies by the development area type (or location of transportation improvement). Agricultural, timber, and forest resources are more prevalent in rural than urban areas.

Concentrations of agricultural land, timberland, and forest land are thus, more likely to exist in undeveloped areas. However, as approximately half of Kern County is comprised of agricultural land, these resources can be encountered near the periphery of urban and suburban areas. Forest land and timberland areas tend to be located away from urban areas and are frequently protected and, therefore, are less likely to be impacted by urban encroachment. Improvements within existing urban areas are less likely to affect agricultural resources. However, reducing buffer zones between transportation corridors and agricultural and forestry resources, and the reduction of the resources through lane widening, could cause significant impacts.

Approach to Mitigation

As discussed in **Section 1.0**, **Introduction**, Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

4.2.3.3 Impacts and Mitigation Measures

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997), prepared by the California Department of Conservation, as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Impact AG-1 **Convert prime farmland, unique farmland, or farmland of statewide importance (farmland), as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.**

Regional Impacts

As of 2022, Kern County's agricultural land included 557,531 acres of prime farmland, 93,008 acres of unique farmland, and 205,790 acres of farmland of statewide importance (see **Figure 4.2-1, Kern County Farmland** and **Table 4.2-2**, above). The potential for transportation projects and changes in urbanized uses to result in impacts to farmland is shown in **Table 4.2-4, 2026 RTP Land Consumption**.

Table 4.2-4
2026 RTP Land Consumption

Community Type	Square Miles of Impact (by 2049) No Project	2026 RTP
Land Consumed (New Development)	25.3 sq. miles	23.7 sq. miles
Important Farmland Consumed (Outside SOI)	0.4 sq. miles	0.35 sq. miles
Important Farmland Consumed (Inside SOI)	7.8 sq. miles	6.3 sq. miles
Percent of New Urban Development as Infill	25%	29%

Source: Kern COG, 2026
Note: SOI= Sphere of Influence

As shown in **Table 4.2-4**, while under conditions without the Plan, even more land would be consumed by urban uses, the 2026 RTP has the potential to convert 23.7 square miles of land consumed, of which 6.65 square miles would be prime, important farmland, or farmland of statewide importance.

The conversion of 23.7 square miles over the 24-year planning period represents a lower rate of conversion (approximately 1 square mile per year) than has historically occurred (an annual average of 3,090 acres of land per year was converted to urban land in the period 2004 to 2018). This lower rate of conversion is due largely to local government efforts to balance urban expansion with the conservation of economically viable farmland. This decrease in the impact on farmland from the RTP is important, as the viability of the agriculture industry is correlated with the amount of land in production and the type of production. Limited farmland conversion outside identified areas for economic growth can help to maintain the economic output related to agriculture in the Kern region and protect employment in the agricultural industry. Although the rate of farmland conversion to urban use would decrease, due to the importance of the region's agricultural resources, the impacts related to farmland conversion as a result of the land use

changes and transportation improvements from implementation of the proposed 2026 RTP are considered significant for **Impact AG-1**. Mitigation is required. **Mitigation Measures MM AG-1** through **MM AG-5** below would reduce potential impacts.

Transit Priority Area

TPAs represent those areas that have a combination of high-quality transit options and strategic employment opportunities. TPAs are generally located in urban/infill areas and would not be expected to substantially impact prime farmland. Therefore, impacts on FMMP designated farmland related to land use and transportation changes from concurrent construction projects and ongoing operations resulting from implementation of the proposed RTP are considered less than significant for **Impact AG-1**. No Mitigation is required.

Level of Significance Before Mitigation

Potentially significant at the regional level; less than significant at the TPA level.

Mitigation Measures

MM AG-1: Kern GOG shall facilitate minimizing future impacts to Important Farmland resources through cooperation, information sharing, and regional program development as part of Kern COG's ongoing regional planning efforts, such as web-based planning tools for local government and other GIS tools and data services. Lead Agencies, such as county and city planning departments, along with water agencies, shall be consulted during this update process.

MM AG-2 Kern COG shall work with member agencies and the region's farmland interests to develop regional best practices information for buffering farmland from urban encroachment, resolving conflicts that prevent farming on hillsides and other designated areas, and closing loopholes that allow conversion of non-farm uses without a grading permit.

MM AG-3: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to establish preservation ratios to minimize loss of prime, unique, and statewide importance farmland, such as the preservation of 1 acre of unprotected agricultural land being permanently conserved for each acre of agricultural land developed on major projects affecting more than 100 acres of agricultural land, or as consistent with local agencies best practice.

MM AG-4: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to encourage urban development, in place of development in rural and sensitive areas. Local jurisdictions should seek funding to prepare specific plans and related environmental documents to facilitate mixed-use development, and to allow these areas to serve as receiver sites for transfer of development rights away from environmentally sensitive lands and rural areas outside established spheres of influence and urban service district boundaries.

MM AG-5: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to identify and minimize impacts to agricultural resources through project design.

Prior to the design approval of RTP transportation projects, the implementing agency should assess the project area for agricultural resources and constraints. For federally funded projects, implementing and local agencies are required to follow the rules and regulations of Farmland Protection Policy Act including determining the impact by completing the Farmland Conversion Impact Rating form (AD-1006). For non-federally funded projects, implementing and local agencies should assess projects for the presence of important farmlands (prime farmland, unique farmland, farmland of statewide importance), and if present, perform a Land Assessment and Site Evaluation (LESA).

If significant agricultural resources are identified within the limits of a project, implementing and local agencies should consider alternative designs that seek to avoid and/or minimize impacts to the agricultural resources. Design measures could include, but are not limited to, reducing the footprint of a roadway or development or relocating/realigning a project to avoid important and significant farmlands. If a project cannot be designed without complete avoidance of important or significant farmlands, implementing and local agencies should compensate for unavoidable conversion impacts in accordance with the Farmland Protection Policy Act and local and regional standards, which may include enrolling off-site agricultural lands under a Williamson Act contract or other conservation or agricultural easement, mitigation banks, or paying mitigation fees.

Level of Significance After Mitigation

Mitigation Measures MM AG-1 through **MM AG-5** would reduce potential impacts with respect to the conversion of prime farmland, unique farmland, or farmland of statewide importance. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable

and therefore, at the regional level, even with implementation of the measures above, impacts are considered significant and unavoidable. Impacts at the TPA level would remain less than significant.

Impact AG-2 Conflict with existing zoning for agricultural use, or a Williamson Act contract.

Regional Impacts

As of 2024, the Kern region contained a total of 1,659,771 acres of land contracted under the Williamson Act. Of those acres, 601,470 acres were prime farmland and 1,058,302 acres were non-prime. As shown in **Table 4.2-4**, 6.65 square miles of total farmland could be consumed due to transportation projects and land use strategies included in the 2026 RTP. Over the 24-year planning horizon of the 2026 RTP, some land currently under Williamson Act contracts could expire and be converted to non-agricultural uses. However, as discussed in the 2026 RTP (see Chapter 4, Sustainable Communities Strategy), all land use changes would be subject to local plans and policies. As such, no specific zoning changes would occur as a direct result of the 2026 RTP, rather each individual jurisdiction would be responsible for approving land use and zoning changes.

However, due to the importance of the County's agricultural resources, the impacts on existing zoning and land use designations for agricultural resources, and Williamson Act agricultural lands related to the land use changes and transportation improvements from implementation of the proposed RTP are considered significant for **Impact AG-2**. Mitigation is required; see **Mitigation Measures AG-1** through **AG-5** above.

Transit Priority Area

As discussed above, TPAs are located in urban areas and generally would not overlap with areas zoned for agricultural use, agricultural land use designations, or farmland under active Williamson Act contracts. Therefore, impacts on agricultural resources related to land use and transportation changes from concurrent construction projects and ongoing operations resulting from implementation of the proposed RTP are considered less than significant for **Impact AG-2**. No Mitigation is required.

Level of Significance Before Mitigation

Significant at the regional level; less than significant at the TPA level.

Mitigation Measures

Implement **Mitigation Measures AG-1** through **AG-5**.

Level of Significance After Mitigation

Mitigation Measures **MM AG-1** through **MM AG-5** would reduce potential impacts on agricultural resources. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts are considered significant and unavoidable. Impacts at the TPA level would remain less than significant.

Impact AG-3 **Conflict with existing zoning or land use designation for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220(g)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104(g)).**

Regional Impacts

Kern County has thousands of acres of existing oak woodlands in addition to forest land comprised of red fir, southern cottonwood-willow, and conifer timberland.[18] As discussed above, the County maintains the largest number of acres in such resources, at the County level, throughout the state. As the oak woodlands and forest lands are generally located in the slow growth areas of the County (mountain areas) the rate of forest land loss has typically been slow.

Due to the planning horizon of the 2026 RTP (24 years), it is anticipated that some land currently defined and zoned as forest land or timberland could be converted to residential or other uses. However, as discussed in the 2026 RTP (see Chapter 4 Sustainable Communities Strategy), all land use changes would be subject to local plans and policies. As such, no specific zoning changes or development would occur as a direct result of the 2026 RTP, rather each individual jurisdiction would be responsible for approving land use and zoning changes. As a result, no direct changes to land use, land use designation, or zoning would occur as a result of the 2026 RTP.

Much of the growth anticipated with the Plan would occur in urbanized areas, not existing forest lands. Land use strategies contained within the 2026 RTP would help to encourage growth in developed areas rather than a more dispersed land use pattern that could result in the conversion of forest land.

However, due to the importance of the County's timberland and forest land resources, the impacts on existing zoning and land use designations for forest land resources, related to the land use changes and transportation improvements from implementation of the proposed 2026 RTP at the regional level, are

18 Kern County, *Volume 1 – Recirculated Draft Program Environmental Impact Report,* January 2004. Available online at: https://psbweb.kerncounty.com/planning/pdfs/kcgp/KCGP_RPEIR_vol1.pdf, accessed April 29, 2026.

considered potentially significant for **Impact AG-3**. Mitigation is required. **Mitigation Measures AG-2,** described above, and **AG-6** through **AG-8**, described below, would help decrease the regional impacts.

Transit Priority Areas

TPAs are located in urban areas and would not overlap with areas zoned for forest land or timberland land use designations. Therefore, impacts on forest land and timberland resources related to transportation projects and land use strategies resulting from implementation of the proposed RTP are considered less than significant for **Impact AG-3**. No mitigation is required.

Level of Significance Before Mitigation

Potentially significant at the regional level; less than significant at the TPA level.

Mitigation Measures

Implement **Mitigation Measure AG-4**.

MM AG-6: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to establish preservation ratios to minimize loss of forest land, and timberland, such as 1 acre of unprotected forest land and timber land to be permanently conserved for each acre of open space developed as a result of individual projects affecting more than 100 acres of forest land and timberland.

MM AG-7: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to implement design features in transportation projects to minimize impacts. Implementing agencies should consider corridor realignment, buffer zones and setbacks, and berms and fencing where feasible, to avoid forest lands and timberlands and to reduce conflicts between transportation uses and forest and timberlands.

MM AG-8: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to consider tree plantings at a minimum 1:1 ratio to mitigate impacts to forest lands.

Level of Significance After Mitigation

Mitigation Measures **MM AG-4, MM AG-6** through **MM AG-8** would reduce potential impacts on forest land and timberland resources. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional level, even with implementation of the measures above, impacts are considered significant and unavoidable. Impacts at the TPA level would remain less than significant.

Impact AG-4: **Result in the loss of forest land or conversion of forest land to non-forest use.**

Impact AG-5: **Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.**

Regional Impacts

By 2049, Kern County will experience an increase of approximately 106,900 people, 72,500 jobs, and 61,100 households. Implementation of the proposed 2026 RTP would convert roughly 19,141 acres of undeveloped land.

As discussed above, over the lifetime of the RTP, some land currently defined and zoned as forest land or timberland could be converted to residential, transportation, or other uses. However, as discussed in Chapter 4, Sustainable Communities Strategy of the RTP, all land use changes would be subject to local plans and policies. Therefore, no direct changes to land use designation or zoning would occur as a result of the 2026 RTP.

As also stated above, the most anticipated growth with the implementation of the RTP would occur in urbanized areas and not existing forest lands. However, due to the importance of the County's timberland and forest land resources, land use changes and transportation improvements from implementation of the proposed 2026 RTP at the regional level are considered potentially significant for **Impact AG-4**. Mitigation Measures **AG-6** through **AG-8**, described above, should be implemented to help offset such impacts.

Under the Plan, 29 percent of new growth would be infill, and 45 percent of new housing units would be dedicated to multi-family housing. By developing more compactly, the proposed 2026 RTP would direct growth to the areas that are already urbanized, thereby avoiding some agricultural lands from being converted to urban uses. In developing the 2026 RTP forecasted development pattern and transportation system, Kern COG relied on the policies of local governments to develop urbanization assumptions based on the most recent information available. Local land use policies related to agricultural preservation were

of particular importance in this effort. However, as discussed in **Impact AG-1** and **AG-2**, implementation of the proposed 2026 RTP could result in the conversion of 6.65 square miles of farmland. Lands that remain agricultural lands and are located near areas that are converted to urban uses may feel increased pressure to redevelop as nearby land values increase or as nuisances from urban development spread to agricultural lands.

Several transportation projects included in the 2026 RTP could require changes in existing land uses, which could result in the conversion of farmland to nonagricultural use. For example, the widening of existing roads, proposed as part of roadway improvement projects, would include the widening of existing roads, which, in areas adjacent to farmland, could result in a minor loss of farmland. However, any impacts to farmlands from widenings would likely be minimal as sufficient land exists between existing roadway and existing farming uses; further, only a small portion of any farmland would be even potentially affected.

While much of this transportation infrastructure would serve urban uses in urbanized areas of the region, it is likely that implementation of transportation improvements at the urban edge could increase urban traffic patterns on roads that serve urban development and agricultural lands. The 2026 RTP would increase the percentage of households in urban areas that have access to some form of transit, which could result in the extension of infrastructure into rural areas in turn making those areas more attractive for development.

Transportation projects included in the 2026 RTP would increase mobility choices and capacity within urban areas. Pressure to convert agricultural lands located near the periphery of these built-out areas to urban land uses could increase as transportation improvements are made.

Therefore, impacts to agricultural land located near urban areas and/or transportation improvements from implementation of the 2026 RTP are considered potentially significant at the regional level for **Impact AG-5**. Mitigation is required. **Mitigation Measures AG-1** through **AG-4** above would reduce these impacts.

Transit Priority Areas

TPAs are also located in urban areas and would not overlap with areas zoned for forest land or timberland land use designations. Therefore, impacts on forest land and timberland resources related to transportation projects and land use strategies resulting from implementation of the proposed RTP are considered less than significant for **Impact AG-4**. No Mitigation is required.

As previously discussed, TPAs are located in strategic employment areas with access to high-quality transit and are not located on agricultural lands. Therefore, the impacts to farmland related to the land use changes

from implementation of the proposed RTP in the County TPAs are considered less than significant for **Impact AG-5**. No mitigation is required.

Level of Significance Before Mitigation

Potentially significant at the regional level; less than significant at the TPA level.

Mitigation Measures

Implement **Mitigation Measures AG-1** through **AG-5**.

Level of Significance After Mitigation

Mitigation Measures **MM AG-1** through **MM AG-5** would reduce potential impacts on agricultural lands. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional level, even with implementation of the measures above, impacts are considered significant and unavoidable. Impacts at the TPA level would remain less than significant.

4.2.4 CUMULATIVE IMPACTS

Under the 2026 RTP, conversion of farmland, timberland, and forest land is anticipated. These impacts would be the direct result of either transportation improvements or development. As discussed above, impacts to agricultural and forest resources from the 2026 RTP are considered significant and unavoidable. Loss of farmland would contribute to statewide impacts. As Kern County is a primary producer of a variety of crops and one of the largest agricultural counties in the State, the loss of farmland could result in cumulative impacts statewide. Further, the loss of timberland and forest land, and or the disturbance of these lands could occur due to transportation projects and development included in the 2026 RTP. Loss of these resources and habitat, as well as habitat fragmentation, would contribute to statewide cumulative impacts. Therefore, the 2026 RTP would contribute to cumulative impacts on agricultural, timber, and forest resources.

4.3 AIR QUALITY

This section describes the ambient air quality of Kern County and provides a comparison of existing air quality to applicable federal, state, and local air pollutant standards. This section identifies the plans and policies developed in efforts to improve air quality, and evaluates potential air quality impacts associated with the 2026 RTP. In addition, this Program EIR provides regional-scale mitigation measures as well as a framework of mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies to reduce identified impacts as appropriate and feasible. Residual impacts after mitigation are also identified. Sources utilized in this discussion include air quality data from the San Joaquin Valley Air Pollution Control District (SJVAPCD) and Eastern Kern Air Pollution Control District (EKAPCD), the California Air Resources Board (CARB), and the U.S. Environmental Protection Agency (U.S. EPA). Note that air quality impacts from greenhouse gas emissions are discussed separately in **Section 4.6, Greenhouse Gas Emissions.**

4.3.1 ENVIRONMENTAL SETTING

4.3.1.1 Regional Climate

Kern County has a moderate climate with generally mild temperatures throughout the year. The geography in the County ranges from the San Joaquin Valley to the Mojave Desert and to the southern slope of the eastern Sierra Nevada. The San Joaquin Valley experiences hot, dry summers and cold, wet winters. Summers in the Mojave Desert are significantly hotter with greater temperature differences between night and day. The mountainous areas are cooler and wetter.

4.3.1.2 Regional Air Quality

The western half of Kern County is the San Joaquin Valley Air Basin, one of the most polluted air basins in the country. The eastern half of the County is located in the Mojave Air Basin. **Figure, 4.3-1, Kern County Air Pollution Control Districts Boundary Map,** shows the boundary of each air basin. The surrounding topography includes foothills and mountains to the east, west, and south. These mountain ranges direct air circulation and dispersion patterns. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems.

Ozone, classified as a "regional" pollutant, often afflicts areas downwind of the original source of precursor emissions. Ozone precursor emissions, such as NOx and ROG, are compounds that react in the presence of

solar radiation with other chemical compounds to form ozone.[1] Ozone can be easily transported by winds from a source area. Peak ozone levels tend to be higher in the southern portion of the Valley, as the prevailing summer winds sweep precursors downwind of northern source areas before concentrations peak. As described below, the U.S. EPA and the state designate air basins as in attainment or nonattainment for several pollutants, including ozone. The separate designations reflect the fact that ozone precursor transport depends on daily meteorological conditions. Other primary pollutants, carbon monoxide (CO), for example, may form high concentrations when wind speed is low. During the winter, Bakersfield experiences cold temperatures and calm conditions that increase the likelihood of a climate conducive to high CO concentrations. High CO concentrations are also linked to heavy traffic conditions with significant delays. Outside of Bakersfield, Kern County does not generally experience traffic conditions sufficient to result in high CO concentrations.

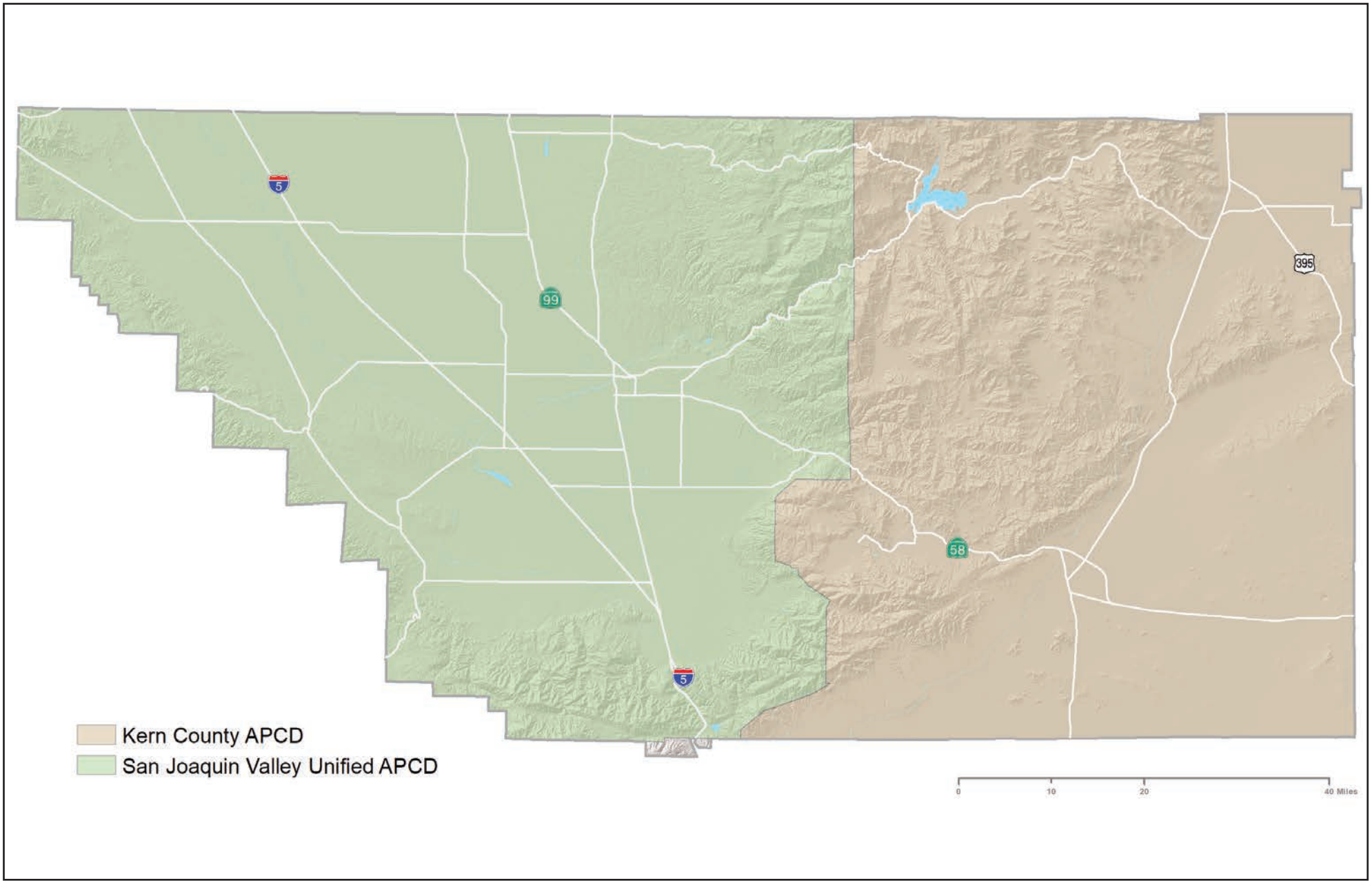
Surface radiant cooling can also cause temperature inversions, which are areas where the normal decrease in air temperature with increasing altitude is reversed, and air above the ground is warmer than the air below it. Inversion layers can occur anywhere from close to ground level up to thousands of feet into the atmosphere. One way for this to occur is on clear winter nights, when the ground loses heat at a rapid rate, cooling the ground off and radiating the heat into the air. As the ground cools, the air in contact with it cools as well. Inversion layers are significant to meteorology because they block atmospheric flow, which causes the air over an area experiencing an inversion to become stable. In areas with unhealthy air or high rates of air pollution, an inversion can trap pollutants at ground level, causing higher concentrations than under normal conditions when pollutants would tend to disperse due to air flow patterns. As a result, conditions in Kern County are conducive to the containment of air pollutants.

4.3.1.3 Ambient Air Quality Standards

Both the federal government and the State of California have established ambient air quality standards for several different pollutants. The U.S. EPA sets National Ambient Air Quality Standards for the following seven pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), respirable particulate matter (PM10), fine particulate matter (PM2.5), and lead. These seven pollutants are commonly referred to as "criteria pollutants." California Ambient Air Quality Standards have also been adopted for these pollutants, as well as for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. California standards are generally stricter than national standards. Each of the criteria pollutants that are relevant to the Proposed Action and that are of concern in the Air Basin is briefly described below.

---

1 European Environment Agency, Ozone – O_3. Available online at: https://www.eea.europa.eu/en/analysis/publications/air-quality-status-report-2025/ozone, accessed March 26, 2026.



SOURCE: California Air Resources Board, 2022

FIGURE **4.3-1**

IMPACT SCIENCES

Kern County Air Pollution Control Districts

1170.002•04/22

While reactive organic gases (ROGs) are not considered to be criteria air pollutants, they are widely emitted from land development projects and undergo photochemical reactions in the atmosphere to form O_3; therefore, ROGs are also relevant to the proposed project and are of concern in the area.[2]

- Ozone (O_3). O_3 is a gas that is formed when ROGs and oxides of nitrogen (NO_X), both byproducts of internal combustion engine exhaust and other sources, undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm ozone. ROGs are also referred to as reactive organic compounds (ROCs) or volatile organic compounds (VOCs). ROGs themselves are not criteria pollutants; however, they contribute to formation of O_3.

- Nitrogen Dioxide (NO_2). NO_2 is a reddish-brown, highly reactive gas that is formed in the ambient air through the oxidation of nitric oxide (NO). NO_2 is also a byproduct of fuel combustion. The principal form of NO_X produced by combustion is NO, but NO reacts quickly to form NO_2, creating the mixture of NO and NO_2 referred to as NO_X. NO_2 acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_X is only potentially irritating. NO_2 absorbs blue light, the result of which is a brownish-red cast to the atmosphere and reduced visibility.

- Carbon Monoxide (CO). CO is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest during winter mornings, with little to no wind, when surface-based inversions trap the pollutant at ground levels. CO is emitted directly from internal combustion engines. Motor vehicles operating at slow speeds are the primary source of CO in the basin. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.

- Sulfur Dioxide (SO_2). SO_2 is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant, mainly as a result of burning high-sulfur-content fuel oils and coal, and from chemical processes occurring at chemical plants and refineries. When SO_2 oxidizes in the atmosphere, it forms sulfates (SO_4).

- Respirable Particulate Matter (PM10). PM10 consists of suspended particles or droplets 10 micrometers or smaller in diameter. Some sources of PM10, like pollen and windstorms, are naturally occurring. However, in populated areas, most PM10 is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities.

---

2 U.S. EPA, Technical Overview of Volatile Organic Compounds. Available online at: https://www.epa.gov/indoor-air-quality-iaq/technical-overview-volatile-organic-compounds, accessed March 26, 2026.

- Fine Particulate Matter (PM2.5). PM2.5 is suspended particulate matter that is 2.5 micrometers or smaller in diameter. The sources of PM2.5 include fuel combustion from automobiles, power plants, wood burning, industrial processes, and diesel-powered vehicles such as buses and trucks. These fine particles are also formed in the atmosphere when gases such as sulfur dioxide, NO_x, and ROGs are transformed in the air by chemical reactions.

PM2.5 and PM10 pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. PM2.5 and PM10 can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. In some cases, the particles can cause infectious diseases. For example, inhalation of spores can cause San Joaquin Valley Fever (formally known as Coccidioidomycosis), an infectious disease caused by the fungus Coccidioides immitis. Infection is caused by inhalation of Coccidioides immitis spores that have become airborne when dry, dusty soil or dirt is disturbed by wind, construction, farming, or other activities. The Valley Fever fungus tends to be found at the base of hillsides in undisturbed soil and is found in the southwestern United States.

Very small particles of substances, such as lead, sulfates, and nitrates, can cause lung damage directly. These substances can be absorbed into the bloodstream and cause damage elsewhere in the body. These substances can transport absorbed gases, such as chlorides or ammonium, into the lungs and cause injury. Whereas PM10 tends to collect in the upper portion of the respiratory system, PM2.5 is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

A summary of state and federal ambient air quality standards and the effects of the exceedance of these standards on health are shown in **Table 4.3-1, Ambient Air Quality Standards**. For some pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values, such as protection of crops, protection of materials, or avoidance of nuisance conditions.

Table 4.3-1
Ambient Air Quality Standards

Air Pollutant	Concentration/Averaging Time: State Standard (CAAQS)	Concentration/Averaging Time: Federal Primary Standard (NAAQS)	Most Relevant Health Effects
Ozone[1]	0.09 ppm (180 μg/m³), 1-hour. avg. 0.070 ppm (137 μg/m³), 8-hour avg.	0.070 ppm (137 μg/m³), 8-hour avg. (three-year average of annual 4th-highest daily maximum)	(a) Pulmonary function decrements and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage
Nitrogen Dioxide[2]	0.18 ppm (339 μg/m³), 1-hour avg. 0.030 ppm (57 μg/m³), annual arithmetic mean	0.100 ppm (188 μg/m³), 1-hour avg. (three-year avg. of the 98th percentile of the daily maximum 1-hour avg.) 0.053 ppm (100 μg/m³), annual arithmetic mean	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extrapulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration
Carbon Monoxide	20 ppm (23 μg/m³), 1-hour avg. 9.0 ppm (20 μg/m³), 8-hour avg.	35 ppm (40 μg/m³), 1-hour avg. (not to be exceeded more than once per year) 9 ppm (10 μg/m³), 8-hour avg. (not to be exceeded more than once per year)	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses
Sulfur Dioxide[3]	0.25 ppm (655 μg/m³), 1-hour. avg. 0.04 ppm (105 μg/m³), 24-hour avg.	0.075 ppm (196 μg/m³), 1-hour avg. (three-year avg. of the 99th percentile) No 24-hour avg.	Broncho-constriction accompanied by symptoms, which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma
Suspended Particulate Matter (PM10)	50 μg/m³, 24-hour avg. 20 μg/m³, annual arithmetic mean	150 μg/m³, 24-hour avg. (not to be exceeded more than once per year on average over three years)	(a Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; and (b) Excess seasonal declines in pulmonary function, especially in children.
Suspended Particulate Matter (PM2.5)	12 μg/m³, annual arithmetic mean	35 μg/m³, 24-hour avg. (three-year average of 98th percentile) 9 μg/m³, annual arithmetic mean (three-year average)	(a) Increased hospital admissions and emergency room visits for heart and lung disease; (b) Increased respiratory symptoms and disease; and (c) Decreased lung functions and premature death.
Lead[4]	1.5 μg/m³, 30-day avg.	1.5 μg/m³, calendar quarter 0.15 μg/m³, three-month rolling average	(a) Increased body burden; and (b) Impairment of blood formation and nerve conduction

Air Pollutant	Concentration/Averaging Time: State Standard (CAAQS)	Concentration/Averaging Time: Federal Primary Standard (NAAQS)	Most Relevant Health Effects
Visibility-Reducing Particles	Extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more due to particles when relative humidity is less than 70 percent.	None	The statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze. This is a visibility based standard not a health based standard. Nephelometry and AISI Tape Sampler; instrumental measurement on days when relative humidity is less than 70 percent.
Sulfates	25 μg/m^3, 24-hour avg.	None	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and (f) Property damage
Hydrogen Sulfide	0.03 ppm (42 μg/m^3), 1-hour avg.	None	Odor annoyance
Vinyl Chloride[3]	0.01 ppm (26 μg/m^3), 24-hour avg.	None	Highly toxic and a known carcinogen that causes a rare cancer of the liver.

Source: CARB, Ambient Air Quality Standards. 2016. Available online at: https://ww2.arb.ca.gov/sites/default/files/2024-08/AAQS%20Table_ADA_FINAL_07222024.pdf, accessed March 26, 2026.
μg/m^3 = microgram per cubic meter; ppm = parts per million by volume;
NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards

[1] *Effective December 28, 2015, the U.S. EPA issues a new 8-hour Ozone standard. The new 8-hour standard is 0.070 parts per million.*

[2] *On January 25, 2010, the U.S. EPA promulgated a new 1-hour NO_2 standard. The new 1-hour standard is 0.100 parts per million (188 micrograms per cubic meter [μg/m^3]) and became effective on April 12, 2010.*

[3] *On June 3, 2010, the U.S. EPA issued a new 1-hour SO_2 standard. The new 1-hour standard is 0.075 parts per million (196 μg/m^3). The U.S. EPA also revoked the existing 24-hour and annual standards citing a lack of evidence of specific health impacts from long-term exposures. The new 1-hour standard became effective 60 days after publication in the Federal Register.*

[4] *CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.*

The U.S. EPA and CARB designate air basins or portions of air basins and counties as being in "attainment" or "nonattainment" for each of the criteria pollutants. Nonattainment areas are ranked (marginal, moderate, serious, severe, or extreme) according to the degree of nonattainment. Areas that do not meet the standards shown in **Table 4.3-1** are classified as nonattainment areas. The National Ambient Air Quality Standards (other than O_3, PM10, PM2.5, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The National Ambient Air Quality Standards for O_3, PM10, and PM2.5 are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards are not to be exceeded during a three-year period.

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant specific, an area may be classified as

nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant.

The San Joaquin Valley Air Basin (SJAB) located within the southern tip of the San Joaquin Valley Air Pollution Control District (SJVAPCD) is classified by the U.S. EPA as an O_3 nonattainment area and ranging from attainment/unclassified, nonattainment, and attainment for the other criteria pollutants. The main source of CO and NOx emissions is motor vehicles. The major contributors to ROG emissions are mobile sources and agriculture. ROG emissions from motor vehicles have been decreasing since 1985 due to stricter standards, even though the vehicle miles have been increasing. Stationary source regulations implemented by the SJVAPCD have also substantially reduced ROG emissions. ROG from natural sources (mainly from trees and plants) is the largest source of this pollutant in Kern County. Atmospheric modeling accomplished for recent ozone planning efforts has found that controlling NOx is more effective at reducing ozone concentrations than controlling ROG. However, controls meeting Reasonably Available Control Technology (RACT) and Best Available Control Technology (BACT) are still required for SJVAPCD plans.[3]

The SJVAB has been ranked the 2nd worst in the United States for O3 levels, even though data shows that overall O3 has decreased between 1982 and 2001. Direct PM10 emissions have decreased between the years 1975 and 1995 and have remained relatively constant since 2000. The main sources of PM10 in the SJVAB are from vehicles traveling on unpaved roads and agricultural activities. MPOs must implement Best Available Control Measures (BACM) for sources of fine particulate matter (PM10) to comply with federal attainment planning requirements for PM10.[4]

---

3 Reasonable Available Control Technologies are devices, systems, process modifications, or other apparatus or techniques that are reasonably available, taking into account: the necessity of imposing such controls in order to attain and maintain a national ambient air quality standard; the social environmental, and economic impact of such controls; and alternative means of providing for attainment and maintenance of such a standard. Best Available Control Technologies are the most stringent emission limitation or control technique of the following: 1. Achieved in practice for such category and class of source 2. Contained in any State Implementation Plan approved by the EPA for such category and class of source. A specific limitation or control technique shall not apply if the owner of proposed emissions unit demonstrates to the satisfaction of the air pollution control officer (APCO) that such a limitation or control technique is not presently achievable 3. Contained in an applicable federal New Source Performance Standard or 4. Any other emission limitation or control technique, including process and equipment changes of basic or control equipment, found by the APCO to be cost effective and technologically feasible for such class or category of sources or for a specific source. Source: Tulare County General Plan, *Air Quality Element*, August 2012.

4 Best Available Control Measures is a set of programs that identify and implement potentially best available control measures affecting local air quality issues. Source: Tulare County General Plan, *Air Quality Element*, August 2012.

The status of Kern County with respect to attainment of the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) is summarized in **Table 4.3-2, National and California Ambient Air Quality Standard Designations for Kern County**.

4.3.1.4 Toxic Air Contaminants

In addition to criteria pollutants, CARB periodically assesses the health impacts and ambient levels of toxic air contaminants (TACs), also referred to as hazardous air pollutants (HAPs), in California. The U.S. EPA also assesses health impacts for hazardous air pollutants. A TAC is defined by California Health and Safety Code Section 397655:

> *"Toxic air contaminant" means an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health. A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the federal act (42 USC. Sec. 7412(b)) is a toxic air contaminant.*

TACs are also defined as an air pollutant that may increase a person's risk of developing cancer and/or other serious health effects; however, the emission of a toxic chemical does not automatically create a health hazard. Other factors, such as the amount of the chemical, its toxicity, and how it is released into the air, the weather, and the terrain, all influence whether the emission could be hazardous to human health. TACs are emitted by a variety of industrial processes such as petroleum refining, electric utility and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust, and may exist as PM10 and PM2.5 or as vapors (gases). TACs include metals, other particles, gases absorbed by particles, and certain vapors from fuels and other sources.

The emission of toxic substances into the air can be damaging to human health and to the environment. Human exposure to these pollutants at sufficient concentrations and durations can result in cancer, poisoning, and the rapid onset of sickness, such as nausea or difficulty in breathing. Other less measurable effects include immunological, neurological, reproductive, developmental, and respiratory problems. Pollutants deposited onto soil or into lakes and streams affect ecological systems and eventually human health through consumption of contaminated food. The carcinogenic potential of TACs is a particular public health concern because many scientists currently believe that there is no "safe" level of exposure to carcinogens. Any exposure to a carcinogen poses some risk of contracting cancer.

The public's exposure to TACs is a significant public health issue in California. The Air Toxics "Hotspots" Information and Assessment Act is a state law requiring facilities to report emissions of TACs to air districts. The program is designated to quantify the amounts of potentially hazardous air pollutants released, the location of the release, the concentrations to which the public is exposed, and the resulting health risks.

Table 4.3-2
National and California Ambient Air Quality Standard Designations for Kern County

Pollutant	National Ambient Air Quality Standard Designations San Joaquin Valley Air Basin (Western Kern County)	National Ambient Air Quality Standard Designations Mojave Desert Air Basin (Eastern Kern County)	California Ambient Air Quality Standard Designations San Joaquin Valley Air Basin (Western Kern County)	California Ambient Air Quality Standard Designations Mojave Desert Air Basin (Eastern Kern County)
Ozone (O_3) – 1 hour	None	None	Nonattainment	Nonattainment
Ozone (O_3) – 8 hour	Nonattainment	Nonattainment	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment/Unclassified	Attainment/Unclassified	Attainment	Unclassified
Nitrogen Dioxide (NO_2)	Attainment/Unclassified	Attainment/Unclassified	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment/Unclassified	Attainment/Unclassified	Attainment	Attainment
Respirable Particulate Matter (PM10)	Attainment	Attainment/Nonattainment /Unclassified	Nonattainment	Nonattainment
Fine Particulate Matter (PM2.5)	Nonattainment	Attainment/Unclassified	Nonattainment	Attainment
Lead (Pb)	Attainment/Unclassified	Attainment/Unclassified	Attainment	Attainment

Source: CARB, Maps of State and Federal Area Designations, 2023. Available online at: http://www.arb.ca.gov/desig/adm/adm.htm, accessed March 26, 2026.

The State Air Toxics Program (AB 2588) identified over 200 TACs, including the 188 TACs identified in the federal Clean Air Act. The United States Environmental Protection Agency (U.S. EPA) has assessed this expansive list of toxics and identified 21 TACs as Mobile Source Air Toxics (MSATs). MSATs are compounds emitted from highway vehicles and nonroad equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline. U.S. EPA also extracted a subset of these 21 MSAT compounds that it now labels as the six priority MSATs: benzene, formaldehyde, acetaldehyde, diesel particulate matter (DPM)/diesel exhaust organic gases, acrolein, and 1,3-butadiene. While these six MSATs are considered the priority transportation toxics, the U.S. EPA stresses that the lists are subject to change and may be adjusted in future rules.[5] U.S. EPA has issued a number of regulations that will dramatically decrease MSATs through cleaner fuels and cleaner engines. According to an FHWA analysis, with an increase in vehicle miles traveled of 102 percent, reductions of 60 percent to 91 percent in MSATs are projected from 2010 to 2050.[6]

As noted in the definition above, all U.S. EPA hazardous air pollutants are considered to be TACs. CARB has assessed inhalation cancer risk for the state and has provided risk maps based on the Assessment System for Population Exposure Nationwide (ASPEN) dispersion model.[7] The ASPEN model is used in the U.S. EPA's National Air Toxics Assessment study.[8] The risk maps depict inhalation cancer risk due to modeled outdoor toxic pollutant levels, and do not account for cancer risk due to other types of exposure (e.g., direct or ingestion). Based on CARB's assessment, the largest contributor to inhalation cancer risk is diesel emissions (Diesel Particulate Matter [DPM]), which is consistent with the result of other studies, such as the South Coast Air Quality Management District's Multiple Air Toxics Exposure Study V (MATES V).[9] MATES V characterizes the carcinogenic risk from exposure to air toxics across the SCAQMD basin.

---

5 FHWA, *Memorandum. Information: Interim Guidance Update on Air Toxic Analysis in NEPA Documents*, December 6, 2012.

6 FHWA, Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA - Figure 1. Available online at: https://www.fhwa.dot.gov/Environment/air_quality/air_toxics/policy_and_guidance/nmsatetrends.cfm, accessed March 26, 2026.

7 U.S. Environmental Protection Agency (U.S. EPA). n.d.a. "The ASPEN Model," https://archive.epa.gov/airtoxics/nata/web/html/aspen.html.

8 U.S. Environmental Protection Agency (U.S. EPA). n.d.b. "National Air Toxics Assessments," https://www.epa.gov/national-air-toxics-assessment.

9 South Coast Air Quality Management District (SCAQMD). 2021. *MATES V: Multiple Air Toxics Exposure Study*. Available online at: http://www.aqmd.gov/docs/default-source/planning/mates-v/mates-v-final-report-9-24-21.pdf?sfvrsn=6, accessed March 26, 2026.

MATES V concluded that air toxic cancer risk has decreased by approximately 50 percent since 2012, and the risks were the highest along goods movement corridors and major freeways.[10]

California law defines TACs as air pollutants having carcinogenic or other health effects. A total of 245 substances have been designated TACs under California law; they include the federal Hazardous Air Pollutants (HAPs) adopted as TACs in accordance with Assembly Bill 2728. The Air Toxics Hot Spots Information and Assessment Act of 1987, Assembly Bill 2588 (AB 2588), seeks to identify and evaluate risk from air toxics sources; AB 2588 does not regulate air toxics emissions directly. Under AB 2588, sources emitting more than 10 tons per year of any criteria air pollutant must estimate and report their toxic air emissions to the local air districts. Local air districts then prioritize facilities on the basis of emissions, and high-priority facilities are required to submit a health risk assessment and communicate the results to the affected public. Depending on risk levels, emitting facilities are required to implement varying levels of risk reduction measures.

The California-specific transportation air quality analysis model, EMFAC, is designed to model MSATs at the project-level. Health effects from MSATs/TACs, i.e., cancer risks and chronic non-cancer risks from on-road traffic, have been associated primarily with DPM, benzene, and 1,3-butadiene. EMFAC can be used to estimate DPM, benzene, and 1,3-butadiene emissions. In addition to DPM, benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, paradichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene pose the greatest existing ambient TAC risk, for which data are available, in California. DPM poses the greatest health risk among these ten TACs mentioned. Based on receptor modeling techniques, it is estimated that DPM accounts for up to 50 percent of the total regional risk in Southern California.[11]

Diesel Particulate Matter (DPM)

According to the 2013 California Almanac of Emissions and Air Quality, the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from the exhaust of diesel-fueled engines. DPM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances.[12]

On a statewide basis, the average potential cancer risk associated with particulate matter from diesel-fueled engines, diesel particulate matter (DPM), is over 500 potential cancer cases per million exposed persons. In addition to these general risks, DPM can also present elevated localized or near-source exposures.

10 Ibid.

11 Ibid.

12 California Air Resources Board. *The California Almanac of Emissions and Air Quality 2013 Edition*. 2013.

Depending on the activity and nearness to receptors, these potential risks can range from a low number to 1,500 cancer cases per million exposed persons.[13]

Diesel exhaust is composed of two phases, gas and particle, and both phases contribute to the health risk. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons. The particle phase is also composed of many different types of particles by size or composition. Fine and ultra-fine diesel particulates are of the greatest health concern, and may be composed of elemental carbon with adsorbed compounds such as organic compounds, sulfate, nitrate, metals, and other trace elements. Diesel exhaust is emitted from a broad range of diesel engines; the on-road diesel engines of trucks, buses, and cars, and the off-road diesel engines that include locomotives, marine vessels, and heavy-duty equipment. Although DPM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present.

The most common exposure to DPM is breathing the air that contains DPM. The fine and ultra-fine particles are respirable (similar to PM2.5), which means that they can avoid many of the human respiratory system defense mechanisms and enter deeply into the lung. Exposure to DPM comes from both on-road and off-road engine exhaust that is either directly emitted from the engines or lingering in the atmosphere.

Diesel exhaust causes health effects from both short-term or acute exposures and long-term chronic exposures. The type and severity of health effects depend upon several factors, including the amount of chemical exposure and the duration of exposure. Individuals also react differently to different levels of exposure. There is limited information on exposure to just DPM, but there is enough evidence to indicate that inhalation exposure to diesel exhaust causes acute and chronic health effects.

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

---

13 California Air Resources Board and Office of Environmental Health, "Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values." Available online at: https://ww2.arb.ca.gov/sites/default/files/classic/toxics/healthval/contable09252025.pdf, accessed March 26, 2026.

Human epidemiological studies demonstrate an association between diesel exhaust exposure and increased lung cancer rates in occupational settings.[14]

U.S. EPA's National Scale Assessment uses several types of health hazard information to provide a quantitative "threshold of concern" or a health benchmark concentration at which it is expected that no adverse health effects occur at exposures to that level. Health effects information on carcinogenic, short- and long-term non-carcinogenic endpoints is used to establish selective protective health levels to compare to the modeled exposure levels. Unfortunately, the exposure response data in human studies are considered too uncertain to develop a carcinogenic unit risk for the U.S. EPA's use. There is a Reference Concentration (RfC) that is used as a health benchmark protective of chronic non-carcinogenic health effects, but it is for diesel exhaust and not specifically set for DPM. The RFC for diesel exhaust, which includes DPM, is 5 μg/m.[3,15] This value is similar to, but less than, the National Ambient Air Quality Standard established for fine particulate matter (PM2.5), which is 9 μg/m.[3]

Unlike other TACs, no ambient monitoring data are available for DPM because no routine measurement method currently exists. However, the California Air Resources Board has made preliminary concentration estimates based on a PM exposure method. This method uses the ARB emissions inventory's PM10 database, ambient PM10 monitoring data, and the results from several studies to estimate concentrations of DPM.

Health Studies

As discussed above, vehicle emissions contain a number of substances that can be harmful, including TACs such as benzene and diesel PM. A growing body of scientific evidence shows that living or going to school near roadways with heavy traffic volumes is associated with a number of adverse health effects. These include increased respiratory symptoms, increased risk of heart and lung disease, and elevated mortality rates.[16]

While most of the initial studies were conducted in Europe, as discussed below, a number of research projects conducted in the United States and California found similar results.

---

14 U.S. OSHA, Diesel Exhaust/ Diesel Particulate Matter, January 2013. Available online at: https://www.osha.gov/sites/default/files/publications/OSHA-3590.pdf, accessed March 26, 2026.

15 U.S. Environmental Protection Agency (U.S. EPA), Integrated Risk Information System (IRIS) Chemical Assessment Summary: Diesel engine exhaust, February 28, 2003. Available online at: https://iris.epa.gov/static/pdfs/0642_summary.pdf, accessed March 26, 2026.

16 SCAQMD, *Traffic Pollutants and Health Effects*. May 20, 2005.

Children's Health Study. In 2005, the Children's Health Study, a ten-year study conducted by the University of Southern California School of Medicine, found strong evidence that exposure to pollutants related to vehicle emissions, such as NO2 and elemental carbon (or soot), is linked to a slowing of lung function growth. The researchers concluded that the resulting deficits in lung function are likely permanent and may increase the risk for respiratory and other diseases later in life. The study also found that the children in the study who lived nearest to roadways with heavy traffic, such as freeways, showed increased risk for having asthma.[17]

The East Bay Children's Respiratory Health Study. The East Bay Children's Respiratory Health Study, conducted in 2001, included more than 1,100 students between the 3rd and 5th grades.[18] The study included ten neighborhoods with school sites located upwind and downwind from major roads. The San Francisco Bay area has strong prevailing winds, and this study found that downwind direction and proximity to major roads were important determinants of increased exposure to traffic pollutants. This study found higher concentrations of black carbon, oxides of nitrogen, and nitrogen oxides at schools located downwind from freeways as compared with those schools upwind or farther from major traffic sources.

For children residing at their current address for at least one year, investigators found a modest but significant increase of five to eight percent in bronchitis and asthma symptoms in children in neighborhoods with higher concentrations of traffic pollutants.

California Office of Environmental Health Hazard Assessment (OEHHA) School Study. The OEHHA studied public schools in California, various socioeconomic factors, and their proximity to major roads. The study found that about two percent of all the public schools in California, incorporating about 150,000 students, are within 150 meters (500 feet) of a very busy roadway. The study also provided recommendations on ways to mitigate exposure of students to traffic-related pollutants in the event that a school is located near busy roadways. The related fact sheet includes the following:

- *Where are people exposed to air pollution from nearby traffic?*

  Motor vehicles are part of our everyday lives. We breathe air with higher levels of traffic pollutants while:

  - *Driving in heavy traffic, such as on main city streets and on busy highways/freeways.*
  - *Standing near idling cars, trucks, or buses.*
  - *Spending time at places near roads that have heavy traffic, whether it is at home, school, work, or play. Studies have found that places within 150 meters (500 feet) of main city streets, highways, and freeways generally have higher traffic pollutant levels, especially if*

17 Ibid.

18 CARB, *The East Bay Children's Health Study; Traffic-Related Air Pollution Near Busy Roads*, June 7, 2004.

the location is "downwind" of the road. ("Downwind" means that the wind generally blows from the road toward your location.)

- *If a school is near a street with very heavy traffic, does it mean that children are exposed to high levels of traffic-related air pollution?*

  Not necessarily. The prevailing wind direction strongly affects exposure to air pollution from nearby traffic. Locations that are both near and "downwind" of a freeway tend to have higher levels of traffic pollution compared with locations that tend to be "upwind" of a freeway. ("Downwind" means that the wind generally blows from the road toward your location. "Upwind" means that the wind generally blows away from your location, toward the road.)

Air Quality and Land Use Handbook. The studies described in the above paragraphs, along with other similar studies, were considered by the ARB in the preparation of the publication, Air Quality and Land Use Handbook: A Community Health Perspective.[19] In the discussion of traffic emissions and health effects, the key health findings included the following:

- Reduced lung function in children was associated with traffic density, especially trucks, within 1,000 feet, and the association was strongest within 300 feet;
- Increased asthma hospitalizations were associated with living within 650 feet of heavy traffic and heavy truck volume;
- Asthma symptoms increased with proximity to roadways, and the risk was greatest within 300 feet;
- Asthma and bronchitis symptoms in children were associated with proximity to high levels of traffic in a San Francisco Bay Area community with good overall regional air quality; and
- A San Diego study found increased medical visits in children living within 550 feet of heavy traffic.

The ARB concludes their analysis with the following recommendation: Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.

Childhood Asthma. A study published in 2006 examined the relationship between residence near a freeway and susceptibility to childhood asthma.[20] This study found residence within 75 meters (245 feet) of a major road was associated with an increased risk of lifetime asthma, prevalent asthma, and wheeze. The higher risk of asthma near a major road decreased to background rates at 150 to 200 meters (490 to 655 feet) from the road. In children with a parental history of asthma and in children moving to the residence after two

19 ARB, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005.

20 McConnell, R., K. Berhane, L. Yao, M. Jerrett, F. Lurmann, F. Gilliland, N. Kunzli, J. Gauderman, E. Avol, D. Thomas, and J. Peters, *Traffic, Susceptibility, and Childhood Asthma*, 2006.

years of age, there was no increased risk associated with exposure. A similar pattern of effects was observed with traffic-modeled exposure. These results indicate that residence near a major road is associated with asthma.

Traffic and Lung Development. In February 2007, a study examined the pulmonary function of more than 3,500 children over a period of eight years.[21] The studies were conducted in 12 California communities. Health effects related to distance from freeways were divided into three groups: less than 500 meters (1,640 feet) from the freeway, 500 to 1,500 meters (1,640 to 4,920 feet) from the freeway, and greater than 1,500 meters (4,920 feet) from the freeway.

The study shows that the residential proximity to freeway traffic is associated with substantial deficits in lung-function development in children. The effects were greater for those children who lived within 500 meters (1,640 feet) of a freeway than for those who lived at least 1,500 meters (4,920 feet) from a freeway. Since lung development is nearly complete by age 18 years, an individual with a deficit at this time will probably continue to have less than healthy lung function for the remainder of his or her life. The study did not find any evidence that traffic effects varied depending on background air quality, which suggests that even in an area with low regional pollution, children living near a major roadway are at increased risk of health effects. The results also suggest that children who live close to a freeway in a high-pollution area experience a combination of adverse developmental effects because of both local and regional pollution.

Particulates at a Sacramento School Site. A multi-year study in the Sacramento area, described in a 2006 report, analyzed atmospheric particulate matter at a school site downwind of a busy secondary road.[22] The study was not a health effects study. The study is of interest for the following reasons: (1) The study indicates that exhaust from automobiles may be a greater source of toxic pollutants than diesel exhaust, and (2) a barrier of dense vegetation can be one element in a pollutant mitigation strategy. The study also emphasizes that the most important mitigation for exposure near roadways is the distance from the road to the receptor. Many of the health studies described above are related to residential exposure, with a few studies occurring all or partially at schools; none were at parks. The school studies are considered most relevant to the Hall Property Community Park analysis because they involve children who would be involved in very active play at schools, similar to many activities at the proposed park, and because exposure time at schools is less than full-time residency, although still more than would be anticipated at the park. The East Bay

---

21 Gauderman, W. J., H. Vora, R. McConnell, K. Berhane, F. Gilliland, D. Thomas, F. Lurmann, E. Avol, N. Kunzli, M. Jerrett, and J. Peters, *Effect of Exposure to Traffic on Lung Development from 10 to 18 Years of Age: A Cohort Study*, The Lancet, Volume 369. February 17, 2007.

22 Cahill, T. A., *Vehicular Exposures and Potential Mitigations Downwind of Watt Avenue, Sacramento, CA. Report to The Health Effects Task Force, Breathe California of Sacramento-Emigrant Trails*, 2006.

Children's Respiratory Health Study is of particular interest because it is one of the few studies reporting health effects correlated with upwind or downwind location.

4.3.1.5 Ambient Air Monitoring

CARB has established and maintains a network of sampling stations in conjunction with local air pollution control districts (APCDs) and air quality management districts (AQMDs), private contractors, and the National Park Service. The monitoring station network provides air quality monitoring data, including real-time meteorological data and ambient pollutant levels, as well as historical data. The network in the County consists of 15 monitoring stations. Air quality-monitoring sites located throughout Kern County are shown in **Figure 4.3-1**. **Table 4.3-3, Ambient Air Quality in Kern County, California, and National Standards, presents** the measured ambient pollutant concentrations and the exceedances of state and federal standards that have occurred at the above-mentioned monitoring stations from 2018 through 2020, the most recent years for which data are available.

4.3.2 REGULATORY FRAMEWORK

Air quality in the County is addressed through the efforts of various federal, state, regional, and local government agencies. The agencies primarily responsible for improving the air quality within the County include the U.S. EPA, CARB, San Joaquin Valley Air Pollution Control District (SJVAPCD), Eastern Kern Air Pollution Control District (EKAPCD), and the Kern County Council of Governments (KCCOG). These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies primarily responsible for improving the air quality within Kern County are discussed below, along with their individual responsibilities.

4.3.2.1 Federal

Federal Clean Air Act

Congress passed the first major Clean Air Act (CAA) in 1970 (42 U.S. Code [USC] Sections 7401 et seq.). This Act gives the EPA broad responsibility for regulating motor vehicle emissions from many sources of air pollution, from mobile to stationary sources. Pursuant to the CAA, the U.S. EPA is authorized to regulate air emissions from mobile sources like heavy-duty trucks, agricultural and construction equipment, locomotives, lawn and garden equipment, and marine engines; and stationary sources such as power plants, industrial plants, and other facilities. The CAA sets National Ambient Air Quality Standards (NAAQS) for the six most common air pollutants to protect public health and public welfare. These

Table 4.3-3
Ambient Air Quality in Kern County – California and National Standards

CARB Air Monitoring Station	Number of Days Exceeding CAAQS			Maximum Concentration, State (ppm or μg/m³)			Number of Days Exceeding NAAQS			Maximum Concentration, National (ppm or μg/m³)		
	2022	2023	2024	2022	2023	2024	2022	2023	2024	2022	2023	2024
1-Hour Ozone												
Arvin-Di Giorgio	16	7	12	0.115	0.107	0.108	0	0	0	0.117	0.109	0.109
Bakersfield 5558 California Avenue	0	0	2	0.093	0.088	0.093	0	0	0	0.093	0.087	0.093
Bakersfield Municipal Airport	6	3	7	0.106	0.102	0.103	0	0	0	0.108	0.100	0.102
Edison	19	16	35	0.120	0.116	0.109	1	0	0	0.122	0.114	0.114
Maricopa Stanislaus Street	0	0	0	0.097	0.084	0.084	0	0	0	0.098	0.085	0.085
Mojave CA58 Business	0	0	*	*	*	*	0	0	*	0.091	0.091	*
Oildale 3311 Manor Street	4	0	3	0.101	0.099	0.097	0	0	0	0.106	0.099	0.097
Shafter Walker Street	1	0	1	0.097	0.093	0.093	0	0	0	0.102	0.092	0.094
8-Hour Ozone												
Arvin-Di Giorgio	70	49	65	0.092	0.096	0.091	66	45	65	0.091	0.095	0.091
Bakersfield 5558 California Avenue	7	7	38	0.076	0.079	0.089	4	7	36	0.076	0.079	0.089
Bakersfield Municipal Airport	45	26	50	0.087	0.085	0.095	45	25	47	0.086	0.084	0.095
Edison	63	54	77	0.096	0.092	0.097	61	52	73	0.096	0.091	0.096
Maricopa Stanislaus Street	20	16	11	0.078	0.085	0.079	17	15	9	0.077	0.084	0.079
Mojave CA58 Business	9	0	*	0.076	0.046	*	8	0	*	0.075	0.046	*
Oildale 3311 Manor Street	54	14	47	0.091	0.083	0.089	51	13	47	0.090	0.082	0.088
Shafter Walker Street	27	8	27	0.082	0.080	0.086	21	6	24	0.081	0.079	0.086
CO												
No data.	*	*	*	*	*	*	*	*	*	*	*	*
NOx												
No data.	*	*	*	*	*	*	*	*	*	*	*	*
SOx (sulfur oxides)												
No data.	*	*	*	*	*	*	*	*	*	*	*	*

CARB Air Monitoring Station	Number of Days Exceeding CAAQS			Maximum Concentration, State (ppm or µg/m³)			Number of Days Exceeding NAAQS			Maximum Concentration, National (ppm or µg/m³)		
	2022	2023	2024	2022	2023	2024	2022	2023	2024	2022	2023	2024
PM2.5												
Bakersfield 410 E Planz Road	*	*	*	55.6	58.8	63.5	41	9	15	55.6	58.8	63.5
Bakersfield 5558 California Avenue	*	*	*	58.1	63.7	71.9	35	10	15	58.1	63.7	71.9
Bakersfield-Golden State Highway	*	*	*	58.6	58.0	66.5	36	10	15	58.6	58.0	66.5
Lebec- Beartrap Road	*	*	*	24.5	30.7	28.2	*	*	*	*	*	*
Mojave CA58 Business	*	*	*	10.9	7.4	*	0	*	*	10.9	7.4	*
Ridgecrest 100 West California Avenue	*	*	*	32.3	13.3	38.9	0	0	1	32.3	13.3	38.9
PM10												
Bakersfield 5558 California Avenue	139	109	110	133.0	180.2	130.5	0	1	0	134.7	181.3	129.7
Bakersfield-Golden State Highway	*	*	161	167.0	235.0	142.5	*	*	0	64.7	236.3	141.1
Mojave CA58 Business	*	*	*	110.2	38.3	*	*	*	*	121.5	39.6	*
Oildale 3311 Manor Street	129	105	108	146.3	266.0	115.8	0	1	0	149.4	270.4	118.6
Ridgecrest 100 West California Avenue	11	4	4	381.7	167.8	106.9	2	1	0	416.8	176.5	112.2

Source: CARB. Top 4 Measurements and Days Above the Standard. http://www.arb.ca.gov/adam/index.html, accessed March 2026
** Insufficient data.*

pollutants include particulate matter, ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. For each pollutant, the U.S. EPA designates an area as attainment for meeting the standard or nonattainment for not meeting the standard. A maintenance designation entails an area that was previously designated as nonattainment but is currently designated as attainment. The CAA directs states to develop state implementation plans (SIPs), applicable to appropriate industrial sources in the state, in order to achieve these standards.

The U.S. EPA is responsible for enforcing the federal Clean Air Act and the NAAQS. The U.S. EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The U.S. EPA also maintains jurisdiction over emissions sources outside state waters (outer continental shelf), and establishes various emissions standards for vehicles sold in states other than California. These standards identify levels of air quality for seven criteria pollutants: O_3, CO, NO_2, SO_2, PM10, PM2.5, and lead. The thresholds are considered to be the maximum concentration of ambient (background) air pollutants determined safe to protect the public health and welfare with an adequate margin of safety.

As part of its enforcement responsibilities, the U.S. EPA requires each state with areas that do not meet the federal standards to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the time frame identified in the SIP. Note that an SIP is not a single document, but rather a collection of documents including technical reports, district rules, state regulations, programs, and air quality management plans (AQMPs). AQMPs are developed by the local air districts to ensure local compliance with the aims of the SIP, and become part of the SIP once submitted and approved. Consequently, compliance with the applicable SIP ensures compliance with the AQMP as well.

The 1990 Clean Air Act Amendments were enacted to better protect the public's health and create more efficient methods to lower pollutant emissions. The major areas of improvement addressed in the amendments include NAAQS, air basin designations, automobile/heavy-duty engine emissions, and hazardous air pollutants. The U.S. EPA designated air basins as being in attainment or nonattainment for each of the seven criteria pollutants. Nonattainment air basins for ozone are further ranked (marginal, moderate, serious, severe, or extreme) according to the degree of nonattainment. CARB is required to describe in its SIP how the state will achieve federal standards by specified dates for each air basin that has failed to attain a NAAQS for any criteria pollutant. The extent of a given SIP depends on the severity of the air quality condition within the state or a specific air basin.

In response to rapid population growth and the associated rise in motor vehicle operations, the 1990 Clean Air Act Amendments addressed tailpipe emissions from automobiles, heavy-duty engines, and diesel fuel engines. The amendments established more stringent standards for hydrocarbons, NO_x, and CO emissions in order to reduce the ozone and carbon monoxide levels in heavily populated areas. Under the 1990 Clean Air Act, new fuels were required to be less volatile, contain less sulfur (regarding diesel fuel), and have higher levels of oxygenates (oxygen-containing substances to improve fuel combustion). The U.S. EPA also has regulatory and enforcement jurisdiction over emission sources beyond state waters (outer continental shelf), and those that are under the exclusive authority of the federal government, such as aircraft, locomotives, and interstate trucking.

Due to the lack of a substantial reduction in hazardous emissions under the 1977 Clean Air Act, the 1990 Clean Air Act Amendments listed 189 hazardous air pollutants (HAPs), which are carcinogenic, mutagenic, and/or reproductive toxicants, to be reduced. The 1990 Clean Air Act Amendments impacts major stationary sources and area emissions sources requiring use of Maximum Achievable Control Technology (MACT) to reduce HAP emissions and their associated health impacts.

Transportation Conformity

Transportation conformity is required under Clean Air Act section 176(c) to ensure that federally supported highway and transit project activities are consistent with ("conform to") the purpose and requirements of the SIP. Conformity currently applies to areas that are designated non-attainment, and those re-designated to attainment after 1990 ("maintenance areas" with plans developed under CAA section 175A) for the following transportation-related criteria pollutants: ozone, particulate matter (PM2.5 and PM10), CO, and NO2. Conformity to the purpose of the SIP means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant NAAQS. The transportation conformity regulation is found in 40 CFR part 93.

Conformity also requires reporting on the timely implementation of Transportation Control Measures (TCMs) , thus reinforcing the link between AQMP/SIPs and the transportation planning process. TCMs are expected to be given funding priority and to be implemented on schedule and, in the case of any delays, any obstacles to implementation have been or are being overcome.

4.3.2.2 State

California Clean Air Act

The California Clean Air Act established a legal mandate for air basins to achieve the California ambient air quality standards (CAAQS) by the earliest practical date. These standards apply to the same seven

criteria pollutants as the federal Clean Air Act and also include sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. The state standards are more stringent than the federal standards, and in the case of PM10 and SO_2, far more stringent.

The California Air Resources Board (CARB) oversees air quality planning and control throughout California. It is primarily responsible for ensuring the implementation of the California Clean Air Act, responding to the federal Clean Air Act planning requirements applicable to the state, and regulating emissions from motor vehicles and consumer products within the state. In addition, CARB also sets health-based air quality standards and control measures for toxic air contaminants (TACs). Much of CARB's research goes toward automobile emissions, as they are the primary contributors to air pollution in California. Under the Clean Air Act, CARB has the authority to establish more stringent standards for vehicles sold in California and for various types of equipment available commercially. It also sets fuel specifications to further reduce vehicular emissions.

CARB supervises and supports the regulatory activities of local air quality districts as well as monitors air quality itself. Health and Safety Code Section 39607(e) requires CARB to establish and periodically review area designation criteria. These designation criteria provide the basis for CARB to designate areas of the state as attainment, nonattainment, or unclassified according to state standards. CARB makes area designations for 10 criteria pollutants: O_3, CO, NO_2, SO_2, PM10, PM2.5, sulfates, lead, hydrogen sulfide, and visibility-reducing particles.[23] Air quality of a region is considered to be in attainment of the state standards if the measured ambient air pollutant levels for O_3, CO, NO_2, PM10, PM2.5, SO_2 (1- and 24-hour), and lead are not exceeded, and all other standards are not equaled or exceeded at any time in any consecutive three-year period.

California Air Toxics Program

CARB's Statewide Comprehensive Air Toxics Program was established in the early 1980s. The Toxic Air Contaminant Identification and Control Act created California's program to reduce exposure to air toxics. Under the Toxic Air Contaminant Identification and Control Act, CARB is required to use certain criteria in the prioritization for the identification and control of air toxics. In selecting substances for review, CARB must consider criteria relating to "the risk of harm to public health, amount or potential amount of

[23] California Air Resources Board, "Area Designations Maps (State and National)," https://www.arb.ca.gov/desig/desig.htm. 2017. According to California Health and Safety Code, Section 39608, "state board, in consultation with the districts, shall identify, pursuant to subdivision (e) of Section 39607, and classify each air basin which is in attainment and each air basin which is in nonattainment for any state ambient air quality standard." Section 39607(e) states that the State shall "establish and periodically review criteria for designating an air basin attainment or nonattainment for any state ambient air quality standard set forth in Section 70200 of Title 17 of the California Code of Regulations. California Code of Regulations, Title 17, Section 70200 does not include vinyl chloride; therefore, CARB does not make area designations for vinyl chloride.

emissions, manner of, and exposure to, usage of the substance in California, persistence in the atmosphere, and ambient concentrations in the community" [Health and Safety Code Section 39666(f)]. The Toxic Air Contaminant Identification and Control Act also requires CARB to use available information gathered from the Air Toxics "Hot Spots" Information and Assessment Act program to include in the prioritization of compounds.

California has established a two-step process of risk identification and risk management to address the potential health effects from air toxic substances and protect the public health of Californians. In the first step (identification), CARB and the Office of Environmental Health Hazard Assessment (OEHHA) determine if a substance should be formally identified as a TAC in California. During this process, CARB and the OEHHA staff draft a report that serves as the basis for this determination. CARB staff assesses the potential for human exposure to a substance, and the OEHHA staff evaluates the health effects. After CARB and the OEHHA staff hold several comment periods and workshops, the report is then submitted to an independent, nine-member Scientific Review Panel (SRP), which reviews the report for its scientific accuracy. If the SRP approves the report, they develop specific scientific findings, which are officially submitted to CARB. CARB staff then prepares a hearing notice and draft regulation to formally identify the substance as a TAC. Based on the input from the public and the information gathered from the report, the CARB decides whether to identify a substance as a TAC. In 1993, the California Legislature amended the Toxic Air Contaminant Identification and Control Act by requiring CARB to identify 189 federal hazardous air pollutants as State TACs.

In the second step (risk management), CARB reviews the emission sources of an identified TAC to determine if any regulatory action is necessary to reduce the risk. The analysis includes a review of controls already in place, the available technologies and associated costs for reducing emissions, and the associated risk.

The Air Toxics "Hot Spots" Information and Assessment Act (Health and Safety Code Section 44360) supplements the Toxic Air Contaminant Identification and Control Act by requiring a Statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks. The "Hot Spots" Act also requires facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

The California Office of Environmental Health Hazard Assessment (OEHHA) published a guidance manual in 2015 to assist the preparation of health risk assessments (HRAs) for carcinogenic and non-carcinogenic exposures to air toxics in accordance with the Air Toxics Hot Spots Information and

Assessment Act.[24] The 2015 OEHHA HRA guidelines provide methodologies for assessing various types of environmental exposures to toxic contaminants, including inhalation exposures. The 2015 OEHHA HRA guidance relied upon a comprehensive review of the most up-to-date scientific literature to formulate the recommended exposure estimation methodologies. The OEHHA guidance acknowledges that children are especially susceptible to the effects of toxic air contaminant exposure, and incorporates age sensitivity factors (ASFs) and age-specific daily breathing rates (DBRs) to account for the differences in sensitivity to carcinogens during early life exposure. OEHHA recommends a default ASF of 10 for the age range between the third trimester of pregnancy through two years, and an ASF of three for ages two through 15 years.

OEHHA has created a publicly available mapping tool called CalEnviroScreen, which helps identify California communities that are most affected by many sources of pollution, and where people are often especially vulnerable to pollution's effects. CalEnviroScreen uses environmental, health, and socioeconomic information to produce scores for every census tract in the state. The scores are mapped so that different communities can be compared. An area with a high score is one that experiences a much higher pollution burden than areas with low scores. CalEnviroScreen ranks communities based on data that are available from state and federal government sources. The OEHHA CalEnviroScreen map for the Kern County area is presented in **Figure 4.3-2, CalEnviroScreen 4.0 Results**.

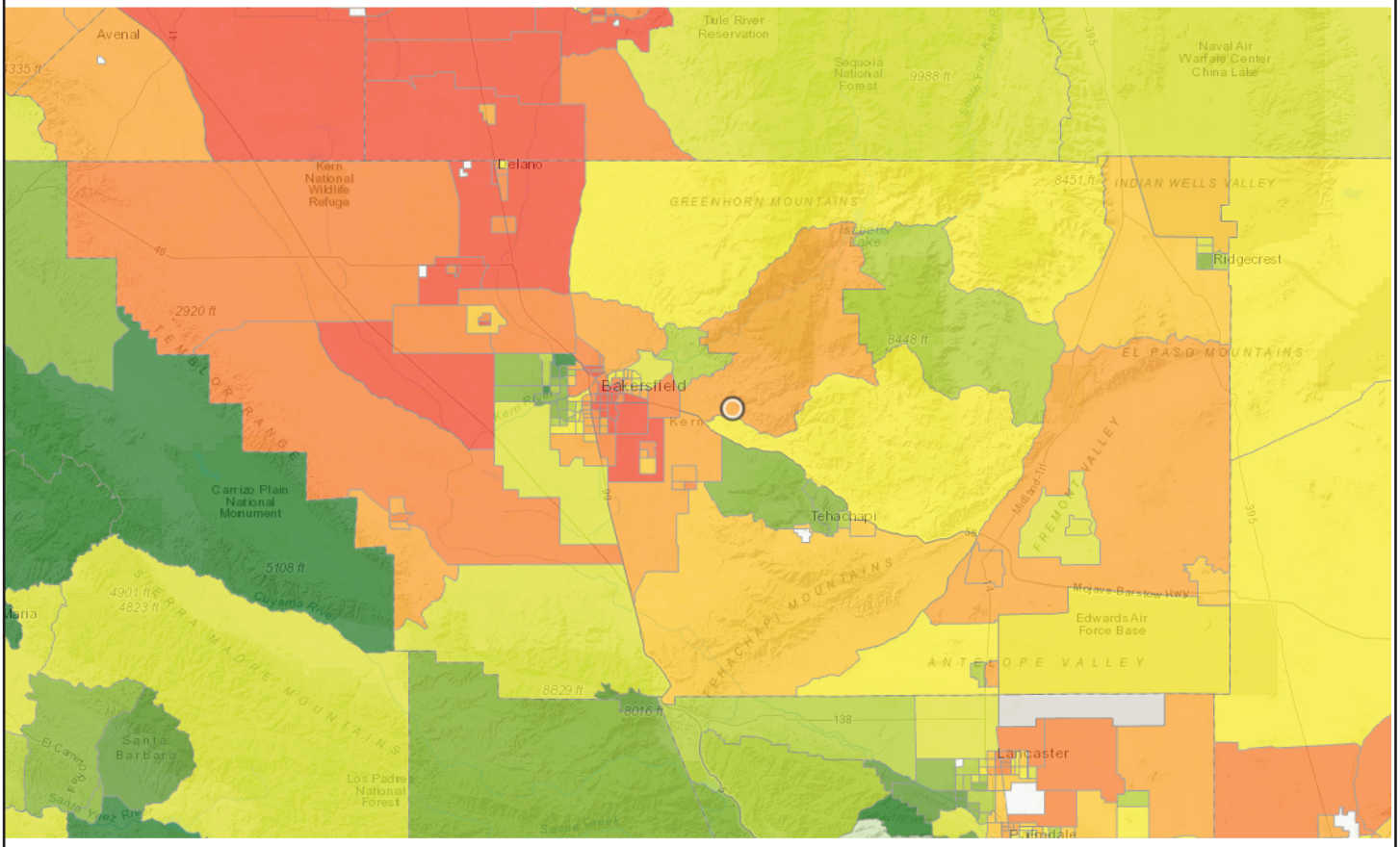
California Diesel Risk Reduction Program

CARB identified particulate emissions from diesel-fueled engines (DPM) TACs in August 1998. Following the identification process, CARB was required by law to determine if there is a need for further control, which led to the risk management phase of the program.

For the risk management phase, CARB formed the Diesel Advisory Committee to assist in the development of a risk management guidance document and a risk reduction plan. With the assistance of the Advisory Committee and its subcommittees, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles and the Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines. The Diesel Advisory Committee approved these documents on September 28, 2000, paving the way for the next step in the regulatory process: the control measure phase.

During the control measure phase, specific Statewide regulations designed to further reduce DPM emissions from diesel-fueled engines and vehicles have been and continue to be evaluated and developed.

24 *OEHHA,* Guidance Manual for Preparation of Health Risk Assessments*, February 2015.*



SOURCE: CalEnviroScreen , 2022

FIGURE **4.3-2**

IMPACT SCIENCES

CalEnviroScreen 4.0 Results

1170.003•04/22

The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce DPM emissions.

California Health and Safety Code

Under the California Health and Safety Code, Division 26 (Air Resources), the ARB is authorized to adopt regulations to protect public health and the environment through the reduction of TACs and other air pollutants with adverse health effects. ARB has promulgated several mobile and stationary source airborne toxic control measures (ATCMs) pursuant to this authority. For instance, effective as of July 2003, ARB approved an ATCM that limits school bus idling and idling at or near schools to only when necessary for safety or operational concerns (13 CCR Chapter 10 Section 2480). This ATCM is intended to reduce diesel PM and other TACs and air pollutants from heavy-duty motor vehicle exhaust. It applies to school buses, transit buses, school activity buses, youth buses, general public paratransit vehicles, and other commercial motor vehicles. This ATCM focuses on reducing public exposure to diesel PM and other TACs, particularly for children riding in and playing near school buses and other commercial motor vehicles, who are disproportionately exposed to pollutants from these sources.[25] In addition, effective February 2005, the ARB approved an ATCM to limit the idling of diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds, regardless of the state or country in which the vehicle is registered (13 CCR Chapter 10 Section 2485).[26]

Toxic Air Contaminant Identification and Control Act

The Toxic Air Contaminant Identification and Control Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) created the California Air Toxics Program in 1983. It established a two-step process of risk identification and risk management to address potential health effects associated with public exposure to toxic substances in the air. In the risk identification step, CARB and the OEHHA determine if a substance should be formally identified, or "listed," as a TAC in California. Since the inception of the program, a number of such substances have been identified and listed. In 1993, legislative amendments were enacted for the program to identify the 189 federal hazardous air pollutants (HAPs) as TACs. In the risk management step, CARB reviews emission sources of an identified TAC to determine whether regulatory action is needed to reduce the risk. Based on results of that review, CARB has promulgated a number of airborne toxic control measures (ATCMs), both for mobile and stationary sources. In 2004, CARB adopted

---

25 CARB. Amended Regulation: Airborne Toxic Control Measure to Limit School Bus Idling at Schools. Available online at: https://ww2.arb.ca.gov/sites/default/files/2021-02/sbidling.pdf, accessed March 27, 2026.

26 CARB. §2485. Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling. Available online at: https://ww3.arb.ca.gov/msprog/truck-idling/13ccr2485_09022016.pdf, accessed March 27, 2026.

an ATCM to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel PM and other TACs. The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given time. These diesel-related measures are critical in reducing the statewide cancer risk and creating healthier communities.[27]

CARB Air Quality and Land Use Handbook

In April 2005, the California Air Resources Board published the Air Quality and Land Use Handbook as an informational and advisory guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. Studies have shown that diesel exhaust and other cancer-causing chemicals emitted from cars and trucks are responsible for much of the overall cancer risk from airborne toxics in California. Reducing diesel particulate emissions is one of CARB's highest public health priorities and the focus of a comprehensive statewide control program that is reducing diesel PM emissions each year. This document highlights the potential health impacts associated with proximity to air pollution sources, so planners explicitly consider this issue in planning processes. The Air Quality and Land Use Handbook includes advisories on where to site new sensitive land uses. Regarding freeways and high-traffic roads, CARB states, "[A]void siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day."[28]

4.3.2.3 Regional

San Joaquin Valley Air Pollution Control District

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within western Kern County and throughout the San Joaquin Valley Air Basin (SJVAB). The SJVAPCD also has responsibility for monitoring air quality and setting and enforcing limits for source emissions. CARB is the agency with the legal responsibility for regulating mobile source emissions. The District is precluded from such activities under state law.

---

27 CARB. 2019. California Air Toxics Program – Background. Available online at: https://ww3.arb.ca.gov/toxics/background.htm, accessed March 27, 2026.

28 California Air Resources Board. 2005. Air Quality and Land Use Handbook: A Community Health Perspective. Available online at: https://ww2.arb.ca.gov/news/air-resources-board-approves-land-use-planning-handbook, accessed March 27, 2026.

The SJVAPCD was formed in mid-1991 and prepared and adopted the San Joaquin Valley Air Quality Attainment Plan (AQAP), dated January 30, 1992, in response to the requirements of the California Clean Air Act (CCAA). The AQAP was recently revised in June 2005. The CCAA requires each non-attainment district to reduce pertinent air contaminants by at least 5 percent per year until new, more stringent state air quality standards are met.

The SJVAPCD currently maintains plans for ozone, PM10, and PM2.5. The air district has developed a new plan for the U.S. EPA's revoked 1-hour ozone standard. Although EPA approved the District's 2004 plan for the 1-hour ozone standard in 2010, EPA withdrew this approval as a result of litigation. The District's 2013 Plan for the Revoked 1-Hour Ozone Standard was approved by the District Governing Board at a public hearing on September 19, 2013.

The most recent 8-hour ozone plan was adopted on December 15, 2022.[29] The plan addresses federal regulations about the 2015 8-hour ozone NAAQS. This plan shows that the regulations are met and exceed Clean Air Act standards. The air district has achieved the NAAQS for PM10, but produced a maintenance plan in 2006, which remains in effect. On June 24, 2024, CARB approved the air district's 2024 Plan for the 2012 PM2.5 Standard. The plan sets out to fulfill the remaining CAA requirements, from the initial 2012 PM2.5 Plan, including the final modeling analysis, attainment strategy, and emission reduction commitments, reasonable further progress/quantitative milestones, and contingency measures. strategy to attain the federal 2012 PM2.5 federal annual air quality standard of 12 $\mu g/m^3$ by 2030.[30]

Regulation VIII Fugitive PM10 Prohibitions

The SJVAPCD Rules and Regulations include Regulation VIII Fugitive PM10 Prohibitions, which was developed to reduce ambient concentrations of fine particulate matter (PM10) by developing rules to control specified anthropogenic fugitive dust sources. The rules were developed pursuant to the U.S. EPA guidance for Serious PM10 Nonattainment Areas. Regulation VIII has seven rules aimed at controlling fugitive dust from specific sources, which include construction and other earthmoving activities, carryout and trackout, open areas, paved and unpaved roads, and unpaved equipment traffic areas. In most cases, the rules primarily aim to reduce the speed and amount of traffic traveling over unstabilized dirt or

---

29 San Joaquin Valley Air Pollution Control District, 2022 Ozone Plan for the 2015 8-Hour Ozone Standard, adopted December 15, 2022. Available online at: https://www.valleyair.org/media/q55posm0/0000-2022-plan-for-the-2015-8-hour-ozone-standard.pdf, accessed March 27, 2026.

30 San Joaquin Valley Air Pollution Control District, 2024 Plan for the 2012 PM2.5 Standard, adopted June 20, 2024. Available online at: https://www.valleyair.org/rules-and-planning/air-quality-plans/particulate-matter-plans/2024-plan-for-the-2012-pm25-standard/, accessed March 27, 2026.

otherwise dusty surfaces. This is generally done by either reducing the amount of dusty areas or by restricting traffic in dusty areas.

Eastern Kern Air Pollution Control District

The EKAPCD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within the eastern portion of Kern County in the Mojave Desert Air Basin (MDAB). As stated above, the District also has responsibility for monitoring air quality and setting and enforcing limits for source emissions.

The EKAPCD has primary responsibility for regulating stationary sources of air pollution situated within its jurisdictional boundaries. To this end, the EKAPCD implements air quality programs required by state and federal mandates, enforces rules and regulations based on air pollution laws, and educates businesses and residents about their role in protecting air quality. The EKAPCD is also responsible for managing and permitting existing, new, and modified sources of air emissions within the Mojave Desert portion of Kern County, and it also establishes rules and regulations to ensure compliance with local, state, and federal air quality regulations.

As required by the federal Clean Air Act (CAA) and CCAA, air basins or portions thereof have been classified as either "attainment" or "nonattainment" for each criteria air pollutant based on whether or not the standards have been achieved. Jurisdictions of nonattainment areas are also required to prepare an air quality management plan (AQMP) that includes strategies for achieving attainment. On May 4, 2023, EKAPCD adopted the 2023 Ozone Attainment Plan for the 2008 & 2015, 8-Hour Ozone National Ambient Air Quality Standards (NAAQS). On July 7, 2021, the U.S. EPA reclassified the EKAPCD's nonattainment area to Severe nonattainment pursuant to the 2008 Ozone NAAQS, and is now required to attain by July 2027. Modeling would indicate that the EKAPCD would not attain the 2015, Ozone NAAQS (70 ppb) by the Serious nonattainment date of 2027, but could attain it by 2033 (attainment date for Severe). On May 15, 2021, the EKAPCD requested CARB submit documentation to EPA to reclassify the EKAPCD's nonattainment area from Serious to Severe pursuant to the 2008 Ozone NAAQS. The 2023 Ozone Attainment Plan for the 2008 & 2015, 8-Hour Ozone National Ambient Air Quality Standards (NAAQS) addresses all required plan elements, emissions reductions, and control measures necessary to demonstrate attainment of the 2015 Ozone NAAQS by 2033.[31]

---

31 Eastern Kern Air Pollution Control District, 2023 Ozone Attainment Plan for the 2008 & 2015, 8-Hour Ozone National Ambient Air Quality Standards (NAAQS), adopted May 4, 2023. Available online at: http://www.kernair.org/Documents/Rules/2023%20Attainment%20Plan/EKAPCD_2023_Ozone_Plan_Adopted_5-4-23.pdf, accessed March 27, 2026.

4.3.2.4 Local

The goals, policies, and implementation measures in the Kern County General Plan that are applicable to air quality as related to the proposed projects are provided below.

Kern County General Plan

- The air quality implications of new discretionary land use proposals shall be considered in the approval of major developments. Special emphasis would be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals.
- In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision-making body, as part of its deliberations, would ensure that:

  (a) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and

  (b) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.

- The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the SJVAPCD and the EKAPCD on ministerial permits.
- The County shall support air districts' efforts to reduce PM10 and PM2.5 emissions.
- Kern County shall continue to work with the SJVAPCD and the EKAPCD toward air quality attainment with federal, state, and local standards.
- All discretionary permits shall be referred to the appropriate air district for review and comment.
- Work with transit providers to develop long-range transit strategies based on future and anticipated land use plans.
- Maintain a minimum Level of Service (LOS) D.

Metropolitan Bakersfield General Plan

- Comply with and promote SJVUAPCD control measures regarding ROG. Such measures are focused on: (a) steam-driven well vents, (b) Pseudo-cyclic wells, (c) natural gas processing plant fugitives, (d) heavy oil test stations, (e) light oil production fugitives, (f) refinery pumps and compressors, and (g) vehicle inspection and maintenance

- Encourage land uses and land use practices that do not contribute significantly to air quality degradation

- Require dust abatement measures during significant grading and construction operations

- Consider air pollution impacts when evaluating discretionary permits for land use proposals. Considerations should include:

  a) Alternative access routes to reduce traffic congestion.

  b) Development phasing to match road capacities.

  c) Buffers including increased vegetation to increase emission dispersion and reduce impacts of gaseous or particulate matter on sensitive uses.

- Consider the location of sensitive receptors, such as schools, hospitals, and housing developments, when locating industrial uses to minimize the impact of industrial sources of air pollution

- Participate in alternative fuel programs

- Participate in regional air quality studies and comprehensive programs for air pollution reduction

- Promote and assist in the development and implementation of the San Joaquin Valleywide Air Quality Study

- Promote public education regarding air quality issues and alternative transportation (I-4).

- Implement the Transportation System Management Program (July 1984) for Metropolitan Bakersfield to improve traffic flow, reduce vehicle trips, and increase street capacity

- Improve the capacity of the existing road system through improved signalization, more right turn lanes, and traffic control systems

- Encourage the use of mass transit, carpooling, and other transportation options to reduce vehicle miles traveled
- Consider establishing priority parking areas for carpoolers in projects with relatively large numbers of employees to reduce vehicle miles traveled and improve air quality
- Establish park and ride facilities to encourage carpooling and the use of mass transit
- Promote the use of bicycles by providing attractive bicycle paths and requiring the provision of storage facilities in commercial and industrial projects
- Cooperate with Golden Empire Transit and Kern Regional Transit to provide a comprehensive mass transit system for Bakersfield; require large-scale new development to provide related improvements, such as bus stop shelters and turnouts
- Continue to participate in the vehicle smog-check and maintenance programs
- Encourage walking for short-distance trips through the creation of pedestrian-friendly sidewalks and street crossings
- Promote a pattern of land uses that locates residential uses in close proximity to employment and commercial services to minimize vehicular travel
- Provide the opportunity for the development of residential units in concert with commercial uses
- Disperse urban service centers (libraries, post offices, social services, etc.) to minimize vehicle trips and trip miles traveled and concomitant air pollutants

4.3.3 ENVIRONMENTAL IMPACTS

4.3.3.1 Thresholds of Significance

The following thresholds for determining the significance of impacts related to air quality are derived from the environmental checklist form contained in Appendix G of the most recent update of the *California Environmental Quality Act (CEQA) Guidelines*. The thresholds are tailored to the potential air quality impacts resulting from implementation of the 2026 RTP. Impacts related to air quality are considered significant if the proposed project would meet the following criteria:

- Conflict with or obstruct implementation of the applicable air quality plan;

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

State CEQA Guidelines Section 15064.7 indicates that, when available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make determinations of significance.

4.3.3.2 Methodology

This section summarizes the methodology used to evaluate the expected impacts of implementation of the 2026 RTP on air quality.

Short-Term Emissions Methodology

For construction impacts, the pollutant of greatest concern to the District is PM10. The SJVAPCD's approach to CEQA analyses of construction PM10 impacts is to require implementation of effective and comprehensive control measures in addition to quantification of emissions. Because it is not feasible to predict construction emissions from all of the future transportation and land use projects included in the RTP, the construction analysis will focus on the comprehensive control measures for each proposed project. PM10 emitted during construction can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors, making quantification difficult. Despite this variability in emissions, compliance with Regulation VIII and implementation of appropriate mitigation measures to control respirable PM10 emissions are considered by the SJVAPCD to be sufficient to render a project's construction-related PM10 impacts less-than-

significant.[32] The SJVAPCD GAMAQI contains a list of feasible control measures for construction-related PM10 emissions.[33]

Long-Term Emissions Methodology

The methodology for determining the significance of air quality impacts compares existing conditions to the 2026 RTP conditions in the year 2050, as required in CEQA Section 15126.2(a). The project's long-term impacts on air quality are considered significant if the project results in mobile source emissions that significantly exceed existing levels. In this case, the pollutants of concern are ozone precursors (NOx and ROG) and fine particulate matter, as these are the primary pollutants associated with vehicle transportation.

Projected air emissions from mobile sources were calculated using EMFAC 2021 emissions factors and multiplied by VMT.[34] The projected VMT was revised by applying off-model adjustments to capture reductions in VMT not reflected in the transportation modeling. This adjusted VMT was then entered into the EMFAC 2014 model. The EMFAC emissions factors are established by the California Air Resources Board and accommodate certain mobility assumptions (e.g., vehicle speed, delay times, average trip lengths, and total travel time). Projected vehicle emissions on the Kern COG transportation network for the year 2049 under the 2026 RTP were compared with State Implementation Plan (SIP) emissions budgets. If countywide mobile source ROG or NOx emissions associated with the RTP do not significantly exceed the SIP budgets, impacts to long-term air quality from mobile source emissions are not considered significant.

Implementation of the RTP could create both short-term and long-term impacts on air quality. Short-term air quality impacts would be generated during construction of the capital improvements listed in the 2026 RTP, as well as future development facilitated by the SCS land use pattern. Long-term emissions would be generated by the on-road vehicles, which would utilize the transportation improvements, and the land uses proposed, as well as from area and stationary sources, including energy use, associated with new development, and off-road vehicles.

---

32 San Joaquin Valley Air Pollution Control District, Current District Rules and Regulations. Available online at: https://www.valleyair.org/rules-and-planning/current-district-rules-and-regulations/, accessed March 27, 2026.

33 San Joaquin Valley Air Pollution Control District, Guidance for Assessing and Mitigating Air Quality Impacts, March 19, 2015. Available online at: https://www.valleyair.org/media/g4nl3p0g/gamaqi.pdf, accessed March 27, 2026.

34 Regulations governing preparation of Regional Transportation Plans guide the use of modeling. EMFAC2014 was used for the 2026 RTP/SC. While EMFAC2017 could have been used, ARB requested the use of EMFAC2014 to allow comparison with prior RTPs.

Determination of Significance

The methodology for determining the significance of air quality impacts compares existing air quality to the expected future air quality with the 2026 RTP. The criteria above were applied to compare the criteria pollutant emissions generated by the expected future (2049) Plan conditions to the significance criteria.

Implementation of the 2026 RTP would generate criteria pollutant emissions in Kern. The analysis of these impacts is programmatic at the regional level. 2026 RTP would result in air quality impacts as a result of criteria pollutant emissions generated by construction of transportation projects and development and operation of the regional transportation system. Project-specific impacts vary, and appropriate mitigation measures would need to be developed on a project-by-project basis, as appropriate.

Approach to Mitigation

As discussed in **Chapter 1.0, Introduction**, Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

4.3.3.3 Impacts and Mitigation Measures

Each applicable threshold of significance is listed below, followed by analysis of the significance of any potential impacts and the identification of mitigation measures that would lessen or avoid potential impacts. Finally, the significance of potential impacts after implementation of all identified mitigation measures is presented.

Impact AIR-1 Conflict with or obstruct implementation of the applicable air quality plan.

Regional Impacts

The 2026 RTP would result in a less than significant impact on air quality related to the potential to conflict with or obstruct implementation of the adopted SIPs/AQMPs/Attainment Plans because the projected long-term emissions are in alignment with the local SIPs/AQMPs as demonstrated in the transportation conformity analysis.[35] The emissions resulting from the Plan are within the applicable emissions budgets as stated in the SIPs/AQMPs for each nonattainment or maintenance area for all milestone, attainment, and planning horizon years. Therefore, impacts would be less than significant.

Transit Priority Areas

Consistency with air quality management plans or a SIP is a regional issue and would not be relevant to TPAs. However, since the region is in conformity and a primary strategy of the RTP is to focus development in TPAs, development within TPAs is generally consistent with the conformity determination.

Level of Significance Before Mitigation

Less than significant at the regional and TPA levels.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less than significant at the regional and TPA levels.

Impact AIR-2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Regional Impacts

At the regional level, criteria pollutant emissions would be mostly reduced compared to existing conditions, and the region would meet air quality standards. Over the lifetime of the Plan, various transportation and development projects would be constructed. Construction activities would result in ongoing emissions of air pollutants, including ROG, NOx, PM10, PM2.5, and fugitive dust. Emissions

35 Kern COG's most recent Air Quality Conformity Analysis is located on the Kern COG website at https://www.kerncog.org/conformity/

associated with construction of each individual project are generally short-term and are limited to the project construction phase.

On-road mobile-source emissions include passenger vehicles, light-duty trucks, medium trucks, and heavy-duty trucks. Off-road vehicles refer to locomotives, ocean-going vessels, off-highway recreational vehicles, cargo handling equipment, farm equipment, and aircraft. CARB identifies emissions standards and is responsible for overseeing AQMPs. Stationary sources include both point and area sources. Point stationary sources include permitted facilities, such as power plants and refineries, with one or more emission sources. Area stationary sources include small emission sources, such as residential water heaters, architectural coatings, consumer products, and smaller permitted sources. In general, total emissions from stationary sources are expected to decrease faster than the sources of the emissions increase, as these are increasingly regulated.

Emissions of criteria pollutants from mobile sources would be affected by implementation of the 2026 RTP. In order to analyze the net impact of implementation, existing year (2024) emissions were compared to buildout year (2049) emissions for the 2026 RTP and No Project scenario (for informational purposes). The emissions reported are for all mobile sources in Kern County. Results of modeling are presented in **Table 4.3-4, Kern County Criteria Pollutant Emissions from Mobile Sources**. As shown, there are reductions of ROG, NOx, CO, and Sox. These would be beneficial impacts. Emissions of PM10 and PM2.5 show an increase under the 2026 RTP scenario (the increase would be less than under the No Project scenario).

Table 4.3-4
Kern County Criteria Pollutant Emissions from Mobile Sources (Tons/Day)

Scenario	ROG	NOx	CO	PM10	PM2.5	SOx
Existing 2024	4.15	13.18	34.61	1.00	0.42	0.14
2026 RTP 2049	1.90	10.92	17.74	1.14	0.45	0.11
2026 RTP Net	-2.25	-2.26	-16.87	**0.14**	**0.03**	-0.03
No Project 2049	2.18	12.56	20.94	1.32	0.52	0.13
No Project Net	-1.97	-0.62	-13.67	**0.32**	**0.10**	-0.01

Source: Kern COG 2026

The increase in PM10 emissions is approximately 13 percent, while the increase in PM2.5 is seven percent. As VMT increases, so does entrained roadway PM10 and PM2.5 (e.g., dust from brake and tire wear). The 2026 RTP would increase VMT when compared to existing conditions, and therefore, entrained roadway PM10 and PM2.5 would increase. However, stringent emissions controls would substantially reduce

exhaust emissions of PM10, PM2.5, and DPM, which would improve overall regional health when compared to existing conditions (see also more detailed discussion of air toxics below). In addition, increased dust from increased activity in the region could increase the number of cases of Valley Fever.

A conformity analysis was prepared for the 2026 RTP that analyzes emissions of ozone precursors (ROG and NOx), CO, PM10, and PM2.5 compared to the approved emissions budgets for mobile sources in Kern County. The conformity analysis found that emissions of all pollutants passed the applicable conformity tests and that the County is therefore in conformity with the SIPs. SIPs, as described above under **Section 4.3.2, Regulatory Framework**, are regional plans to attain the federal standards. This indicates that the County is not exceeding state or federal emissions limits designed to achieve ambient air quality standards for any pollutants, including PM10 and PM2.5. In sum, while there is an increase in PM10 for the County, it is not a substantial increase and is not expected to inhibit the County's progress toward attainment status for PM10; therefore, this impact is considered less than significant.

Transit Priority Areas

Long-term emissions contribute to impacts within an air basin rather than in any specific location, such as TPAs. As such, emissions of criteria pollutants result in regional rather than local impacts. DPM is found in diesel exhaust and consequently in higher concentrations adjacent to areas with significant truck traffic, such as ports, freeways, and distribution centers. An in-depth analysis of DPM is described below under **Impact AIR-3.** In this way, impacts in a TPA are no different from impacts on a regional basis. Further, focusing growth in TPAs would encourage the use of mass transit and other forms of efficient transportation that would reduce criteria pollutant emissions and improve air quality in the air basin, including in the TPAs. The impact would be less than significant.

Level of Significance Before Mitigation

Less than significant at the regional and TPA levels.

Mitigation Measures

No mitigation required.

Level of Significance After Mitigation

Less than significant at the regional and TPA levels.

Impact AIR-3 **Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.**

Regional Impacts

As noted in **Table 4.3-2, National and California Ambient Air Quality Standard Designations for Kern County**, the Kern region is currently in nonattainment for PM2.5, PM10, and ozone. Implementation of the 2026 RTP would result in the construction of roadways and other transportation projects, as well as general construction, as part of regional growth. Construction activities occur in the region currently; it would be speculative to try to determine how the rate of construction could change as compared to existing conditions. Construction activities would result in short-term emissions of air pollutants, including ROG, NOx, PM10, PM2.5, and fugitive dust. The sources associated with these emissions include construction equipment, employee and vendor vehicles, demolition, grading and other ground-disturbing activities, application of paint and other coatings, paving, and others. As noted above, these sources of emissions are subject to increasing regulation and are expected to decline. The level of emissions is generally proportional to the size of the construction project, with larger projects typically resulting in larger emissions during construction. Further, it is likely that more than one project would be under construction at a time, resulting in greater emissions.

Neither of the air districts in Kern County has numerical significance thresholds specific to the construction of projects taking place in their respective jurisdictions. The EKAPCD does not address construction impacts in its published guidance for CEQA review, but does provide a suggested list of mitigation measures for construction sites in eastern Kern County. These measures are primarily aimed at reducing fugitive dust, and are similar to measures provided by the SJVAPCD. The SJVAPCD does not provide numerical thresholds, but does require the implementation of effective and comprehensive PM10 control measures. Consequently, the SJVAPCD indicates that projects complying with district Regulation VIII – Fugitive PM10 Prohibitions would have a less than significant impact on local air quality. The SJVAPCD also indicates that large construction projects may exceed the annual significance threshold for NOx of 10 tons per year, and to contact the district for recommendations for analysis of large construction projects.

Construction projects (both transportation and development) associated with the 2026 RTP would implement all feasible dust control measures required by air districts, and therefore would have a less than significant impact with regard to PM10 and PM2.5 emissions. However, given the unknown scale of construction over the period of the 2022 RTP, it is possible that NOx emissions (an ozone precursor) could exceed the annual threshold in the SJVAPCD jurisdiction. Consequently, it is conservatively assumed that cumulative emissions resulting from construction would have a significant impact. In addition, increased

dust from construction activities could increase the number of cases of Valley Fever. As such, mitigation is required. **Mitigation Measure MM AIR-1** below would mitigate these impacts**.**

Transit Priority Areas

Construction would take place in the TPAs, potentially on a large scale. Therefore, it is possible that construction emissions in the TPAs could exceed the SJVAPCD annual NOx threshold, as discussed above for regional impacts. This impact is therefore considered to be significant. As such, mitigation is required. **Mitigation Measure MM AIR-1** below would mitigate these impacts**.**

Level of Significance Before Mitigation

Significant at the regional and TPA levels.

Mitigation Measure

MM AIR-1: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to require contractors to assemble a comprehensive inventory list (i.e., make, model, engine year, horsepower, emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) that could be used an aggregate of 40 or more hours for the construction project and apply the following:

- Prepare a plan for approval by the applicable air district demonstrating that the heavy-duty (equal to or greater than 50 horsepower) off-road equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at time of construction. A Construction Mitigation Calculator (MS Excel) may be downloaded from the Sacramento Metropolitan Air Quality Management District (SMAQMD) web site to perform the fleet average evaluation http://www.airquality.org/ceqa/index.shtml. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology (Carl Moyer Guidelines), after-treatment products, voluntary offsite mitigation projects, provide funds for air district off-site mitigation projects, and/or other options as they become available. The air district should be contacted to discuss alternative measures.

- Ensure that all construction equipment is properly tuned and maintained.

- Minimize idling time to 5 minutes – saves fuel and reduces emissions.
- Provide an operational water truck on-site at all times. Apply water to control dust as needed to prevent dust impacts off-site.
- Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.
- Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.
- As appropriate require that portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, obtain California Air Resources Board (ARB) Portable Equipment Registration with the state or a local district permit. Arrange appropriate consultations with the ARB or the District to determine registration and permitting requirements prior to equipment operation at the site.

Level of Significance After Mitigation

Mitigation Measure MM AIR-1 would reduce potential impacts related to short-term criteria pollutants. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts could remain significant and unavoidable.

Health Implications

Health Implications associated with PM10 (and PM2.5) include worsening of symptoms in sensitive patients with respiratory disease and excess seasonal declines in pulmonary function, especially in children. This can include an increase in the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as lead, sulfates, and nitrates can cause lung damage directly. These substances can be absorbed into the blood stream and cause damage elsewhere in the body. These substances can transport absorbed gases, such as chlorides or ammonium, into the lungs and cause injury. Whereas PM10 tends to collect in the upper portion of the respiratory system, PM2.5 is much smaller and it can penetrate deeper

into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility. **Table 4.3-4, Kern County Criteria Pollutant Emissions from Mobile Sources**, above, indicates that the 2026 RTP will lead to an increase in PM10 emissions, which could worsen the health concerns listed above or result in Air Quality Index values that are unhealthy for sensitive groups and other populations. On unhealthy days, persons are recommended to avoid both prolonged and heavy-exertion outdoor activities.[36]

Both ozone and particulate matter are known to have negative public health impacts, especially for sensitive populations, like children, the elderly, and those with respiratory or cardiovascular health problems. The 2026 RTP includes an increase in active transportation facilities in communities, which would provide opportunities for physical activity, which has been shown to improve chronic disease rates.

Impact AIR-4 Expose sensitive receptors to substantial pollutant concentrations

Regional Impacts

The 2026 RTP would increase exposure of sensitive receptors to pollution concentrations. DPM is part of diesel exhaust and is often found in higher concentrations in areas with significant truck traffic, such as ports, freeways, and distribution centers. However, other areas, such as industrial sites, can also result in high local concentrations of DPM. DPM is primarily very fine particles, with more than 90 percent of DPM being less than 1 micron in diameter. Since particles less than 2.5 microns in diameter are categorized as PM2.5, this means that over 90 percent of DPM is in the form of PM2.5, with less than 10 percent existing as PM10. PM10 emissions from mobile sources mainly result from tire wear, brake dust, and road dust being re-entrained rather than fuel combustion; therefore, PM2.5 emissions will be used as a proxy for DPM emissions in this analysis. As shown in **Table 4.3-4** above, emissions of PM2.5 for all mobile sources would decrease slightly with the 2026 RTP. In order to more closely evaluate DPM emissions, PM2.5 emissions specifically from heavy-duty diesel vehicles were estimated. These emissions under existing conditions, as compared to the 2026 RTP Plan and No Project Alternative, are shown in **Table 4.3-5, PM2.5 Emissions from Heavy Duty Diesel Vehicles.**

As a result of increasing truck traffic including traffic that only passes through Kern County, PM2.5 emissions from heavy-duty diesel vehicles in 2049 would be greater than the emissions under existing conditions for the 2026 RTP. (2026 RTP emissions would however be less than the No Project alternative.). CARB has several programs and regulations in place to reduce DPM emissions statewide. This includes enforced retrofit of diesel particulate filters, replacement of older trucks and buses, requirements for lower

36 U.S. Environmental Protection Agency, Air Quality Index, A Guide to Air Quality and Your Health, February 2014, https://www.airnow.gov/sites/default/files/2018-04/aqi_brochure_02_14_0.pdf, accessed April 8, 2026.

emissions on new diesel vehicles, inspection programs, idling restrictions, and other programs for marine and off-road diesel vehicles. These programs and regulations would reduce DPM (and PM 2.5) emissions over the period of the 2026 RTP.

Table 4.3-5
PM2.5 Emissions from Heavy Duty Diesel Vehicles (tons/day)

Existing 2024	2049 RTP Plan	2049 No Project
0.278	0.359	0.378

Source: Kern COG 2026

In addition to increasing DPM emissions in the future, RTP improvements could bring sources of DPM closer to some sensitive receptors through construction of new facilities or widened roadways in proximity to sensitive receptors, and/or sensitive receptors could be constructed close to DPM sources, all of which could increase exposure of individual sensitive receptors.

To provide a qualitative measure of this potential impact, highways in Kern County were given an Air Quality Index (AQI), based on three factors: (1) average daily traffic (2) percentage of truck traffic and (3) level of service (which is a measure of traffic delays). A "high" index indicates that a roadway has a relatively high amount of traffic and percentage of trucks with a low level of service. A "low" index reflects a relatively low amount of traffic with fewer trucks, and a "high level of service. "Medium" would be somewhere between high and low. In this way, a "high" index qualitatively shows a higher health risk as well, since roadways with a 'high' index would tend to have higher DPM concentrations due to the higher number of trucks and lower traffic speeds.

Table 4.3-6, Sensitive Receptors Within 0.25 miles of Highways by AQI Ranking, provides the sensitive receptors, including the number of schools, hospitals, and households within a quarter mile of each highway, sorted by AQI.

Table 4.3-6 shows that in 2049, under the 2026 RTP, the number of sensitive receptors (hospitals and schools, residences) within a quarter mile of a high AQI highway segment would increase compared to the existing condition. However, as noted above, PM2.5 would in general decrease, so while there could be more truck traffic on local highways, emissions from these vehicles would decrease. As discussed above, according to an FHWA analysis, with an increase in vehicle miles traveled of 102 percent, reductions of 60

percent to 91 percent in MSATs are projected from 2010 to 2050.[37] While more people may be located in proximity to heavily traveled roadways, the risks from most of these roadways would be reduced substantially compared to existing conditions because of emissions controls.

Table 4.3-6
Sensitive Receptors Within 0.25 miles of Highways by AQI Ranking

AQI Rating	Existing 2024			2049 Plan			2049 No Project		
	Schools	Hospitals	Households	Schools	Hospitals	Households	Schools	Hospitals	Households
High	15	1	15,311	17	2	21,936	17	2	21,983
Medium	21	2	12,480	24	1	17,620	23	1	14,005
Low	22	2	20,966	17	2	17,694	18	2	21,581
Total	58	5	48,757	58	5	57,250	58	5	57,569

The Southern California Association of Governments (SCAG) performed a health screening risk assessment[38] of freeway corridors in the SCAG region as part of the Connect SoCal Plan. The assessment analyzed traffic on sixteen freeway corridor segments in the SCAG region. Each of these corridors was projected to see increased vehicle traffic in 2050 compared to 2019. Despite this, cancer risks were calculated to decrease substantially between 2019 and 2050 in all scenarios for residents and workers along the freeway corridors.

Similarly, freeway volumes are expected to increase along most segments in Kern County. Kern COG conducted an analysis of vehicle traffic along freeway segments in Kern County for 2023 and 2049. The highest segment was along SR99, where traffic volumes are projected to increase from 52,597 vehicles per day in 2023 to 60,828 vehicles per day in 2049, for an increase of 8,231 or 16 percent.[39] The most similar segment in the SCAG study was Interstate 10 (I-10) in Riverside County which carries a fairly high proportion of truck traffic and was projected to increase from 112,848 (99,500 for Light Medium vehicles and 13,348 for heavy duty vehicles) VMT per day in 2019 to 145,031 VMT per day (121,703 for light medium

37 FHWA, Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA - Figure 1. Available online at: https://www.fhwa.dot.gov/Environment/air_quality/air_toxics/policy_and_guidance/nmsatetrends.cfm, accessed April 11, 2026.

38 Southern California Association of Governments, Connect SoCal 2024 RTP, Connect SoCal 2024, Program EIR, 3.3 Air Quality, December 2023. Available online at: https://scag.ca.gov/sites/default/files/2024-05/23-3052-peir-2024-draft-3-3-air-quality.pdf, accessed April 8, 2026.

39 Kern Council of Governments. *Summary of updates to the Kern COG VMIP-3 travel demand model*, February 12, 2026. Available online at: https://www.kerncog.org/wp-content/uploads/2026/02/KernCOG-model-update-doc.20260212.pdf, accessed April 8, 2026.

traffic and 23,328 for heavy duty traffic) in 2050 (an increase of 32,183 VMT, or 29 percent).[40] The SCAG study found that residential cancer risk along I-10 would decrease from 87 additional cases in a million in 2019 to 38 additional cases in 2050 under the Connect SoCal Plan over 30 years. While it is not possible to say that results along SR99 in Kern County would be identical, the similar vehicle counts and years of analysis suggest that the results should be similar as well. Given the dramatic reductions in cancer risk along I-10, it is likely that similar reductions would occur along SR99 as well. Further, other freeway segments would likely see reductions regardless of increased traffic, as did all segments and corridors assessed in the SCAG study.

Another substantial source of TACs is stationary sources, such as diesel generators, industrial processes, operation of oil fields, and dry cleaners. The 2026 RTP does not have any direct effect on these types of sources, nor is there any available data on possible new stationary sources that would be in operation in 2049. As such, it is difficult to determine what contribution these sources would have to sensitive receptors, and how the 2026 RTP would influence any such contribution. While it is anticipated that sources of TACs would likely increase, it is also anticipated that emission control technology and regulations would increase, and therefore, given the lack of data regarding industrial and other stationary sources of TACs, it is not possible to anticipate whether these sources would result in increased health risks in 2049 compared to existing conditions.

Localized concentrations of TACs generally depend on two factors: meteorological conditions and TAC emissions. Meteorological conditions can act to either concentrate or disperse pollutants depending on the particulars of airflow in the area. Airflow is affected by temperature, geography, pressure gradients, and other factors. Airflow patterns can change dramatically on a short-term basis, but averaged over the long term, they are fairly consistent, with exceptions for large-scale changes such as occur during El Niño events. However, there is a general consensus that climate change will likely have an impact on meteorological patterns. This impact is not well understood, and currently, there is no way to account for climate change effects on local or regional meteorology. Consequently, until more studies and data are available, it is assumed that meteorological conditions in Kern County will remain essentially unchanged over the period of the 2026 RTP.

Emissions of TACs can come from a variety of sources such as truck traffic, stationary combustion sources, industrial processes, dry cleaning, retail service stations, and many others. The 2026 RTP does not specifically address stationary sources. However, an increase in regional population and commerce may result in increased TAC emissions. In addition, rail traffic would increase under the 2026 RTP, which would

40 Ibid.

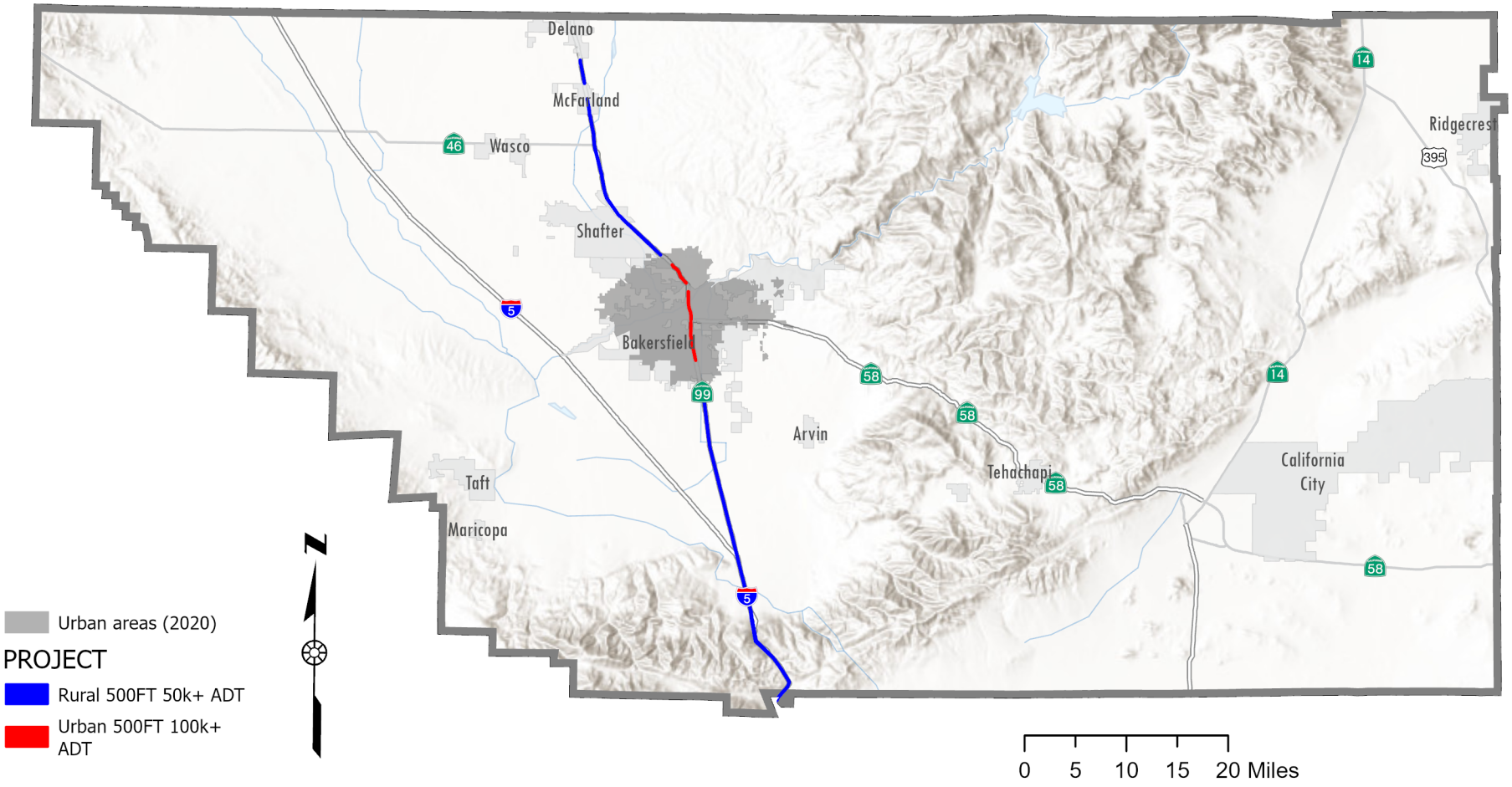
expose more sensitive receptors to TAC emissions. Without specific information on individual sources and locations, no further analysis of stationary TAC sources is possible.

The 2026 RTP addresses vehicle traffic, which, as discussed above, can cause increased local TAC concentrations. TACs resulting from vehicle traffic include DPM, benzene, 1,3-butadiene, formaldehyde, acetaldehyde, acrolein, polycyclic organic matter (POM), and naphthalene. These TACs are generally components of vehicle exhaust, though a small portion occurs as fugitive emissions that are emitted during fueling or fuel transport. Fugitive emissions of TACs are relatively minor in amount and would not be considered likely to affect the overall rate of TAC emissions. TAC emissions present in vehicle exhaust are typically ROGs and would be included in the estimates of ROG emissions from mobile sources. As shown in **Table 4.3-4**, emissions of ROG would be reduced under the 2026 RTP, which would reflect a general reduction of TACs in vehicle exhausts as well as reductions in PM2.5 from heavy-duty vehicle exhausts (**Table 4.3-5**).

Freeways and other heavily traveled roads are generally considered sources of elevated cancer risk due to high concentrations of TACs along these roadways. CARB recommends that local governments avoid locating new sensitive land uses within 500 feet of freeways.[41] However, CARB based its 500-foot buffer recommendation on a review of several studies and air dispersion modeling. ARB's modeling was based on year 2000 truck and automobile information that included higher DPM emissions rates. New vehicle standards, gasoline and Diesel fuel reformulation, and ARB-adopted Diesel Risk Reduction Measures have resulted in lower potential cancer risks near freeways. These risk reduction measures will continue to reduce toxic emissions from motor vehicles and resulting cancer risks, and as such, CARB may soon revisit its recommendation regarding the 500-foot buffer.

Sensitive land uses include schools, hospitals, daycare centers, nursing homes, parks and playgrounds, and residences. As shown in **Figure 4.3-3** and **Figure 4.3-4**, the 2026 RTP could place more households and places of employment within 500 feet of high-volume roadways in urban areas (Bakersfield – Westside Parkway) than under the No Project Alternative and slightly fewer households and places of employment within 500 feet of high-volume roadways in rural areas (near Crome). While the 2026 RTP would decrease emissions of some TACs from vehicles, it would partly do so by reducing vehicle miles traveled (VMT) through encouraging dense development near transportation facilities. This would have the effect of moving more people into areas that could have high concentrations of TACs. However, as discussed above, emission controls are anticipated to substantially reduce emissions of all types, which would reduce health risks.

41 California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective,* April 2005.

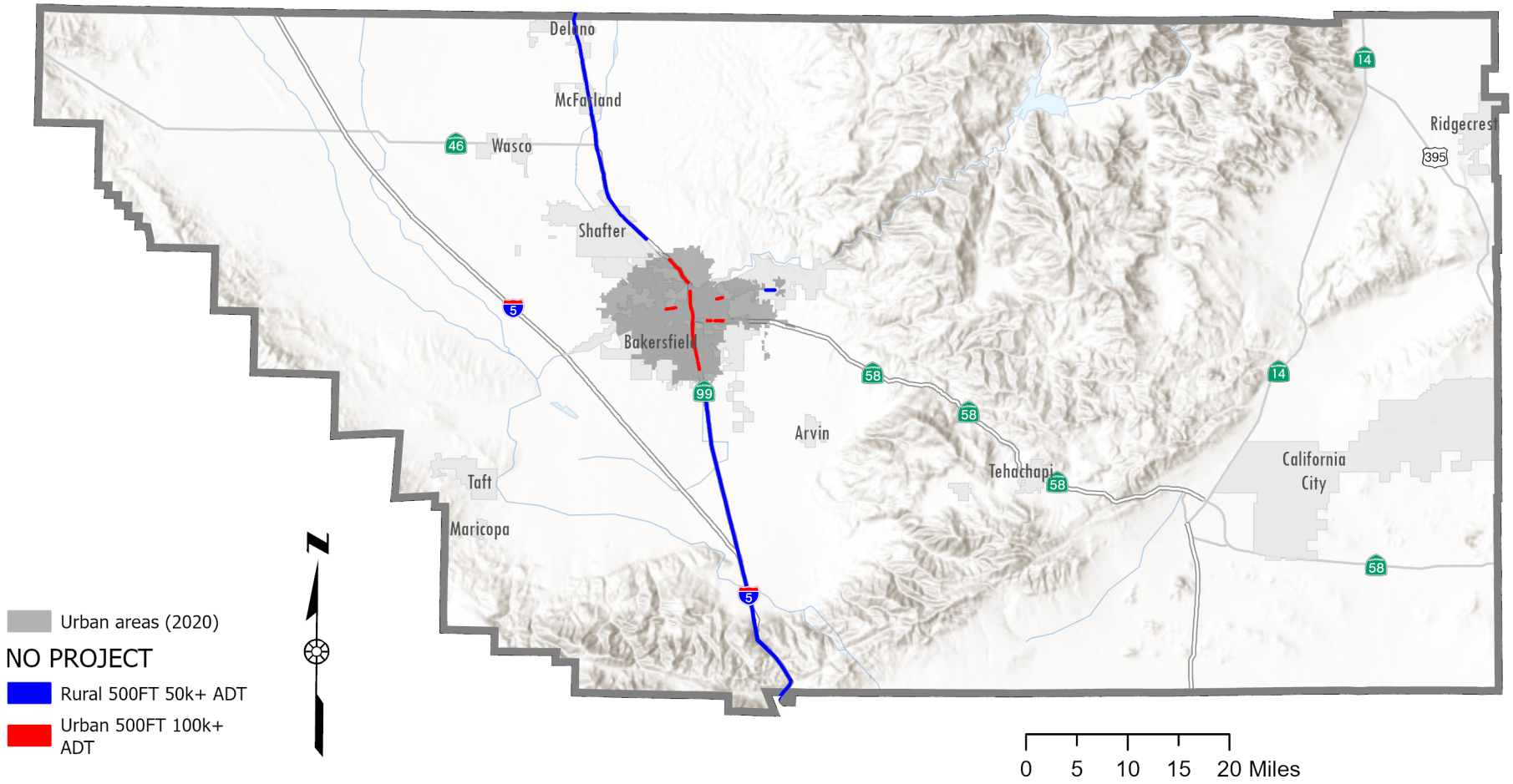


SOURCE: Kern COG, 2026

FIGURE **4.3-3**

IMPACT SCIENCES

Housing and Employment within 500 Feet of High Volume Roadways Under the 2049 RTP Plan



SOURCE: Kern COG, 2026

FIGURE **4.3-4**

IMPACT SCIENCES

Housing and Employment within 500 Feet of High Volume Roadways Under the 2049 No Project Alternative

1170.004•04/26

The two opposing trends (generally cleaner vehicles, but more people located closer to transportation facilities) will result in cleaner air in the region, but health risks at any given location could increase, and therefore, the exposure of sensitive receptors to localized concentrations of TACs could increase above desirable levels for some sensitive receptors. Impacts would be significant for **Impact AIR-4**. Mitigation is required. **Mitigation Measures MM AIR-2** through **MM AIR-7** would mitigate these impacts.

Transit Priority Areas

DPM and other TAC emissions in the TPAs could potentially increase for the same reasons as discussed above for regional impacts; however, risks would be reduced as a result of emission controls. However, without a detailed understanding of site-specific conditions, it is not possible to determine whether, in individual circumstances, impacts would be significant or not.

Some TPAs are located within 500 feet of freeways or other heavily traveled roads, and therefore could result in more sensitive receptors being located in areas with elevated TAC concentrations compared to the county as a whole. However, as discussed above, vehicles are becoming cleaner faster than VMT is increasing, so locations adjacent to freeways will have decreased health risks. Nonetheless, given the potential to increase the number of people within 500 feet of freeways, this impact is considered significant.

Consequently, **Impact AIR-4** is considered significant at the TPA level. See **Mitigation Measures MM AIR 2** through **MM AIR 7**.

Level of Significance Before Mitigation

Significant at the regional and TPA levels for **Impact AIR-4.**

Mitigation Measures

MM AIR-2: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to implement measures adopted by ARB designed to attain federal air quality standards for PM2.5. ARB's strategy includes the following elements:

- Set technology forcing new engine standards;
- Reduce emissions from the in-use fleet;
- Require clean fuels, and reduce petroleum dependency;
- Work with U.S. EPA to reduce emissions from federal and state sources; and
- Pursue long-term advanced technology measures.

- Proposed new transportation–related SIP measures include:[42]

  On-road Sources

  - Advanced Clean Fleets Regulation
  - Zero-Emissions Trucks Measure
  - On-Road Motorcycles New Emissions Standards
  - Clean Miles Standard

  Off-road Sources

  - Tier 5 Off-Road New Compression-Ignition Engine Standards
  - Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation
  - Transport Refrigeration Unit Regulation
  - Commercial Harbor Craft Amendments
  - Cargo Handling Equipment Amendments
  - Off-Road Zero-Emission Targeted Manufacturer Rule
  - Clean Off-Road Fleet Recognition Program
  - Spark-Ignition Marine Engine Standards

MM AIR-3: Kern COG shall pursue the following activities in reducing the impact associated with health risk within 500 feet of freeways and high-traffic volume roadways:

- Participate in on-going statewide deliberations on health risks near freeways and high-traffic volume roadways. This involvement includes inputting to the statewide process by providing available data and information such as the current and projected locations of sensitive receptors relative to transportation infrastructure;

- Work with air agencies including CARB and the air districts in the Kern COG region to support their work in monitoring the progress on reducing exposure to emissions of PM10 and PM2.5 for sensitive receptors, including schools and residents within 500 feet of high-traffic volume roadways;

- Work with stakeholders to identify planning and development practices that are effective in reducing health impacts to sensitive receptors; and

42 CARB. Draft 2022 State Strategy for the State Implementation Plan January 31, 2022. Available online at: https://ww2.arb.ca.gov/sites/default/files/2022-01/Draft_2022_State_SIP_Strategy.pdf, accessed April 11, 2022.

- Share information on all of the above efforts with stakeholders, member cities, counties and the public.

MM AIR-4: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to comply with the CARB recommendations to achieve an acceptable interior air quality level for sensitive receptors, project sponsors can and should identify appropriate measures, to be incorporated into project building design for residential, school and other sensitive uses located within 500 feet (or other appropriate distance as may be identified by CARB) of freeways, heavily travelled arterials, railways and other sources of Diesel particulate Matter and other known carcinogens. The measures should include one or more of the following methods as appropriate:

a. The project sponsor should retain a qualified air quality consultant to prepare a health risk assessment (HRA) in accordance with the California Air Resources Board and the Office of Environmental Health and Hazard Assessment requirements to determine the exposure of project residents/occupants/users to stationary air quality polluters prior to issuance of a demolition, grading, or building permit. The HRA should be submitted to the Lead Agency for review and approval. The sponsor should implement the approved HRA recommendations, if any. If the HRA concludes that the air quality risks from nearby sources are at or below acceptable levels, then additional measures are not required.

b. The project sponsor should implement the following features that have been found to reduce the air quality risk to sensitive receptors and should be included in the project construction plans. These should be submitted to the appropriate agency for review and approval prior to the issuance of a demolition, grading, or building permit and ongoing.

   i. Do not locate sensitive receptors near distribution center's entry and exit points.

   ii. Do not locate sensitive receptors in the same building as a perchloroethylene dry cleaning facility.

   iii. Maintain a 50-foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year).

iv. 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. Either HEPA filters or ASHRAE 85 percent supply filters should be used.

v. Retain a qualified HV consultant or HERS 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.

vi. Maintain positive pressure within the building.

vii. Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air.

viii. Achieve a performance standard of at least 4 air exchanges per hour of recirculation

ix. Achieve a performance standard of 0.25 air exchanges per hour of in unfiltered infiltration if the building is not positively pressurized.

c. Project sponsor should maintain, repair and/or replace HV system or prepare an Operation and Maintenance Manual for the HV system and the filter. The manual should include the operating instructions and maintenance and replacement schedule. This manual should be included in the CC&R's for residential projects and distributed to the building maintenance staff. In addition, the sponsor should prepare a separate Homeowners Manual. The manual should contain the operating instructions and maintenance and replacement schedule for the HV system and the filters. It should also include a disclosure to the buyers of the air quality analysis findings.

d. To the maximum extent practicable the Lead Agency can and should ensure that private (individual and common) exterior open space, including playgrounds, patios, and decks, should either be shielded from stationary sources of air pollution by buildings or otherwise buffered to further reduce air pollution exposure for project occupants.

MM AIR-5: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies, as applicable and feasible, to investigate (using for example procedures and guidelines for PM hotspot analysis consistent with U.S. EPA (2021) PM Hot-Spot Guidance) the relationship between 1) any increases in PM10 and PM2.5 within 500 feet of freeways in their jurisdiction, and 2) existing sensitive receptors in that area that do not have adequate air filtration to reduce such impacts to a less than significant level. To the extent that existing sensitive receptors are identified that do not have adequate air filtration, local jurisdictions may establish a program by which project sponsors can mitigate significant increases in PM10 and PM2.5 (e.g., by providing a retrofit program for older higher emitting vehicles, anti-idling requirements or policies, controlling fugitive dust, routing traffic away from populated zones, replacing older buses with cleaner buses, and paying in to a fund established to retrofit sensitive receptors with HEPA filters when sensitive receptors are located within 500 feet of freeways and high-traffic volume roadways that generate substantial diesel particulate emissions).

MM AIR-6: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies, as applicable and feasible, to plant appropriate vegetation to reduce PM10/PM2.5 when constructing a sensitive receptor within 500 feet of freeways and high-traffic volume roadways generating substantial diesel particulate emissions.

MM AIR-7: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies for major transportation projects (especially those that generate substantial diesel particulate emissions) in the region, if health risks are shown to increase significantly at sensitive receptors within 500 feet of a transportation facility, to consider applicable mitigation. Examples include planting appropriate vegetation and retrofitting existing sensitive uses with air filtration to reduce potential health risk impacts to a less than significant level.

Level of Significance After Mitigation

Mitigation Measures MM AIR-2 through **AIR 7** would reduce potential impacts related to long-term toxic air contaminants. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, **Impact AIR-4** would remain significant and unavoidable.

Impact AIR-5 **Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.**

Regional and Transit Priority Area Impacts

The 2026 RTP would result in a less than significant impact on air quality in relation to exposing a substantial number of people to objectionable odors. Odor sources with the Kern region, such as wastewater treatment facilities, landfills, and agricultural operations, are controlled by county and city odor ordinances and air district rules that prohibit nuisance odors and identify enforcement measures to reduce odor impacts to nearby receptors. For example, SJVAPCD identifies a threshold of significance for odors and the appropriate distance from the source within which the degree of odors could be significant.[43] These ordinances and rules are enforced by the air pollution control districts and local law enforcement. As such, **Impact Air-5** would be less than significant.

Construction of transportation projects and anticipated development under the Plan have the potential to cause an increase in construction activities in the region. Activities associated with the operation of construction equipment, diesel, the application of asphalt, the application of architectural coatings, and other interior and exterior finishes, and roofing may produce discernible odors typical of most construction sites. Although these odors could be a source of nuisance to adjacent uses, odors from construction at any individual site are temporary and intermittent in nature. Construction-related emissions also decrease with distance from individual project sites and quickly dissipate. Additionally, since development projects are required to comply with applicable odor regulations, land use development would not be expected to result in substantial odor emissions or affect a substantial number of people when compared to existing conditions, the impact would be less than significant, and the consideration of mitigation measures is not warranted.

Level of Significance Before Mitigation

Less than significant at the regional and TPA levels.

Mitigation Measures

None required.

---

43 SJVAPCD, Guidance for Assessing and Mitigating Air Quality Impacts, March 2015. Available online at: https://ww2.valleyair.org/media/g4nl3p0g/gamaqi.pdf, accessed April 8, 2026.

Level of Significance After Mitigation

Less than significant at the regional and TPA levels.

4.3.4 CUMULATIVE IMPACTS

The 2026 RTP is a regional plan that integrates transportation investments with land use strategies for an entire region. As such, the analysis of air quality impacts presented above is inherently a cumulative analysis of the impacts in the region. The 2026 RTP would result in significant impacts as a result of short-term emissions of criteria pollutants and as a result of sensitive receptors being located in proximity to sources of TACs (**Impacts AIR-4** and **Impact AIR-5**). However, the 2026 RTP could also contribute to air quality impacts outside Kern County. The cumulative analysis impact area for air quality consists of the San Joaquin Valley Air Basin. Within the San Joaquin Valley Air Basin, the significant air quality impacts associated with implementation of the 2026 RTP would add to impacts of cumulative development pursuant to other RTPs outside Kern County.

Implementation of **Mitigation Measures AIR-1** through **AIR-7** would reduce the 2026 RTP contribution to cumulative air quality impacts; however, the Plan's contribution to these impacts would remain significant and would add to the impacts of other RTPs in surrounding jurisdictions.

4.4 BIOLOGICAL RESOURCES

This section describes the current biological resources within the region and evaluates the significance of the changes in biological resources that would result from development of the proposed 2026 RTP. In addition, this PEIR provides regional-scale mitigation measures as well as a framework of mitigation measures for subsequent, site-specific environmental review documents. Sources used in this section include the US Fish and Wildlife Service (USFWS), the California Native Plant Society (CNPS), the California Natural Diversity Database (CNDDB), the California Department of Fish and Wildlife (CDFW), and the Kern County General Plan and associated EIR.

4.4.1 ENVIRONMENTAL SETTING

Kern County encompasses an area of varied topography and diverse ecosystems. An ecosystem is the dynamic complex of plant and animal communities and their associated non-living environment. The exceptionally diverse plant and animal communities in the plan region call for a broad approach to their description. Portions of the Coastal Range foothills, Sierra Nevada Range, San Joaquin Valley, and Mojave Desert are located in Kern County. This highly varied terrain and climate add to the diversity of flora and fauna.

4.4.1.1 Terrestrial Biota and Habitats

It is important to note that plant communities are not always clearly defined with strictly delineated boundaries. Plant communities are dependent on or affected by factors such as geographical location, soil types, precipitation rates, angle, and direction of slopes, elevations, microclimates, and successional considerations. Therefore, it is not uncommon to find a particular plant or grouping of plants growing outside the area that would be considered their customary habitats if some of the above factors are advantageous to that growth. The following descriptions include the most characteristic of the distinct ecological communities in the regions.

Urban/Developed

Urban or developed land comprises areas of intensive use, with much of the land covered by structures. Included in this category are cities, transportation, power and communications facilities, residences, mills, shopping centers, industrial and commercial complexes, and institutions that may, in some instances, be isolated from urban areas. Agricultural land, forest, wetland, or water areas on the fringe of urban or built-up areas are not included in this category except where they are surrounded and dominated by urban development.

Agriculture

Agricultural land may be broadly defined as land used primarily for the production of food and fiber and includes crop fields, orchards, vineyards, and grazing lands. The number of building complexes is smaller, and the density of the road and highway network is much lower in agricultural land than in urban or developed land. Lands producing commodities such as wild rice, cattails, or certain forest products commonly associated with wetlands are excluded from the agriculture category and carry a wetlands designation. Similarly, when wetlands are drained for agricultural purposes, they are included in the agriculture category. Agricultural lands that are no longer in use and where wetland vegetation has reestablished are included in the wetlands category.

Alkali Playa

Alkali playa can be found in closed basins of the Transmontane Deserts, and some smaller examples in the Central Valley. Poorly drained soils with high salinity and/or alkalinity due to evaporation of water that accumulates in closed drainages are typical of this community. Often, these areas have a high water table with a salt crust on the surface. The total plant cover is low, resulting from wide spacing between shrubs and a minimally developed understory. Vegetation that does occur is usually low, grayish, microphyllous, and succulent shrubs. Characteristic species include iodine bush (*Allenrolfea occentalis*), shadscale (*Atriplex confertifolia*), Parry's saltbush (*A. parryi*), and greasewood (*Sarcobatus vermiculatus*).

Alkali Sink (Chenopod/Saltbush).

A majority of the County's basins are landlocked and collect seasonal runoff, These basins are found within four general geographical areas: (1) the long drainage basin in the center of the San Joaquin Valley that lies between Buena Vista Lake on the south and Tulare Lake on the north; (2) the land area along major faults in the hills surrounding the Valley (consisting of sag ponds); some along the San Andreas Fault in the Temblor Range (smaller series); and another series at the western end of the San Emigdio Range; (3) an area of basins, within Castac Lake near Lebec, and Proctor Lake near Tehachapi, and (4) the alkali sinks on the desert, including Muroc Dry Lakes (Rosamond and Roger's Lakes), Koehn Lake, and China Lake.

The traditional alkali sink occurs in areas in which the soil, even in the wettest of seasons, is highly mineralized and there is a definitive vegetational change. Here, plants are often perennial, markedly halophytic, and highly specialized.

In the areas with low alkalinity, plants such as goldfields: *Lasthenia minor, L. chrysantha*, and *L. ferrisiae* often occur. Other conspicuous plants known to occur in alkali sinks are alkali larkspur (*Delphinium*

recurvatum) in the San Joaquin Valley and alkali wallflower (*Erysimum capitatum* var. *capitatum*) in the Mojave Desert.

Arid Shrub

This association lies between the pinyon woodland and the desert creosote bush association between 2,500 and 4,000 feet of elevation. Arid scrub typically occurs in a region of deep canyons with steep slopes that are hot and dry in the summer, and cold and often windswept in the winter. Soils are coarse, often consist of granitic sand and gravel on broad, steep slopes, and are well-drained. These slopes are most extensive on the west side of Indian Wells Valley and form a more or less well-defined zone south to Tehachapi Pass. Southwest of that pass, their occurrence is irregular and the vegetation less clearly defined to the west end of the Antelope Valley. Here, on the southeast base of the Tehachapi Range, the canyons collect more moisture, and the arid shrub association is gradually replaced by chaparral. The vegetative cover is often open, but some of the slopes have a dense cover of xerophytic shrubs and subshrubs that also grow in other associations. California buckwheat (*Eriogonum fasciculatum* ssp. *polifolium*) grows in dense patches. A few other species typical of this association are widespread within it and often occur in other communities, such as the Sagebrush Scrub or Joshua Tree Woodland. One of the most typical arid shrubs is the clustered-stemmed Joshua tree, Yucca brevifolia, which grows in most places with deep sandy soil. Bladder pod (*Isomeris arborea*) is widespread in this association.

Chaparral

There are extensive stands of chaparral on the northwest spur of Mt. Abel and at other scattered localities in the Mt. Pinos region, in the central Temblor Range, in the southwestern and northeastern Tehachapi Mountains and ridges, on the southwest flank of Piute Mountain, the Blue Mountain region near Glennville, and occasionally on other mountain slopes.

The chaparral communities in Kern County support four species of manzanita (*Arctostaphylos*) and four species of shrubs and small trees from the *Ceanothus* genus, greasewood.

There are also extensive growths of chaparral from Tollgate Ridge east of Keene to the west slope of Cache Peak at the head of Jawbone Canyon, high above the Mojave Desert. Here, the most common components include dwarf oak (*Quercusjohn-tuckeri*) and the two closely related species of buckbrush, *Ceanothus vestitus* and *C. cuneatus*. Rainfall in the Kern County chaparral belt is not precisely known; however, the average amount of precipitation in Kern County is 11.71 inches annually.[1] Chaparral in

[1] National Centers for Environmental Information. County Mapping. Available online at: https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/mapping/4/pcp/202512/12/value, accessed April 2, 2026.

Kern County occurs at elevations from 3,200 feet to 4,200 feet in the Blue Mountain region, between 4,000 and 5,000 feet on Piute Mountain, and well over 5,000 feet on Mt. Abel. On Cache Peak its lower level is about 4,000 feet; it ascends to over 6,000 feet. Winters are cold, with minimum temperatures from 0° F to 10° F. Summers are hot; typical daytime temperatures are above 90° F and temperatures in excess of 100° F are not uncommon.

Creosote Bush

The most extensive plant assemblage in Kern County is the creosote bush association. This xeric vegetation covers the entire northwest corner of the broad Mojave Desert that lies within Kern County. Creosote bush (*Larrea tridentata*), the dominant shrub of this association, typically grows as rather evenly spaced shrubs. On higher slopes, large groups of other shrubs can occur, including many of the species of the arid shrub association. In low basins, common and spiny saltbush (*Atriplex polycarpa* and *A. spinifera*) can occur near alkali sinks. Favorable conditions for groves and desert woodlands of the Joshua tree include deep soils and adequate rainfall. In the rugged canyons of the desert ranges, particularly the El Paso Range, several species common in the Sonoran Desert and the Death Valley region grow in these canyons. Although the creosote bush association is generally limited to the desert, it can include annuals that also occur in the upper San Joaquin Valley, in the arid mountains south and west of the valley, and as far to the northwest as the Mt. Hamilton Range. In years of adequate rainfall, this association will support a lush growth of colorful, specialized annual wildflowers. In years of little rainfall, only a few individuals of the native annuals may sprout and survive to set new seed.

Within Kern County, the creosote bush association occurs at elevations from about 2,300 feet at Muroc, Boron, and Ridgecrest, to more than 4,700 feet at Government Peak in the Rand Mountains. Winters are relatively cold (Cantil, at the mouth of Red Rock Canyon, has a recorded low of -3° F), and summers are hot with very low humidity (Cantil and Inyokern share record highs for Kern County with readings of 117° F). The average annual precipitation for the creosote bush association is between 2.5 and 5.5 inches. However, the rainfall is highly variable. A seasonal total of less than 0.5 inch has been recorded at Armitage on the east side of Indian Wells Valley; as much as 14.1 inches has fallen at Backus Rd. near Willow Springs and 12.4 inches at Randsburg.

Douglas Oak Woodland

Slopes located at average elevations of the mountains and those in favorable places in the Temblor Range are occupied by open woodland that is characterized by the Douglas, or Blue Oak (*Quercus douglasii*). Douglas Oak Woodlands can include one or more of three co-dominant species. The first of these is dominated by the Douglas Oak itself, which occurs as well developed trees in broad parklands, usually in

good soils on broad slopes and flats. This woodland is best developed between Granite Station, Woody, and Glennville.

Valley Oaks (*Quercus lobata*) form open savannah woodlands in areas with deep soils and good moisture. Vernal pools are often associated with the Valley and Douglas oaks. Impressive groves grow in Castac Valley at Lebec, on the flats at Tejon Pass, in the valleys around Tehachapi, and at Lynns Valley in the Greenhorn Range.

California Foothill Pine (*Pinus sabiniana*) is dominant in rocky and exposed places along ridges and in canyons, usually with poor or shallow soil. In this habitat, Douglas oak, although common, often grows in a stunted, dwarfed, or even shrubby form. In lower Kern Canyon, it can be dominant. At its lower levels, the woodland occurs on north slopes and in canyons with the Upper Sonoran grassland on the south slopes. With the exception of the region in the Greenhorn foothills between Granite Station and Glennville, the Douglas oak woodland is rarely extensive. At middle and higher elevations, it alternates with the chaparral, shin oak brush, and even the yellow pine forest. In Kern County, the Douglas oak woodland occurs particularly in the region from Tehachapi south to the west end of Antelope Valley. It is also well established on the south end of the Piute Mountains at Kelso Valley. In the San Emigdio and Temblor ranges, the Douglas oak woodland occurs in a distinctive association with California junipers, and from the Piute Mountain region south through the Tehachapi Mountains with junipers and pinyon pines.

Within Kern County, this association occurs from about 1,000 feet to 3,500 feet elevation in the Greenhorn Range, in the Tehachapi Mountains, and the Mt. Pinos region, it occurs from 2,000 feet to as high as 6,000 feet, and in the Temblor Range from 1,500 feet to 4,300 feet. Typically, in these valleys, the median annual average rainfall is between 11 and 14 inches. Winter temperatures range from relatively mild in the Temblor and San Emigdio ranges, not usually below 20° F, to colder areas such as Lynns Valley, reaching 10° F nearly every year.

Oak woodlands are important to a wide range of wildlife species. More than 300 species of birds, amphibians, reptiles, and mammals are known to use oak woodlands.

Based on 1990 mapping, the University of California's Integrated Hardwood Range Management Program estimates that Kern County has 721,000 acres of existing oak woodlands, the largest number of acres of all counties in California. While other areas in the state have lost significant acreage through development, and most recently disease, estimates of the loss of acreage in Kern County range from 15 to 20 percent since the 1900s. This relatively slow rate of loss can be attributed to the historically slow rate of growth in the mountain and valley areas of the county.

Freshwater Marsh

Marshlands once occupied vast areas in the Buena Vista-Tulare drainage system of the central San Joaquin Valley. The nearly level basin (Buena Vista Lake in the south is 252 feet above sea level; Tulare Lake, the northern terminus, is 190 feet) was connected by numerous sloughs, marshes, and playas that received water from the Kern River and from less important streams that flowed out of the mountains and then meandered sluggishly northward.

The construction of major dams on the Tule and Kaweah rivers, and particularly Isabella Dam on the Kern River, together with deep well pumping in the valley, has severely lowered the water table so that water from these systems rarely reaches the valley. The reclamation of this region for farming has greatly disrupted the historic flora, and it is possible that some species are now extinct.

Although the marshlands are gone, the present network of canals and low-lying places where irrigation water collects often simulates the old wetland habitats and has a good representation of marshland plants. Another location of occurrence is the Kern National Wildlife Refuge, west of Delano, where there is a sanctuary for the marshland flora and vegetation.

Great Valley Mesquite Scrub

Great Valley mesquite scrub grows in sandy loam substrates of alluvial origin. It is dominated by mesquite (*Prosopis glandulosa torreyana*) and the desert saltbush (*Atriplex polycarpa*). Understories are grassy during wet years, usually dominated by introduced annuals such as red brome (*Bromus rubens*).

Lower Sonoran Grassland

The broad treeless plains at the head of the San Joaquin Valley that encircle the Buena Vista-Tulare drainage system are arid and often shrubless. Although only recently recognized as such, this region is a true desert; the annual rainfall averages less than 6 inches. The vegetation largely consists of winter annuals of rapid growth, many of them introduced. Only in years of exceptional rainfall do these plants grow with vigor, but years of drought with less than 2 inches are not unknown. The rainy season is usually between late November and early April, often supplemented with dense Tule fog from December to February.

Perennials are uncommon and only one shrub, common salt bush is widespread. The annual flora is quite distinctive in normal years. In very dry years, few plants reach maturity. The most successful plants in years of scant rainfall are the native *Vulpia microstachys* var. *pauciflora, Lepidium dictyotum* (which is often in bloom in January), *Lasthenia californica*, and the introduced Arabian grass (*Schismus arabicus*), red-

stemmed filaree (*Erodium cirutarium*), red brome (*Bromus madritensis* ssp. *rubens*), and common foxtail (*Hordeum murinum* ssp. *glaucum*). In years with dry winters followed by late spring rain there is a dense growth of non-native and invasive Russian thistle (*Salsola tragus*) that sometimes covers thousands of acres.

Mountain Meadow

Meadows, small and large, are a characteristic feature of the Sierra Nevada forests. Some areas are quite wet all year, and are home to semi-aquatic plants. Fully aquatic plants grow in the occasional small permanent pools. Around these wet areas, there is usually a belt of soil that is perennially moist but not wet. Finally, dry but disturbed soils are characteristic of the outer meadow borders. Meadows that have areas with soil that is quite wet early in the summer but dry by fall are common. These soils favor a distinctive group of plants that mature by mid-summer. This is especially true of the meadows of the Jeffrey pine forest, such as Little Cannell and Cane meadows on the Kern Plateau and Landers and Woolstaff meadows in the Piute Mountains. In the Greenhorn Range, all of the meadows are quite small and are generally wet. They occur mostly on the east slope of the range. In the Piute Mountains, they are broad, sunny, and in normal years are usually dry by mid-summer. The Piute meadows are dominated by big sage (*Artemisia tridentata*). Typical meadows in the Piutes are Pine Flat on the Kern Plateau and Woolstaff and Weldon meadows. True mountain meadows do not occur in the Tehachapi Mountains, except for the long series of connecting meadows in the Mil Potreros, which separate the San Emigdio Range from Mt. Pinos.

Pinyon Woodland

On the desert-facing slopes of the Sierra Nevada, the arid easterly slopes of the Piute Mountains, the northwestern Tehachapi Range, and much of the Mt. Pinos region, the Douglas oak woodland of the western slopes is replaced by a woodland of pinyon pines (*Pinus monophylla*), usually with large shrubs of California juniper (*Juniperus californica*) at lower borders. These woodlands can range from fairly sparse to well-developed. The pinyon woodland is especially well developed along the Kern-Tulare County line at the southeast border of the Kern Plateau in the Lamont Peak region. From there, it extends to Kiahvah (Scodie) Mountain south of Walker Pass. South of that location, on the desert-like summits of the extreme Southern Sierra Nevada including Gold, Dove, and Butterbredt Peaks, it is poorly developed. Pinyons are scattered but hardly form true woodlands along the east slope of the Tehachapi Mountains, especially south of Tehachapi Pass. The woodland grows in a continuous belt, often of forest proportions, around Mt. Pinos and in the San Emigdio Range west to the canyons bordering the upper Cuyama Valley in Ventura and Santa Barbara counties. Rainfall records are limited for the area; however, the normal range

seems to be from 7 to 12 inches. Winters are cold, with minimum temperatures of 10° F, and typical summer days have temperatures from 85° F to 95° F.

Red Fir Forest

Although occupying the smallest area of any association recognized in Kern County, the red fir forest near the summit on the north and east slopes of Sunday Peak is the southern limits of a widespread and important forest zone of the Sierra Nevada. This association grows for the most part on open slopes in thoroughly decomposed granite, rich in organic matter, interspersed with open areas with extensive colonies of choke cherry (*Prunus emarginata*) and chinquapin (*Castanopsis sempervirens*). Here, the granite outcrops have colorful colonies of pride-of-the-mountains (Penstemon newberryi), and Sierra manzanita (Arcotostaphylos nevadensis).

The red fir forest has the County's shortest growing season, approximately 120 days, and the highest precipitation, up to 40 inches. Summer temperatures rarely reach 100° F; winter extremes are not recorded, but are expected to be below 0° F. The forest occurs from 7,600 feet to 8,400 feet in elevation at the summit of the Sunday Peak.

Shadscale Scrub

The shadscale scrub association is a plant complex typical of much of the Mojave Desert, but rather sparingly represented in Kern County. It occurs in relatively heavy clay soils, usually with a shallow hardpan, which tends to restrict or eliminate the deep-rooted creosote bush and many of its associated shrubs. It consists of a small group of specialized low shrubs, mostly the annuals that commonly occur with the creosote bush association. In Kern County, these are the desert poppy (*Eschscholzia glyptosperma),* panamint catseye **(***Cryptantha angustifolia),* desert sand-verbena *(Abronia villosa)* and the Mojave pincushion (*Chaenactis marcranth).*

Shadscale scrub is common on the lower northeastern slopes of the El Paso Range. It is local in the Rademacher Hills southeast of Ridgecrest, in clay deposits at the heads of many canyons in the El Paso Range, on the plains north of Boron, and on some of the benches around the east and southern borders of Indian Wells Valley. A common co-dominant plant is the desert-holly (*Atriplex hymenelytra*).

The climate and weather is much the same as that of the creosote bush association.

Shin Oak Brush

Shin oak brush is a plant association that is best established in the mountains of Kern and northeastern Los Angeles counties. Shin oak (*Quercus garryana* var. *breweri*) grows in dense, almost impenetrable

thickets on the west slope of the Greenhorn Range and the east slope of Breckenridge Mountain. It also occurs, though less extensively, on the north end of Piute Mountain. Shin Oak covers large mountainous areas in dense, pure stands in the Tehachapi Mountains, around the summit of Cummings Mountain, and particularly on the high, steep slopes south of Tejon Pass. The shrub does not occur in the San Emigdio or Temblor Ranges.

Shin oak brush requires substantial spring and summer moisture and can endure cold winters. It tolerates and even thrives in deep, rich, heavy soils. Shin oak brush mixes with other shrubs only in draws, ravines, wet places, or disturbed areas. The dense stands are usually pure except for scattered canyon live oaks (*Quercus chrysolepis*), which usually grow in a shrubby form.

Shin oak brush grows at elevations of 3,000 to 4,500 feet in the Greenhorn Range, at 4,000 to 6,000 feet on Breckenridge Mountain, and from 5,000 to 7,500 feet in the Tehachapi Mountains. Winter temperatures of less than 15° F are common, and extremes approaching 0° F are not rare. Typical summer temperatures average about 85° F, but can go up to 105° F. The median annual precipitation is approximately 17 inches.

Sierra-Tehachapi Saltbush Scrub

Sierra-Tehachapi saltbush scrub thrives in alluvial, non-alkaline soils in the Valley Region. It occurs on rolling hills in areas of hot, dry summers and short, wet winters with no prolonged periods of Tule fog. This community is dominated by the desert saltbush and occurs with other shrubs interspersed with extensive areas of non-native and native annual grasses and forbs. Other plants associated with this community include grey California buckwheat (*Eriogonum fasciculatum polifolium*), cheese brush (*Hymenoclea salsola*), bladderpod (*Isomeris arbor gloves*), and the Bakersfield cactus (*Opuntia treleasei*).

Streambank

Streambank, or riparian plants, are conspicuous anywhere and especially so in an arid landscape. The Kern River is the County's largest watershed system. A few creeks running most of the year include Poso Creek and its tributaries on the west slope of the Greenhorn Range and El Paso Creek in the Tehachapi Mountains. Caliente, Tehachapi, and San Emigdio creeks normally have surface flows until late in the season; in wet cycles, these run all summer.

The Kern River and other streams support a characteristic riparian flora on their banks. The common and conspicuous trees are Fremont cottonwood (*Populus fremontii*), yellow willow (*Salix lucida* ssp. *lasiandra*), and red willow (*Salix laevigata*). Oregon ash (*Fraxinus latifolia*) and buttonwillow (Cephalanthus occidentalis var. californicus) are common along the Kern River and occasionally along the streams in the Greenhorn Range. Along the lower Kern River, introduced, naturalized trees of California fan palm

(*Washingtonia filifera*) and Peruvian peppertree (*Schinus molle*) are interesting additions to the native flora. Big-leaf maple (*Acer macrophylum*) occurs along El Paso Creek and near the head of Black Bob Creek. California sycamore (*Platanus racemosa*) is more dominant along Kern Canyon south. Black cottonwood (*Populus trichocarpa*) is typically dominant along Tejon and Bull Run Creeks, and in a shrubby form along the Kern River above Kernville. White Alder (*Alnus rhombifolia*) occurs at higher elevations. Canadian waterweed (*Elodea densa*) is an aquatic species that seems to grow only in running water and is common in Kernville and in Poso Creek. The greater duckweed (*Spirodela polyrhiza*) is common in quiet water and on damp sand. The herbaceous perennials and annuals that grow along the streams are a mixture of those of the fresh water marsh association and those typical of the meadows of the yellow pine forest.

Southern Cottonwood-Willow Riparian Forest

Southern cottonwood-willow riparian forest, found along the banks of the Kern River, is dominated by the broad-leafed deciduous Fremont's cottonwood (*Populus fremontii*) and the black cottonwood (*P. trichocarp*). Understories usually are shrubby willows.

The Upper Sonoran Grassland

Most of the foothills above the Lower Sonoran grassland and below the Upper Sonoran woody associations are treeless and shrubless. This is a region of grassland distinctly different from that of the valley floor. Unlike the Lower Sonoran grassland, perennial grasses are relatively common with low shrubs scattered throughout the area. North slopes, especially at the higher elevations, are typically covered with woody vegetation. In areas with more rainfall, Douglas and valley white oaks occur in scattered stands, making the limits of the Douglas oak woodland and the Upper Sonoran grassland sometimes difficult to define.

The Upper Sonoran grassland occurs rather intermittently over a wide area, from as low as 900 feet elevation in the hills in the Granite Station region to nearly 6,000 feet elevation on the high rounded summits and slopes of the southwestern Tehachapi Mountains. Here the hot desert winds of late spring and summer likely prevent the development of woodland and forestland. Although commonly considered a cismontane association, woodland and forestland islands, which are sometimes extensive, occur on the high eastern slopes of the Tehachapi Mountains, the west side of the desert Antelope Valley, and along the west side of Kelso Valley at the Southeast base of the Piute Mountains.

Normal rainfall for the Upper Sonoran grassland varies from 6.5 inches at lower levels to 10 inches where it blends with the Douglas oak woodland. Mean minimum temperatures are 23° F to 0° F on the high Tehachapi summits. Frosts happen periodically between November 1 and April 15.

Upper Sonoran Sub-shrub

The arid hills around the head of the San Joaquin Valley from Adobe Canyon northeast of Bakersfield southwest through the Tehachapi Mountains and the San Emigdio Range, then northwest along the east side of the Temblor Range, support the Sonoran Subshrub vegetative association. This is a vegetative zone that is transitional between the valley grassland and the more typical Upper Sonoran associations. This association is an assembly of low shrubs of the neighboring dryer plant associations. These shrubs are not only summer dormant but most can endure long periods or even years of winter drought. Four taxa are almost entirely limited to this association which extends north along the slopes bordering the west side of the San Joaquin Valley as far as Corral Hollow in eastern Alameda County; these are: Eastwoodia (*Eastwoodia elegans*), Temblor buckwheat (*Eriogonum temblorense*), Temblor clarkia (*Clarkia tembloriensis*), and wind poppy (*Stylomecon heterophylla* var. *micropetala*).

The minimum winter temperatures are rarely less than 26° F; summer days are typically over 90° F, with those over 100° F not at all uncommon. The rainfall averages from 5 to 7 inches and moisture is augmented by periods of dense winter fog. Elevations for the association range from 900 to 1,500 feet, ascending to as high as 2,200 feet in the extremely arid southern Temblor Range west of Taft and Fellows. Soils are largely sandstone and shale. In the Temblor Range the substrate is often of pure white diatomaceous shale.

Valley Saltbush Scrub

Valley Saltbush scrub community is composed of gray or blue-green shrubs of the Goosefoot (*chenopod*) family growing over a low, annual undergrowth. It most commonly occurs in the gentle, rolling hills surrounding the Tulare Basin in the sandy to loamy soils of alluvial deposits, where the soils typically lack surface alkalinity.

The community was once widespread in the San Joaquin Valley but has been nearly extirpated or locally eliminated by agricultural conversion, flood control, and groundwater pumping.

Typical goosefoot shrubs in the community include the desert saltbush (*Atriplex polycarpa)*, arrowscale saltbush (*A. phyllostegia*), and the spiny saltbush (*A. spinifera*). Wildflowers occurring in the community include alkali larkspur (*Delphinium recurvatum*), alkali heath (*Frankenia grandifolia campestris*), Gilia tricolor, and creamcups (*Plagystemon californicus*).

Valley Sink Scrub

The valley sink scrub community once surrounded the San Joaquin Valley lakes (i.e., Kern, Buena Vista, Tulare, and Goose), which have since been drained. Growing in heavily saline or alkaline clays, these perennial plants drew water from the high ground water table. Loss of habitat has caused the near extirpation of this community.

Valley sink scrublands are open to dense shrublands dominated by alkali-tolerant plants of the goosefoot family (*Chenopodiaceae*) such as iodine bush (*Allenrolfea occidentalis*) and sea-blite (*Sueda* spp.). Understory growth is usually absent, though a sparse cover of red brome (*Bromus rubens*) can occasionally develop. Other plant species associated with this community include alkali larkspur (*Delphinium recurvattum*), saltgrass (*Distichlis spicata*), and Mojave red sage (*Kockia californica*).

Vernal Pools

Depressions that collect rainfall in the winter but are dry by summer or late spring are common in the County; however, they are not the typical California vernal pools that accumulate water nearly every winter. Many are ephemeral and may go many years without any water at all. Some, as exist in the Temblor and San Emigdio Ranges, are at least somewhat sub-alkaline, and their flora may more closely approximate alkali sink vegetation than it does the California vernal pool flora. This is especially true of the sag ponds along the San Andreas Fault.

More typical vernal pools that do accumulate water every winter occur in the Glennville region, particularly in Lynns Valley. They were once common in the Tehachapi region, but most have been eliminated by farming and other developments. These pools often have a flora of great diversity in a small area. The plants are sporadic in their occurrence, and many occur at only one pool or only in one region.

Yellow Pine Forest Association

The coniferous Yellow Pine forest typically occurs at the highest elevations in the County. An exception is a small area at Sunday Peak in the extreme northern part of the Greenhorn Range. There, the Sierra red fir forest reaches its southern limits. The common conifer in the Greenhorn Range and on Breckenridge Mountain is the Yellow or Ponderosa pine (*Pinus ponderosa*). In the other colder, more arid mountains ponderosa pine occurs only in relict colonies and is generally replaced by the Jeffrey pine (*Pinus jeffrey).*

The ponderosa pine is the dominant tree of the dense forests in the Greenhorn Range and on Breckenridge Mountains. Jeffrey and Ponderosa Pines mix in the Piute Mountains. The tree is rare in the

Tehachapi Mountains and is known in the Mt. Pinos region only from a colony on the east slope of Brush Mountain. Incense cedar (*Calocedrus decurrens*) is common in the Greenhorn Range and as a scattered grove in the Black Bob Canyon, San Emigdio-Mt. Pinos region. White fir (*Abies concolor)* is also found in the Greenhorn, San Emgdio-Mt Pinos forests. Big cone spruce or Douglas fir (*Pseudotsuga macrocarpa*) occurs in the Jeffrey pine forest in the Mt. Pinos region. The Kellogg oak (*Quercus kelloggii*) is a characteristic and common tree of both forests often extending as a narrow woodland below the lowest yellow pines.

The ponderosa pine forest in Kern County is notable for the number of species that reach their southern limits, and includes no less than 48 plant species. These plants at the southern limits of their range are often scattered and rare, sometimes forming single, isolated colonies.

The annual precipitation, falling mostly as snow, is from 20 to 35 inches in the ponderosa pine forest and from 14 to 20 inches in the Jeffrey pine forest. Winter Temperatures often approach 0° F, with a high of 80° F and 90° F in the summer, and high temperature extremes rarely of more than 100° F. The yellow pine forest occurs at elevations above 5,500 feet in the Mt. Pinos region, the Tehachapi Mountains, and in the Piute Mountains. On Breckenridge Mountain and in the Greenhorn Range it makes its appearance between 4,000 and 5,000 feet, and on the Kern Plateau at approximately 6,000 feet.

4.4.1.2 Native Vegetation and Wildlife Preservation Areas in Kern County

The following section describes significant areas in Kern County that provide protection, preservation, and conservation for native vegetation and wildlife. **Figure 4.4-1, Kern County Native Vegetation, Wildlife Preservation and Conservation Areas,** shows the location of each of the areas described below.

Red Rock Canyon State Park

Red Rock Canyon is the first State park in Kern County and was established in 1968 for the protection of outstanding scenic values and wildlife habitat. The park comprises 26,000 acres. The desert terrain is the majority of the range for two endemic plants, Red Rock poppy and the alkali mariposa lily.

Bitter Creek National Wildlife Refuge

Bitter Creek Refuge includes 960 acres, which was purchased to preserve and protect foraging habitat for the California condor. The refuge habitat is primarily grasslands with some pinyon pine-juniper community, scrub oak, and Bitter Creek riparian habitat. The refuge is closed to visitors.

Mt. Pinos Condor Area

The Mt. Pinos Condor Area is situated in southwestern Kern County and straddles the Kern and Ventura County line adjacent to Mt. Pinos and Sawmill Mountain. This 6,400-acre critical habitat area was designated in 1976 as part of the original Recovery Plan for the California condor. It encompasses approximately six sections of land.

Coles Levee Ecosystem Reserve

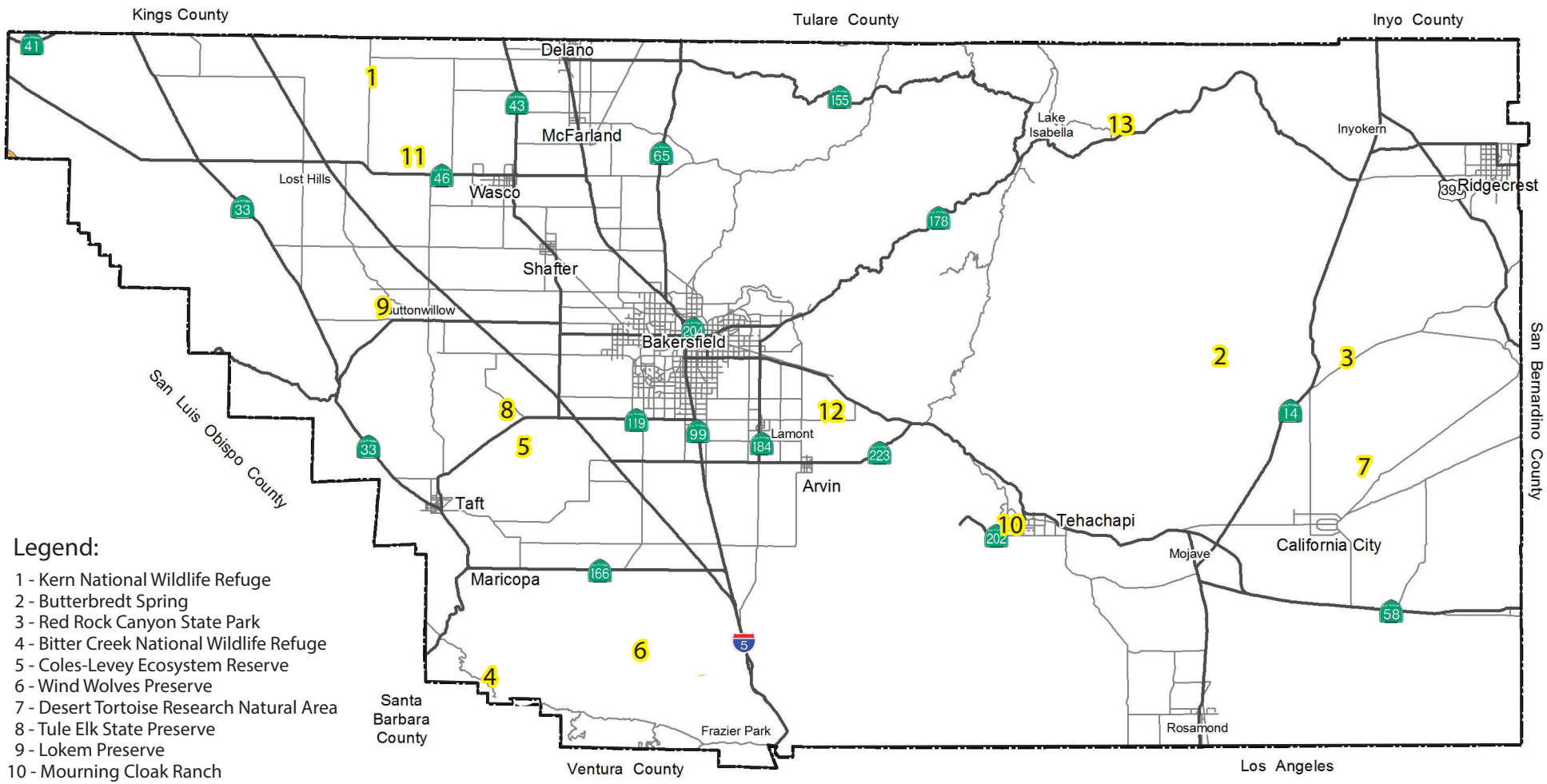
The 6,059-acre preserve was created in October 1992 and supports habitat for the Valley saltbrush scrub, Valley sink scrub, sancaton grassland, sloughs, Great Valley cottonwood riparian, vernal playas, San Joaquin kit fox, Tipton kangaroo rat, giant kangaroo rat, blunt-nosed leopard lizard, and the Swainson's hawk.

Wind Wolves Preserve

During the mid-90s, the Wildland Conservancy purchased a portion of the historic San Emigdio Ranch to create the largest privately owned nature preserve on the West Coast. The preserve is in an ecologically unique region where the Transverse Ranges, the Coast Ranges, the Sierra Nevada Mountains, the western Mojave Desert, and the San Joaquin Valley converge. The Tule Elk were reintroduced to Wind Wolves Preserve in the late 1990s. The preserve is 93,000 acres.

Desert Tortoise Research Natural Area

The Bureau of Land Management (BLM) designated this area for the preservation of the Desert Tortoise in 1976. The area, north of California City, is jointly managed by the BLM, CDFW, and the Desert Tortoise Preserve Committee, a nonprofit group established to acquire and manage lands for protection of the desert tortoise. The area comprises 25,695 acres.



SOURCE: Kern COG, 2026

FIGURE **4.4-1**

IMPACT SCIENCES

Kern County Native Vegetation, Wildlife Preservation, and Conservation Areas

1170.004•04/26

Tule Elk State Preserve

This 954-acre preserve includes a remnant of the once extensive valley grasslands. When purchased in 1932, water was abundant in Buena Vista Slough along the southern edge of the property and supported a rich growth of willows, cottonwoods, and associated riparian vegetation. The 140 tule elk originally enclosed within the compound soon depleted the available forage, resulting in the reduction of herd size. The problem was further aggravated in 1952 when the Isabella Dam was completed, cutting off seasonal flooding of the area. The result caused the willows and cottonwoods to die, and the riparian habitat along the Slough to completely disappear. Currently, whenever the herd exceeds its ideal number of 30-35 for this 953-acre preserve, several elk are relocated to other open spaces.[2] The preserve managers, the State Department of Parks and Recreation, are considering various solutions to provide suitable habitat for the protection and interpretation of the Tule elk.

Kern National Wildlife Refuge

Located west of Delano, this 10,618-acre refuge includes both cropland managed for waterfowl use as well as relics of alkaline playas and sloughs of the Kern River. The San Joaquin Desert Research Natural Area was established as part of the Refuge to preserve 2,260 acres of native upland habitat. Approximately 1,300 acres of marshland exist on the Refuge, as well as a total of 8,131 acres of upland habitat. Vegetation controls are periodically employed to reduce overgrown stands of emergent and exotic vegetation, such as salt cedar, within the marsh units and elsewhere on the site.

Jawbone & Butterbredt Spring

This 80-acre BLM site is located 15 miles southwest of Ridgecrest, California. With less than 5 inches of rain annually, including some snowfall, the arid climate results in rapid evaporation of the spring. Some water seeps underground to feed area springs that provide water, which is essential to wildlife. Butterbredt Spring supports desert wildlife while also providing water and habitat for waterfowl migrating in the spring and fall. The land at the spring is privately owned, and vehicle travel and hunting in the area are restricted. The Audubon Society, in cooperation with the private landowner, has established the spring as a wildlife sanctuary.

---

2 California State Parks, Tule Elk State Preserve, https://www.parks.ca.gov/pages/584/files/TuleElkSNRWebBrochure2012Rev.pdf; accessed March 24, 2026

Lokern Preserve

This 3,000-acre preserve is located 33 miles west of Bakersfield along State Highway 58. The vegetation is a mixture of Valley Saltbush scrub and Valley Sink communities, creating a very high quality for at least six species of endangered plants and animals. Access is by permission only.

Mourning Cloak Ranch

This 20-acre ranch is a privately owned botanic garden located west of Tehachapi in the Golden Hills area. Much of the garden is planted with native vegetation, but some non-natives are included in the mix of plant materials.

The United States Bureau of Land Management (Department of the Interior) and the United States Forest Service (Department of Agriculture)

These agencies manage large areas of public lands in Kern County, including lands within the Sequoia National Forest, which encompasses over 1.1 million acres, with approximately 663,000 acres managed within the Kern River Ranger District. [3][4]

United States Army Corps of Engineers

In the early 1980s, the United States Army Corps of Engineers (USACE) designated a 1,380-acre Wildlife Management Area on the South Fork of the Kern River at Lake Isabella. This area preserves an example of willow/cottonwood riparian forest, as well as providing habitat for numerous species of wildlife.

The Center for Natural Lands Management – Sand River Preserve and Semitropic Ridge Reserve

The Center for Natural Lands Management (CNLM) manages a total of 3,270 acres in Kern County in two holdings. The Sand Ridge Preserve is 270 acres located 15 miles east of Bakersfield, and is one of the few remaining areas with examples of original flora and fauna once common in the lower San Joaquin Valley. [5]The sand ridge on which the Preserve is situated winds along the northwest bank of Caliente Creek, an intermittent stream with headwaters in the Sierra Nevada and Paiute Mountains. The Semitropic Ridge Preserve is a 3,000-acre preserve located in the southern San Joaquin Valley, 30 miles northwest of

---

3 Bureau of Land Management, Bakersfield Field Office, available at: https://www.blm.gov/office/bakersfield-field-office , accessed April 30, 2026

4 USFS, Welcome to Sequoia National Forest, available at: https://www.fs.usda.gov/r05/sequoia , accessed April 30, 2026

5 CNLM, Sand-Ridge, available at: https://www.cnlm.org/portfolio_page/sand-ridge/ , accessed April 30, 2026

Bakersfield, along Corcoran Road and north of Highway 46. The animals that make their home at the Semitropic Ridge Preserve include the San Joaquin kit fox, blunt-nosed leopard lizard, San Joaquin antelope ground squirrel, and the Tipton kangaroo rats. Other species of interest include horned lizard, golden eagle, burrowing owl, weasel, and coyote. Originally, this preserve was named Paine Preserve. Access to the preserve is by permission only.

National Audubon Society, California Chapter – Kern River Preserve

The National Audubon Society manages the 1,120-acre Kern River Preserve located along the South Fork Kern River near Weldon. At elevations between 2,600 and 2,700 feet, the preserve is centered along the South Fork. Several small irrigation ditches and beaver ponds are scattered about the site. On these rich alluvial soils with their accompanying high water table, a dense growth of riparian trees and shrubs is well established and is referred to as the Great Valley cottonwood forest habitat. Covering about 870 acres, this area is dedicated as a riparian forest sanctuary, while the remaining 250 acres of the preserve are leased out for cattle grazing and farming. The riparian forest contains only two tree species: Fremont cottonwood and red willow. The South Fork Valley forest is the largest contiguous remaining riparian area in California. In addition, the preserved wildlife is abundant. The yellow-billed cuckoo, Endangered in California, uses the riparian woodland for nesting sites, as do many species of hawk, owl, and songbirds. More than 240 bird species have been recorded.

Kern Primrose Sphinx Moth Walker Basin Preserve

In 2001, the US Fish and Wildlife Service awarded an $800,000.00 grant from the Land Acquisition and Habitat Conservation Planning Program to the State of California to acquire 300 to 400 acres of privately held land in Walker Basin occupied by the host plants for what is considered one of the only remaining colonies of this federally threatened moth species.

4.4.1.3 Sensitive Vegetation Communities

Sensitive vegetation communities are natural communities and habitats that are either unique, of relatively limited distribution in the region, of particularly high wildlife value, or provide habitat to Rare or Endangered Species. These resources have been defined by federal, state, and local government conservation programs. The California Natural Diversity Database was used to identify sensitive vegetation communities located in the County. Sensitive vegetation communities known to occur within the area include Stabilized Interior Dunes, Valley Sink Scrub, Valley Saltbush Scrub, Valley Needlegrass Grassland, Valley Scaton Grassland, Wildflower Field, Alkali Seep, Coastal and Valley Freshwater Marsh, Great Valley Cottonwood Riparian Forest, Great Valley Mesquite Scrub, Valley Oak Woodland, and

Southern Interior Cypress Forest. (The complete list of sensitive vegetation communities in the County is included in **Table 4.4-1,** below.) The most common sensitive communities in Kern County are:

Valley Sink Scrub

Valley sink scrub is characterized by low, open to dense succulent shrublands dominated by alkali-tolerant Chenopods, especially iodinebush (*Allenrolfea occidentalis*) or *Sueda* species. Valley sink scrub communities usually have no understory, though red brome (*Bromus rubens*) may occur. Other species may include recurved larkspur (*Delphinium recurvatum*), desert saltgrass (*Distichlis spicata*), rusty molly (*Kochia californica*), boraxweed (*Nitrophila occidentalis*), Parish's pickleweed (*Salicornia subterminalis*), alkali dropseed (*Sporobolus airoides*), shrubby seablite (*Sueda fructicosa*), and iodineweed (*S. torreyana*). Annual species are most visible between January and April while perennial species are more pronounced from March to September. Valley sink scrub occurs in heavy saline and/or alkaline clay soils of lakebeds or playas. High groundwater provides capillary water for perennial species. Soil surfaces often appear as a dark, sticky, clay soil overlain with a white salty crust.

Valley Saltbush Scrub

Valley saltbush scrub is characterized by open, gray, or blue-green chenopod shrubs (10 to 40 percent cover) with a low, herbaceous, annual understory. Cover types are dominated by alkali saltbush (*Atriplex polycarpa*) or spinescale (*A. spinifera*), with arrowscale (*A. phyllostegia*), Valley larkspur (*Delphinium recurvatum*), alkali heath (*Frankenia salina*), alkali golden bush (*Isocoma acradenia* ssp. *bracteosa*), bird's eyes (*Gilia tricolor*), common spikeweed (*Hemizonia pungens*), and cream cups (*Platystemon californicus*). Most perennials (except spinescale) flower from May through September. The annuals (and spinescale) are active from January through April. These communities are typically found on sandy to loamy soils without surface alkalinity, largely on rolling, dissected alluvial fans with low relief. Valley saltbush scrub occurs in the southern and southwestern San Joaquin Valley and the Carrizo Plains of San Luis Obispo County. This once extensive community has been nearly extirpated by agricultural conversion, flood control, and groundwater pumping.

Valley Needlegrass Grassland

Valley needlegrass grasslands are characterized by bunches of purple needlegrass (*Nassella pulchra*) with island pink yarrow (*Achillea borealis*), blow-wives (*Achyrachaena mollis*), false dandelion (*Agoseris heterophylla*), wild oats (*Avena fatua*), common goldenstar (*Bloomeria crocea*), golden brodiaea (*Triteleia ixiodes*), ripgut brome (*Bromus diandrus*), soft chess (*B. mollis*), red brome (*B. rubens*), soap plant (*Chlorogalum pomeridianum*), purple clarkia (*Clarkia purpurea*), California melic (*Melica californica*), chapparal oniongrass (*M. imperfecta*), shooting star (*Dodecatheon* spp.) valley tassels (*Castillea attenuate*),

Plantain (*Plantago erecta*), one-sided bluegrass (*Poa scabrella*), and nodding needlegrass (*Nasella cernua*). Native and introduced annuals occur between the perennials and may actually exceed the bunchgrasses in cover. Soils are usually fine-textured clay that is moist or waterlogged during winter, but very dry in summer. Formerly extensive around the Sacramento, San Joaquin, and Salinas Valleys, as well as the Los Angeles Basin, valley needlegrass grasslands have since been reduced considerably.

Valley Sacaton Grassland

Valley Sacaton grassland is described as a tussock-forming grassland dominated by alkali dropseed (*Sporobolus airoides*). Other species may include desert saltgrass (*Distichlis spicata*) and dwarf barley (*Hordeum depressum*). Valley Sacaton grassland occurs on fine-textured, poorly drained alkaline soils. Most sites have a high water table and/or are overflowed during winter flood events.

Coastal and Valley Freshwater Marsh

Freshwater marshes are highly productive environments that support many species of distinctive plants and animals. Freshwater marshes are semi-dry to wet areas of standing or slow-moving water habitats less than 152 m (500 feet) above mean sea level that are usually the result of water runoff from mountainous regions. Marshes in Southern California often dry up or become quite confined during the dry season. Therefore, plants in this community must be tolerant of dry soils for at least part of the year. Common vegetation in these habitats include water cress (*Rorippa nasturtium-aquaticum*), the water smartweeds and knotweed (*Polygonum amphibium* and *punctatum*, *Polygonum arenastrum*), pond lily (*Nuphar luteum*), common cattail (*Typha latifolia*), yerba mansa (*Anemopsis californica*), western goldenrod (*Euthamia occidentalis*), biennial sagewort (*Artemisia biennis*), mosquito fern (*Azolla filicoides*), tall flatsedge (*Cyperus eragrostis*), and species of duckweed (*Lemna* spp.), tule (*Scirpus* spp.), sedge (*Carex* spp.), rush (*Juncus* spp.) and pondweed (*Potamogeton* spp.).

Great Valley Cottonwood Riparian Forest

Great Valley cottonwood riparian forests are characterized by dense, broad-leaved, winter-deciduous riparian trees dominated by Fremont cottonwood and Gooding's willow (*Salix gooddingii variabilis*). The understory is usually dense, consisting of sapling Fremont cottonwood and Gooding's willow. California wild grape (*Vitis californica*), buttonbush (*Cephalanthus occidentalis*), wild ryegrass (*Elymus triticoides*), sandbar willow (*Salix hindsiana*), red willow (*S. laevigata*), yellow willow (*S. lasiandra*), and red willow (*S. lasiolepis*) are also commonly present. Shade-tolerant species such as boxelder (*Acer negundo californica*) or Oregon ash (*Fraxinus latifolia*) may also occur, but frequent flooding prevents these species from reaching the canopy. Great Valley cottonwood riparian forests occur on fine-grained alluvial soils near perennial or nearly perennial streams.

Great Valley Mesquite Scrub

Great Valley mesquite scrub is characterized as an open woodland or savanna dominated by honey mesquite (*Prosopis glandulosa torreyana*) and allscale (*Atriplex polycarpa*). The understory is grassy and usually dominated by non-native annual species such as red brome (*Bromus rubens*). Great Valley mesquite scrub occurs on sandy loam soils of alluvial origin in areas with a high water table as a result of Sierran snowmelt.

Waters and Wetlands

Kern County is a diverse region that includes several types of waters and wetlands. These waters range from concrete-lined urban streams, reservoirs, and agricultural ditches to natural rivers, desert washes, and mountain lakes. Lakes, rivers, streams, and other water bodies are termed "jurisdictional waters" when they are protected by federal and/or state law. Special aquatic sites, which include wetlands, are considered an important subset of jurisdictional waters. State and federal resource agencies regulate activities that take place within or could affect jurisdictional waters and associated riparian resources. In order to identify jurisdictional features and define the jurisdictional limits, state and federal resource agencies have developed regulations (discussed below), which serve as legal definitions for jurisdictional waters and wetlands.

4.4.1.4 Special Status Species

Special-status species are generally defined as: (1) species listed as a candidate, threatened, or endangered under the federal or state Endangered Species Act; (2) species considered rare or endangered under the California Environmental Quality Act; (3) plants considered "Rare, Threatened, or Endangered in California" by the California Native Plant Society (Lists 1B and 2); (4) animal listed as "species of special concern" by the state; and (5) animals fully protected in California by the Fish and Game Code.

The following discussion is based on a background search of special-status species that are documented in the CNDDB, the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants, and the US Fish and Wildlife Service's (USFWS) Endangered and Threatened species list. The background search was regional in scope and focused on the documented occurrences within the boundaries of Kern County.

The search revealed 385 special status species within the region: 208 plants and 177 wildlife. **Table 4.4-1, Rare and Endangered Plant Species that May Occur in Kern County**, provides a list of special-status plant species that are documented in the region and their current protective status. **Table 4.4-2, Special Status Wildlife and Fish Species That May Occur in Kern County**, provides a list of special-status

wildlife and fish species that are documented in the region, their habitat, and current protective status. In addition to these special-status species, the search revealed eight sensitive natural communities.

Table 4.4-1
Rare and Endangered Plant Species Recorded in Kern County

Scientific Name	Common Name	Status		
		Federal	State	CDFW
Yucca brevifolia	western Joshua tree	None	Candidate Threatened	-
Wildflower Field	Wildflower Field	None	None	-
Viola pinetorum ssp. grisea	grey-leaved violet	None	None	-
Valley Sink Scrub	Valley Sink Scrub	None	None	-
Valley Saltbush Scrub	Valley Saltbush Scrub	None	None	-
Valley Sacaton Grassland	Valley Sacaton Grassland	None	None	-
Valley Oak Woodland	Valley Oak Woodland	None	None	-
Valley Needlegrass Grassland	Valley Needlegrass Grassland	None	None	-
Tropidocarpum californicum	Kings gold	None	None	-
Triteleia piutensis	Piute Mountains triteleia	None	None	-
Trifolium dedeckerae	Dedeckers clover	None	None	-
Trichostema ovatum	San Joaquin bluecurls	None	None	-
Tortula californica	California screw moss	None	None	-
Syntrichopappus lemmonii	Lemmons syntrichopappus	None	None	-
Symphyotrichum defoliatum	San Bernardino aster	None	None	-
Stylocline masonii	Masons neststraw	None	None	-
Stylocline citroleum	oil neststraw	None	None	-
Streptanthus medeirosii	Tejon jewelflower	None	None	-
Streptanthus cordatus var. piutensis	Piute Mountains jewelflower	None	None	-
Stabilized Interior Dunes	Stabilized Interior Dunes	None	None	-
Southern Interior Cypress Forest	Southern Interior Cypress Forest	None	None	-
Sidalcea neomexicana	salt spring checkerbloom	None	None	-
Sidalcea hickmanii ssp. parishii	Parishs checkerbloom	None	Rare	-
Senna covesii	Coves cassia	None	None	-
Selaginella asprella	bluish spike-moss	None	None	-
Sclerocactus polyancistrus	Mojave fish-hook cactus	None	None	-
Schoenoplectiella saximontana	Rocky Mountain bulrush	None	None	-
Saltugilia latimeri	Latimers woodland-gilia	None	None	-
Ribes menziesii var. ixoderme	aromatic canyon gooseberry	None	None	-
Puccinellia simplex	California alkali grass	None	None	-
Pseudobahia peirsonii	San Joaquin adobe sunburst	Threatened	Endangered	-
Plagiobryoides vinosula	wine-colored tufa moss	None	None	-

Scientific Name	Common Name	Status		
		Federal	State	CDFW
Plagiobothrys torreyi var. perplexans	chaparral popcornflower	None	None	-
Physaria ludoviciana	silver bladderpod	None	None	-
Phacelia novenmillensis	Nine Mile Canyon phacelia	None	None	-
Phacelia nashiana	Charlottes phacelia	None	None	-
Phacelia exilis	Transverse Range phacelia	None	None	-
Perideridia pringlei	adobe yampah	None	None	-
Perideridia gairdneri ssp. gairdneri	California Gairdners yampah	None	None	-
Perideridia bacigalupii	Bacigalupis yampah	None	None	-
Pentachaeta fragilis	fragile pentachaeta	None	None	-
Packera ionophylla	Tehachapi ragwort	None	None	-
Oreonana vestita	woolly mountain-parsley	None	None	-
Oreocarya tumulosa	New York Mountains oreocarya	None	None	-
Opuntia basilaris var. treleasei	Bakersfield cactus	Endangered	Endangered	-
Nemophila parviflora var. quercifolia	oak-leaved nemophila	None	None	-
Nemacladus twisselmannii var. twisselmannii	Twisselmanns nemacladus	None	Rare	-
Nemacladus secundiflorus var. secundiflorus	large-flowered nemacladus	None	None	-
Nemacladus secundiflorus var. robbinsii	Robbins nemacladus	None	None	-
Nemacladus gracilis	graceful nemacladus	None	None	-
Nemacladus calcaratus	Chimney Creek nemacladus	None	None	-
Nemacladus bellus	beautiful threadplant	None	None	-
Navarretia setiloba	Piute Mountains navarretia	None	None	-
Navarretia peninsularis	Baja navarretia	None	None	-
Muilla coronata	crowned muilla	None	None	-
Muhlenbergia utilis	aparejo grass	None	None	-
Monolopia congdonii	San Joaquin woollythreads	Endangered	None	-
Monardella linoides ssp. oblonga	Tehachapi monardella	None	None	-
Monardella linoides ssp. anemonoides	southern Sierra monardella	None	None	-
Monardella exilis	Mojave monardella	None	None	-
Monardella beneolens	sweet-smelling monardella	None	None	-
Microseris sylvatica	sylvan microseris	None	None	-
Mentzelia tridentata	creamy blazing star	None	None	-
Mentzelia eremophila	solitary blazing star	None	None	-
Madia radiata	showy golden madia	None	None	-
Lupinus peirsonii	Peirsons lupine	None	None	-
Lupinus elatus	silky lupine	None	None	-
Lomatium shevockii	Owens Peak lomatium	None	None	-
Loeflingia squarrosa var. artemisiarum	sagebrush loeflingia	None	None	-
Lilium humboldtii ssp. ocellatum	ocellated humboldt lily	None	None	-
Lewisia disepala	Yosemite lewisia	None	None	-

Scientific Name	Common Name	Status		
		Federal	State	CDFW
Lessingia tenuis	spring lessingia	None	None	-
Leptosiphon serrulatus	Madera leptosiphon	None	None	-
Leptosiphon grandiflorus	large-flowered leptosiphon	None	None	-
Leptosiphon aureus	bristly leptosiphon	None	None	-
Lepidium jaredii ssp. jaredii	Jareds pepper-grass	None	None	-
Layia munzii	Munzs tidy-tips	None	None	-
Layia leucopappa	Comanche Point layia	None	None	-
Layia heterotricha	pale-yellow layia	None	None	-
Lasthenia glabrata ssp. coulteri	Coulters goldfields	None	None	-
Lasthenia ferrisiae	Ferris goldfields	None	None	-
Lasthenia chrysantha	alkali-sink goldfields	None	None	-
Juglans californica	southern California black walnut	None	None	-
Joshua Tree Woodland	Joshua Tree Woodland	None	None	-
Imperata brevifolia	California satintail	None	None	-
Hordeum intercedens	vernal barley	None	None	-
Heuchera caespitosa	urn-flowered alumroot	None	None	-
Heterotheca shevockii	Shevocks golden-aster	None	None	-
Hesperocyparis nevadensis	Piute cypress	None	None	-
Hesperevax caulescens	hogwallow starfish	None	None	-
Hecastocleis shockleyi	prickle-leaf	None	None	-
Great Valley Mesquite Scrub	Great Valley Mesquite Scrub	None	None	-
Great Valley Cottonwood Riparian Forest	Great Valley Cottonwood Riparian Forest	None	None	-
Goodmania luteola	golden goodmania	None	None	-
Githopsis tenella	delicate bluecup	None	None	-
Gilia leptantha ssp. pinetorum	pine gilia	None	None	-
Gilia latiflora ssp. cuyamensis	Cuyama gilia	None	None	-
Gilia interior	inland gilia	None	None	-
Galium angustifolium ssp. onycense	Onyx Peak bedstraw	None	None	-
Fritillaria striata	striped adobe-lily	None	Threatened	-
Fritillaria pinetorum	pine fritillary	None	None	-
Fritillaria brandegeei	Greenhorn fritillary	None	None	-
Fritillaria agrestis	stinkbells	None	None	-
Frasera tubulosa	Covilles green-gentian	None	None	-
Frasera neglecta	pine green-gentian	None	None	-
Fimbristylis thermalis	hot springs fimbristylis	None	None	-
Euphorbia vallis-mortae	Death Valley sandmat	None	None	-
Eschscholzia rhombipetala	diamond-petaled California poppy	None	None	-
Eschscholzia procera	Kernville poppy	None	None	-
Eschscholzia minutiflora ssp. twisselmannii	Red Rock poppy	None	None	-

Scientific Name	Common Name	Status		
		Federal	State	CDFW
Eschscholzia lemmonii ssp. kernensis	Tejon poppy	None	None	-
Eschscholzia hypecoides	San Benito poppy	None	None	-
Erythranthe sierrae	Sierra Nevada monkeyflower	None	None	-
Erythranthe shevockii	Kelso Creek monkeyflower	None	None	-
Erythranthe rhodopetra	Red Rock Canyon monkeyflower	None	None	-
Erythranthe rhodopetra	Red Rock Canyon monkeyflower	None	None	-
Erythranthe inconspicua	small-flowered monkeyflower	None	None	-
Eryngium spinosepalum	spiny-sepaled button-celery	None	None	-
Eriophyllum mohavense	Barstow woolly sunflower	None	None	-
Eriophyllum lanatum var. obovatum	southern Sierra woolly sunflower	None	None	-
Eriophyllum lanatum var. hallii	Fort Tejon woolly sunflower	None	None	-
Eriophyllum confertiflorum var. tanacetiflorum	tansy-flowered woolly sunflower	None	None	-
Eriogonum temblorense	Temblor buckwheat	None	None	-
Eriogonum nudum var. indictum	protruding buckwheat	None	None	-
Eriogonum kennedyi var. pinicola	Kern buckwheat	None	None	-
Eriogonum kennedyi var. alpigenum	southern alpine buckwheat	None	None	-
Eriogonum gossypinum	cottony buckwheat	None	None	-
Eriogonum crocatum	Conejo buckwheat	None	Rare	-
Eriogonum callistum	Tehachapi buckwheat	None	None	-
Eriogonum breedlovei var. shevockii	Needles buckwheat	None	None	-
Eriogonum breedlovei var. breedlovei	Breedloves buckwheat	None	None	-
Erigeron multiceps	Kern River daisy	None	None	-
Erigeron aequifolius	Halls daisy	None	None	-
Ericameria gilmanii	Gilmans goldenbush	None	None	-
Eriastrum tracyi	Tracys eriastrum	None	Rare	-
Eriastrum sparsiflorum	few-flowered eriastrum	None	None	-
Eriastrum rosamondense	Rosamond eriastrum	None	None	-
Eriastrum hooveri	Hoovers eriastrum	Delisted	None	-
Eremalche parryi ssp. kernensis	Kern mallow	Endangered	None	-
Dudleya abramsii ssp. calcicola	limestone dudleya	None	None	-
Diplacus pictus	calico monkeyflower	None	None	-
Delphinium recurvatum	recurved larkspur	None	None	-
Delphinium purpusii	rose-flowered larkspur	None	None	-
Delphinium parryi ssp. purpureum	Mt. Pinos larkspur	None	None	-
Delphinium inopinum	unexpected larkspur	None	None	-
Delphinium gypsophilum ssp. parviflorum	small-flowered gypsum-loving larkspur	None	None	-
Deinandra paniculata	paniculate tarplant	None	None	-
Deinandra mohavensis	Mojave tarplant	None	Endangered	-
Deinandra halliana	Halls tarplant	None	None	-

Scientific Name	Common Name	Status		
		Federal	State	CDFW
Deinandra arida	Red Rock tarplant	None	Rare	-
Cymopterus deserticola	desert cymopterus	None	None	-
Cryptantha incana	Tulare cryptantha	None	None	-
Cryptantha clokeyi	Clokeys cryptantha	None	None	-
Cordylanthus rigidus ssp. brevibracteatus	short-bracted birds-beak	None	None	-
Cordylanthus eremicus ssp. kernensis	Kern Plateau birds-beak	None	None	-
Cordylanthus eremicus ssp. eremicus	desert birds-beak	None	None	-
Convolvulus simulans	small-flowered morning-glory	None	None	-
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	None	None	-
Claytonia peirsonii ssp. yorkii	Yorks spring beauty	None	None	-
Claytonia parviflora ssp. grandiflora	streambank spring beauty	None	None	-
Clarkia xantiana ssp. parviflora	Kern Canyon clarkia	None	None	-
Clarkia xantiana ssp. parviflora	Kern Canyon clarkia	None	None	-
Clarkia tembloriensis ssp. calientensis	Vaseks clarkia	None	None	-
Clarkia exilis	slender clarkia	None	None	-
Cirsium crassicaule	slough thistle	None	None	-
Chorizanthe spinosa	Mojave spineflower	None	None	-
Chorizanthe palmeri	Palmers spineflower	None	None	-
Chorizanthe leptotheca	Peninsular spineflower	None	None	-
Chloropyron molle ssp. hispidum	hispid salty birds-beak	None	None	-
Ceanothus pinetorum	Kern ceanothus	None	None	-
Caulanthus lemmonii	Lemmons jewelflower	None	None	-
Caulanthus californicus	California jewelflower	Endangered	Endangered	-
Castilleja plagiotoma	Mojave paintbrush	None	None	-
Carlquistia muirii	Muirs tarplant	None	None	-
Canbya candida	white pygmy-poppy	None	None	-
Camissonia kernensis ssp. kernensis	Kern County evening-primrose	None	None	-
Camissonia integrifolia	Kern River evening-primrose	None	None	-
Calystegia peirsonii	Peirsons morning-glory	None	None	-
Calystegia malacophylla var. berryi	Berrys morning-glory	None	None	-
Calycadenia spicata	spicate calycadenia	None	None	-
Calochortus westonii	Shirley Meadows star-tulip	None	None	-
Calochortus striatus	alkali mariposa-lily	None	None	-
Calochortus palmeri var. palmeri	Palmers mariposa-lily	None	None	-
Calochortus excavatus	Inyo County star-tulip	None	None	-
Azolla microphylla	Mexican mosquito fern	None	None	-
Atriplex tularensis	Bakersfield smallscale	None	Endangered	-
Atriplex subtilis	subtle orache	None	None	-
Atriplex minuscula	lesser saltscale	None	None	-

Scientific Name	Common Name	Status		
		Federal	State	CDFW
Atriplex coronata var. vallicola	Lost Hills crownscale	None	None	-
Atriplex coronata var. coronata	crownscale	None	None	-
Atriplex cordulata var. erecticaulis	Earlimart orache	None	None	-
Atriplex cordulata var. cordulata	heartscale	None	None	-
Astragalus subvestitus	Kern County milk-vetch	None	None	-
Astragalus preussii var. laxiflorus	Lancaster milk-vetch	None	None	-
Astragalus macrodon	Salinas milk-vetch	None	None	-
Astragalus hornii var. hornii	Horns milk-vetch	None	None	-
Astragalus ertterae	Walker Pass milk-vetch	None	None	-
Arctostaphylos glandulosa ssp. gabrielensis	San Gabriel manzanita	None	None	-
Antirrhinum ovatum	oval-leaved snapdragon	None	None	-
Angelica callii	Calls angelica	None	None	-
Androsace elongata ssp. acuta	California androsace	None	None	-
Amsinckia furcata	forked fiddleneck	None	None	-
Amsinckia douglasiana	Douglas fiddleneck	None	None	-
Almutaster pauciflorus	alkali marsh aster	None	None	-
Allium shevockii	Spanish Needle onion	None	None	-
Allium howellii var. howellii	Howells onion	None	None	-
Allium howellii var. clokeyi	Mt. Pinos onion	None	None	-
Allium atrorubens var. cristatum	Inyo onion	None	None	-
Alkali Seep	Alkali Seep	None	None	-

Source: California Department of Fish and Wildlife, CNDDB Quick View Tool, 2026, Available at: https://apps.wildlife.ca.gov/bios6/?tool=cnddbqv

Table 4.2-2
Special Status Wildlife and Fish Species in Kern County

Scientific Name	Common Name	Status		
		Federal	State	CDFW
Amphibians				
Taricha torosa	Coast Range newt	None	None	SSC
Spea hammondii	western spadefoot	Proposed Threatened	None	SSC
Rana muscosa	southern mountain yellow-legged frog	Endangered	Endangered	WL
Rana draytonii	California red-legged frog	Threatened	None	SSC
Rana boylii pop. 5	foothill yellow-legged frog - south Sierra DPS	Endangered	Endangered	-
Ensatina eschscholtzii croceater	yellow-blotched salamander	None	None	WL

Scientific Name	Common Name	Status		
		Federal	State	CDFW
Batrachoseps stebbinsi	Tehachapi slender salamander	None	Threatened	-
Batrachoseps simatus	Kern Canyon slender salamander	Proposed Threatened	Threatened	-
Batrachoseps robustus	Kern Plateau salamander	None	None	-
Batrachoseps relictus	relictual slender salamander	Proposed Endangered	None	SSC
Batrachoseps bramei	Fairview slender salamander	None	None	-
Batrachoseps altasierrae	Greenhorn Mountains slender salamander	None	None	-
Anaxyrus californicus	arroyo toad	Endangered	None	SSC
Ambystoma californiense pop. 1	California tiger salamander - central California DPS	Threatened	Threatened	WL
Birds				
Xanthocephalus xanthocephalus	yellow-headed blackbird	None	None	SSC
Vireo vicinior	gray vireo	None	None	SSC
Vireo huttoni unitti	Catalina Huttons vireo	None	None	SSC
Vireo bellii pusillus	least Bells vireo	Endangered	Endangered	-
Toxostoma lecontei	Le Contes thrasher	None	None	SSC
Toxostoma crissale	Crissal thrasher	None	None	SSC
Toxostoma bendirei	Bendires thrasher	None	None	SSC
Strix occidentalis occidentalis	California Spotted Owl	Proposed Endangered; Proposed Threatened	None	SSC
Spizella breweri	Brewers sparrow	None	None	-
Spinus lawrencei	Lawrences goldfinch	None	None	-
Setophaga petechia	yellow warbler	None	None	SSC
Selasphorus rufus	rufous hummingbird	None	None	-
Progne subis	purple martin	None	None	SSC
Pooecetes gramineus affinis	Oregon vesper sparrow	None	None	SSC
Polioptila melanura	black-tailed gnatcatcher	None	None	WL
Plegadis chihi	white-faced ibis	None	None	WL
Piranga rubra	summer tanager	None	None	SSC
Pelecanus occidentalis californicus	California brown pelican	Delisted	Delisted	-
Pelecanus erythrorhynchos	American white pelican	None	None	SSC
Passerculus sandwichensis rostratus	large-billed savannah sparrow	None	None	SSC
Pandion haliaetus	osprey	None	None	WL
Nycticorax nycticorax	black-crowned night heron	None	None	-
Numenius americanus	long-billed curlew	None	None	WL
Nannopterum auritum	double-crested cormorant	None	None	WL
Myiarchus tyrannulus	brown-crested flycatcher	None	None	WL
Melanerpes lewis	Lewis woodpecker	None	None	-
Leiothlypis virginiae	Virginias warbler	None	None	WL
Lanius ludovicianus	loggerhead shrike	None	None	SSC
Icteria virens	yellow-breasted chat	None	None	SSC

Scientific Name	Common Name	Status		
		Federal	State	CDFW
Haliaeetus leucocephalus	bald eagle	Delisted	Endangered	FP
Gymnogyps californianus	California condor	Endangered	Endangered	FP
Falco peregrinus anatum	American peregrine falcon	Delisted	Delisted	-
Falco mexicanus	prairie falcon	None	None	WL
Falco columbarius	merlin	None	None	WL
Eremophila alpestris actia	California horned lark	None	None	WL
Empidonax traillii extimus	southwestern willow flycatcher	Endangered	Endangered	-
Empidonax traillii	willow flycatcher	None	Endangered	-
Elanus leucurus	white-tailed kite	None	None	FP
Egretta thula	snowy egret	None	None	-
Dendrocygna bicolor	fulvous whistling-duck	None	None	SSC
Dendragapus fuliginosus howardi	Mount Pinos sooty grouse	None	None	SSC
Cypseloides niger	black swift	None	None	SSC
Contopus cooperi	olive-sided flycatcher	None	None	SSC
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Threatened	Endangered	-
Circus hudsonius	northern harrier	None	None	SSC
Chlidonias niger	black tern	None	None	SSC
Chaetura vauxi	Vauxs swift	None	None	SSC
Buteo swainsoni	Swainsons hawk	None	Threatened	-
Buteo regalis	ferruginous hawk	None	None	WL
Botaurus lentiginosus	American bittern	None	None	-
Botaurus exilis	least bittern	None	None	SSC
Aythya americana	redhead	None	None	SSC
Athene cunicularia	burrowing owl	None	Candidate Endangered	SSC
Astur cooperii	Coopers hawk	None	None	WL
Astur atricapillus	American goshawk	None	None	SSC
Asio otus	long-eared owl	None	None	SSC
Asio flammeus	short-eared owl	None	None	SSC
Artemisiospiza belli belli	Bells sparrow	None	None	WL
Ardea herodias	great blue heron	None	None	-
Ardea alba	great egret	None	None	-
Aquila chrysaetos	golden eagle	None	None	FP | WL
Antigone canadensis tabida	greater sandhill crane	None	Threatened	FP
Antigone canadensis canadensis	lesser sandhill crane	None	None	SSC
Anarhynchus nivosus nivosus	western snowy plover	Threatened	None	SSC
Anarhynchus montanus	mountain plover	None	None	SSC
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	None	None	WL
Agelaius tricolor	tricolored blackbird	None	Threatened	SSC
Agelaius phoeniceus aciculatus	Kern red-winged blackbird	None	None	SSC
Accipiter striatus	sharp-shinned hawk	None	None	WL
Crustaceans				
Branchinecta lynchi	vernal pool fairy shrimp	Threatened	None	-

Scientific Name	Common Name	Status		
		Federal	State	CDFW
Branchinecta campestris	pocket pouch fairy shrimp	None	None	-
Fish				
Siphateles bicolor mohavensis	Mohave tui chub	Endangered	Endangered	
Oncorhynchus mykiss gilberti	Kern River rainbow trout	None	None	
Mylopharodon conocephalus	hardhead	None	None	
Lavinia exilicauda exilicauda	Sacramento hitch	None	None	
Lampetra hubbsi	Kern brook lamprey	None	None	
Insects				
Speyeria egleis tehachapina	Tehachapi Mountain silverspot butterfly	None	None	-
Rhaphiomidas trochilus	San Joaquin Valley giant flower-loving fly	None	None	-
Pseudocopaeodes eunus eunus	alkali skipper	None	None	-
Protodufourea zavortinki	Zavortinks protodufourea bee	None	None	-
Plebulina emigdionis	San Emigdio blue butterfly	None	None	-
Lytta morrisoni	Morrisons blister beetle	None	None	-
Lytta moesta	moestan blister beetle	None	None	-
Lytta hoppingi	Hoppings blister beetle	None	None	-
Euproserpinus euterpe	Kern primrose sphinx moth	Threatened	None	-
Euphilotes mojave	Mojave dotted-blue	None	None	-
Euphilotes glaucon comstocki	Comstocks blue butterfly	None	None	-
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Threatened	None	-
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	Proposed Threatened	None	-
Ceratochrysis gracilis	Piute Mountains cuckoo wasp	None	None	-
Bombus morrisoni	Morrison bumble bee	None	None	-
Bombus crotchii	Crotchs bumble bee	None	Candidate Endangered	-
Bombus caliginosus	obscure bumble bee	None	None	-
Andrena macswaini	An andrenid bee	None	None	-
Mammals				
Xerospermophilus mohavensis	Mohave ground squirrel	None	Threatened	-
Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened	-
Taxidea taxus	American badger	None	None	SSC
Sorex ornatus relictus	Buena Vista Lake ornate shrew	Endangered	None	SSC
Puma concolor pop. 2	mountain lion - central coast & southern California DPS	None	Threatened	-
Perognathus mollipilosus xanthonotus	yellow-eared pocket mouse	None	None	-
Perognathus inornatus	San Joaquin pocket mouse	None	None	-
Perognathus alticolus inexpectatus	Tehachapi pocket mouse	None	None	SSC
Pekania pennanti pop. 2	Fisher - southern Sierra Nevada ESU	Endangered	Threatened	SSC
Ovis canadensis sierrae	Sierra Nevada bighorn sheep	Endangered	Endangered	FP
Onychomys torridus tularensis	Tulare grasshopper mouse	None	None	SSC

Scientific Name	Common Name	Status		
		Federal	State	CDFW
Neotoma lepida intermedia	San Diego desert woodrat	None	None	-
Neotamias speciosus speciosus	lodgepole chipmunk	None	None	-
Neotamias speciosus callipeplus	Mount Pinos chipmunk	None	None	-
Myotis yumanensis	Yuma myotis	None	None	-
Myotis volans	long-legged myotis	None	None	-
Myotis thysanodes	fringed myotis	None	None	-
Myotis evotis	long-eared myotis	None	None	-
Myotis ciliolabrum	western small-footed myotis	None	None	-
Martes caurina sierrae	Sierra marten	None	None	-
Macrotus californicus	California leaf-nosed bat	None	None	SSC
Lasiurus frantzii	western red bat	None	None	SSC
Lasiurus cinereus	hoary bat	None	None	-
Lasionycteris noctivagans	silver-haired bat	None	None	-
Gulo gulo	wolverine	Threatened	Threatened	FP
Eumops perotis californicus	western mastiff bat	None	None	SSC
Euderma maculatum	spotted bat	None	None	SSC
Dipodomys simulans	Dulzura kangaroo rat	None	None	-
Dipodomys nitratoides nitratoides	Tipton kangaroo rat	Endangered	Endangered	-
Dipodomys nitratoides brevinasus	short-nosed kangaroo rat	None	None	SSC
Dipodomys ingens	giant kangaroo rat	Endangered	Endangered	-
Dipodomys heermanni heermanni	Heermanns kangaroo rat	None	None	-
Corynorhinus townsendii	Townsends big-eared bat	None	None	SSC
Cervus canadensis nannodes	tule elk	None	None	-
Canis lupus	gray wolf	Endangered	Endangered	-
Bassariscus astutus raptor	northern California ringtail	None	None	FP
Bassariscus astutus nevadensis	Nevada ringtail	None	None	FP
Aplodontia rufa californica	Sierra Nevada mountain beaver	None	None	SSC
Antrozous pallidus	pallid bat	None	None	SSC
Antilocapra americana	pronghorn	None	None	-
Ammospermophilus nelsoni	Nelsons (=San Joaquin) antelope squirrel	None	Threatened	-
Mollusks				
Pyrgulopsis greggi	Kern River pyrg	None	None	-
Margaritifera falcata	western pearlshell	None	None	-
Helminthoglypta uvasana	Grapevine shoulderband	None	None	-
Helminthoglypta greggi	Mohave shoulderband	None	None	-
Helminthoglypta concolor	whitefir shoulderband	None	None	-
Helminthoglypta callistoderma	Kern shoulderband	None	None	-
Gonidea angulata	western ridged mussel	None	None	-
Reptiles				
Xantusia vigilis sierrae	Sierra night lizard	None	None	SSC
Uma scoparia	Mojave fringe-toed lizard	None	None	SSC
Thamnophis hammondii	two-striped gartersnake	None	None	SSC
Thamnophis gigas	giant gartersnake	Threatened	Threatened	-

Scientific Name	Common Name	Status		
		Federal	State	CDFW
Phrynosoma blainvillii	coast horned lizard	None	None	SSC
Masticophis flagellum ruddocki	San Joaquin coachwhip	None	None	SSC
Gopherus agassizii	desert tortoise	Threatened	Endangered	-
Gambelia sila	blunt-nosed leopard lizard	Endangered	Endangered	FP
Elgaria panamintina	Panamint alligator lizard	None	None	SSC
Diadophis punctatus modestus	San Bernardino ringneck snake	None	None	-
Charina bottae umbratica	southern rubber boa	None	Threatened	-
Aspidoscelis tigris stejnegeri	coastal whiptail	None	None	SSC
Arizona elegans occidentalis	California glossy snake	None	None	SSC
Anniella stebbinsi	Southern California legless lizard	None	None	SSC
Anniella spp.	California legless lizard	None	None	SSC
Anniella pulchra	Northern California legless lizard	None	None	SSC
Anniella grinnelli	Bakersfield legless lizard	None	None	SSC
Anniella campi	Southern Sierra legless lizard	None	None	SSC
Anniella alexanderae	Temblor legless lizard	None	Candidate Endangered	SSC
Actinemys pallida	southwestern pond turtle	Proposed Threatened	None	SSC
Actinemys marmorata	northwestern pond turtle	Proposed Threatened	None	SSC

Source: California Department of Fish and Wildlife, CNDDB Quick View Tool, 2026, Available at: https://apps.wildlife.ca.gov/bios6/?tool=cnddbqv

4.4.2 REGULATORY FRAMEWORK

4.4.2.1 Federal

Federal Endangered Species Act

The USFWS, under the auspices of the Federal Endangered Species Act of 1973 (FESA), manages and protects species listed as Endangered or Threatened. The USFWS can issue a permit for incidental "take" of listed species that can result from otherwise lawful activities. Take, under the federal definition, means to harass, harm (including habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. The permitting process is used to determine if a project would jeopardize the continued existence of listed species and the mitigation measures that would be required to avoid or minimize impacts to listed species. Procedures for obtaining a permit for incidental take are set forth in Section 7 (for federal properties or where federal actions are involved) and Section 10 (for non-federal actions) of the FESA.

Candidate species do not have the full protection of the FESA; however, the USFWS advises applicants that candidate species could be elevated to listed species at any time.

The US Fish and Wildlife Service (USFWS) administers the FESA, which designates critical habitat for Endangered species. This enables USFWS to carry out its mission to conserve, protect, and enhance the nation's fish and wildlife and their habitats for the continuing benefit of people. Critical habitat areas cannot be disturbed without permission from the USFWS and other federal agencies, depending on land ownership. The USFWS also manages a system of land and waters for the conservation of wildlife and associated ecosystems. These National Wildlife Refuges are primarily managed for the preservation and protection of unique or important resources and ecosystems.

Migratory Bird Treaty Act (16 USC Section 703-711)

The Migratory Bird Treaty Act (MBTA) of 1918, implemented by the USFWS, is an international treaty that makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The MBTA requires that project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (1 February to 31 August, annually).

Bald and Golden Eagle Protection Act (16 USC Section 668)

The Bald and Golden Eagle Protection Act provides for the protection of the bald eagle (the national emblem) and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds. If compatible with the preservation of bald and golden eagles, the Secretary of the Interior may permit the taking, possession, and transportation of bald and golden eagles and nests for scientific or religious purposes, or for the protection of wildlife, agricultural, or other interests. The Secretary of the Interior may authorize the take of golden eagle nests that interfere with resource development or recovery operations. Bald eagles may not be taken for any purpose unless the Secretary issues a permit prior to the taking.

Clean Water Act (33 USC Section 1252-1376)

Section 401 of the Clean Water Act (CWA) requires an applicant to obtain certification for any activity that may result in a discharge of a pollutant into Waters of the United States. As a result, proposed fill in waters and wetlands requires coordination with the appropriate state RWQCB that administers Section 401 and provides certification. The RWQCB also plays a role in the review of water quality and wetland issues, including the avoidance and minimization of impacts. Section 401 certification is required prior to the issuance of a Section 404 permit.

Under Section 404 of the CWA, the US Army Corps of Engineers (USACE) has jurisdiction over "Wetlands" and "Waters of the United States." Permitting of activities that could discharge fill or dredge materials, or otherwise adversely modify wetlands or other waters of the United States and associated habitat, is required. Permits authorized by USACE under the CWA typically involve mitigation to offset unavoidable impacts on wetlands and other waters of the United States in a manner that achieves no net loss of wetland acres or values.

The term "waters of the US" includes (1) all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide; (2) all interstate waters including interstate wetlands; (3) all waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce; (4) all impoundments of water mentioned above; (5) all tributaries of waters mentioned above; (6) the territorial seas; and (7) all wetlands adjacent to the waters mentioned above.[6] (See 40 C.F.R. § 230.3(s)).

Federal jurisdiction is dependent upon a demonstrated nexus between the subject water feature and navigable waters or interstate commerce. Previously, the USACE had routinely asserted jurisdiction over any isolated waters that could be used by migratory birds, thus establishing an interstate commerce nexus. In *Solid Waste Agency of Northern Cook County (SWANCC) v. US Army Corps of Engineers,* the US Supreme Court determined that "non-navigable, isolated, and intrastate" waters whose sole reason for being regulated was their connection to migratory bird usage could not be regulated by the USACE. *SWANCC,* 531 U.S. 159, 172-73 (2001). Therefore, any drainage or surface water features delineated within the project site must exhibit a connection to navigability or commerce to constitute a water of the US.

Federal wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (33 C.F.R. 328.3(c)(4)). The USACE methods for determining the boundaries of jurisdictional wetlands are described in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987). The methods set forth in the manual are based on

---

6 EPA and USACE have struggled to define and apply the term "waters of the United States" which resulted in the agencies jointly promulgating the Clean Water Rule: Definition of "Waters of the United States" (WOTUS Rule) in 2015. 80 Fed. Reg. 37054. However, on June 9, 2021, EPA and USACE announced their intent to revise the definition of "waters of the United States." (See https://www.epa.gov/wotus/current-implementation-waters-united-states, accessed April 3, 2026)). The agencies are currently in the process of this revising the definition, and in the meantime, the pre-2015 regulatory definition of "Waters of the United States," i.e., Title 40, Code of Federal Regulations section 230.3(s) remains in place.

the following three indicators that are normally present in wetlands: (1) hydrology providing permanent or periodic inundation by groundwater or surface water, (2) hydric soils, and (3) hydrophytic vegetation. In order to be considered a wetland, an area must exhibit at least minimal hydric characteristics within all three parameters.

Executive Order 11990, Protection of Wetlands (May 24, 1977)

This Executive Order establishes a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. On projects with federal actions or approvals, impacts on wetlands must be identified in the environmental document. Alternatives that avoid wetlands must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm to those wetlands must be included. This must be documented in a specific Wetlands Only Practicable Alternative Finding in the final environmental document for a proposed individual improvement project.

Section 10 of the Rivers and Harbors Act (33 USC 401 et seq.)

Section 10 of the Rivers and Harbors Act is administered by the USACE. This Section requires permits in navigable waters of the United States for all structures, such as riprap, and activities, such as dredging. Navigable waters are defined as those subject to the ebb and flow of the tide and susceptible to use in their natural condition or by reasonable improvements as means of interstate transport or foreign commerce. The USACE grants or denies permits based on the effects on navigation. Most activities covered under this act are also covered under Section 404 of the CWA.

Fish and Wildlife Coordination Act (16 USC 661-666)

The Fish and Wildlife Coordination Act (FWCA) applies to federal projects where the waters of any stream or other body of water are impounded, diverted, deepened, or otherwise modified. Project proponents are required to consult with the US Fish and Wildlife Service (USFWS) and the CDFW. These agencies prepare reports and recommendations that document project effects on wildlife and identify measures that may be adopted to prevent loss or damage to plant and animal resources. Provisions of the FWCA are implemented through the National Environmental Policy Act and Section 404 permit processes.

National Environmental Policy Act

The National Environmental Policy Act (NEPA) is implemented by regulations included in the Code of Federal Regulations (40 CFR § 1500 *et seq*.), which require careful consideration of the harmful effects of federal actions or plans, including projects that receive federal funds, if they may have a significant

adverse effect on the environment. NEPA mandates that all federal agencies carry out their regulations, policies, and programs in accordance with NEPA's policies of environmental protection. NEPA encourages the protection of all aspects of the environment and requires federal agencies to utilize a systematic, interdisciplinary approach to agency decision-making that will ensure the integrated use of natural sciences such as geology. While NEPA compliance is not required for the project, NEPA compliance will be required for transportation improvement projects that will be financed using federal funds. Some development projects (such as low-income housing) also use federal funds and are subject to NEPA. The regulations also require projects requiring NEPA review to seek to avoid or minimize adverse effects of proposed actions, and restore and enhance environmental quality as much as possible.

The Council on Environmental Quality (CEQ) provides guidance on the implementation of NEPA, and the United States Environmental Protection Agency (EPA) carries out certain administrative aspects of the NEPA process, including review of environmental documents. NEPA requires that the federal government give appropriate consideration to the potential adverse environmental impacts of major federal actions, including impacts to biological resources.

4.4.2.2 State

California Endangered Species Act

The California Endangered Species Act (CESA) establishes state policy to conserve, protect, restore, and enhance Threatened or Endangered species and their habitats. CESA mandates that state agencies should not approve projects that would jeopardize the continued existence of Threatened or Endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. CESA definitions of Endangered and Threatened species parallel those defined in the FESA. Take authorizations from CDFW are required for any unavoidable impact to state-listed species resulting from proposed projects.

The CDFW designates a species as a species of special concern prior to considering the species for protected status. Species of special concern are those species for which CDFW has information indicating that the species is declining.

Native Plant Protection Act (Fish and Game Code Sections 1900-1913)

California's Native Plant Protection Act (NPPA) requires all state agencies to establish criteria for determining if a species, subspecies, or variety of native plant is Endangered or Rare. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use which would adversely impact listed plants. This requirement allows CDFW to salvage listed plant species that would otherwise be destroyed.

Fish and Game Code Sections 1600–1616

The CDFW, through provisions of the Fish and Game Code Sections 1600–1616, is empowered to issue agreements (Streambed Alteration Agreements) for projects that would "divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake" (Fish and Game Code Section 1602[a]). Streams and rivers are defined by the presence of a channel bed and banks, and subject to water flow. The limits of CDFW jurisdiction are also based on riparian habitat and may include riparian areas that do not meet USACE criteria for soils and/or hydrology (e.g., where riparian woodland canopy extends beyond the banks of a stream away from frequently saturated soils).

State Park System

The State Park System (SPS) is the most ecologically diverse system of protected lands in the state. The long-term preservation of the state's biological and physical values is a core function of the California Department of Parks and Recreation. Sustaining these values is a high priority of its acquisition (and restoration) program.

California's Important Bird Area

Kern County is located on the Pacific Flyway, and various efforts have been undertaken to conserve the County's migratory bird habitat. California's Audubon Important Bird Area (IBA) Program was launched in 1996. With the initiation of the California IBA Report dozens of California field ornithologists, representing a broad range of agencies and affiliations, were interviewed and questioned about sites significant to birds in the state. These interviews and resulting suggestions were incorporated into a comprehensive assessment of those sites. This document was reviewed by an IBA Advisory Board in November 2001, and released in final draft form in December 2001. The report describes over 200 areas, found in all 58 counties that meet eight criteria for identification as an IBA. There are seven Important Bird Areas in Kern County: Buena Vista Lake Bed, Carrizo Plain National Monument, Goose Lake, Kern National Wildlife Refuge Area, Kern River Preserve, North Kern Grasslands, and Taft Hills.

Natural Community Preservation Act

The Natural Community Preservation Act (NCPA) aims at protecting many species using a regional approach to habitat preservation.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) provides the basis for water quality regulation within California. The Act establishes the authority of the SWRCB and the nine RWQCBs. The SWRCB administers water rights, sets state policy for water pollution control, and implements various water quality functions throughout the state, while the RWQCBs conduct planning, permitting, and most enforcement activities. The proposed Project is within jurisdiction of the Central Valley RWQCB. Waters of the state are defined as any surface water or groundwater, including saline waters, within the boundaries of the state. Before allowing discharges that may affect the quality of waters of the state, a Report of Waste Discharge must be filed with the RWQCB.

4.4.2.3 Local

Kern County General Plan

The Kern County General Plan outlines the policies by which biological resources are managed and protected throughout Kern County. The plan includes policies for the protection of oak woodlands, large oak trees, and Endangered species. Threatened or Endangered plant and wildlife species must be protected in accordance with state and federal laws.

The following includes goals and policies of the General Plan that specifically address the management and protection requirements:

- County should work closely with state and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.

- The County will seek cooperative efforts with local, state, and federal agencies to protect listed Threatened and Endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.

- The County will promote public awareness of Endangered species laws to help educate property owners and the development community of local, state, and federal programs concerning Endangered species conservation issues.

- Under the provisions of CEQA, the County, as lead agency, will solicit comments from the CDFW and the USFWS when an environmental document (Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report) is prepared.

- Riparian areas will be managed in accordance with USACE, and the CDFW rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

- Oak woodlands and large oak trees shall be protected where possible and incorporated into project developments.

- Promote the conservation of oak tree woodlands for their environmental value and scenic beauty.

Metropolitan Bakersfield General Plan

The City of Bakersfield General Plan includes a Conservation Element that addresses Biological Resources, Mineral Resources, Soils and Agriculture, Water Resources and Air Quality within the plan area. The Conservation Element includes the following biological policies:

- Direct development away from "sensitive biological resource" areas, unless effective mitigation measures can be implemented.

- Preserve areas of riparian vegetation and wildlife habitat within floodways along rivers and streams, in accordance with the Kern River Plan Element and channel maintenance programs designed to maintain flood flow discharge capacity.

- Discourage, where appropriate, the use of off-road vehicles to protect designated sensitive biological and natural resources.

- Determine the feasibility of enhancing sensitive biological habitat and establishing additional wildlife habitat in the study area with State and/or Federal assistance.

- Determine the locations and extent of suitable habitat areas required for the effective conservation management of designated "sensitive" plant and animal species.

- Investigate the feasibility of including natural areas selected for the habitat conservation plan as a component of the regional park system.

- Where possible, and with the cooperation of wildlife agencies, utilize Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) resources to expand/create habitat preserves with the Northeast Bakersfield Open Space Area (NBOSA).

Other Local City General Plans

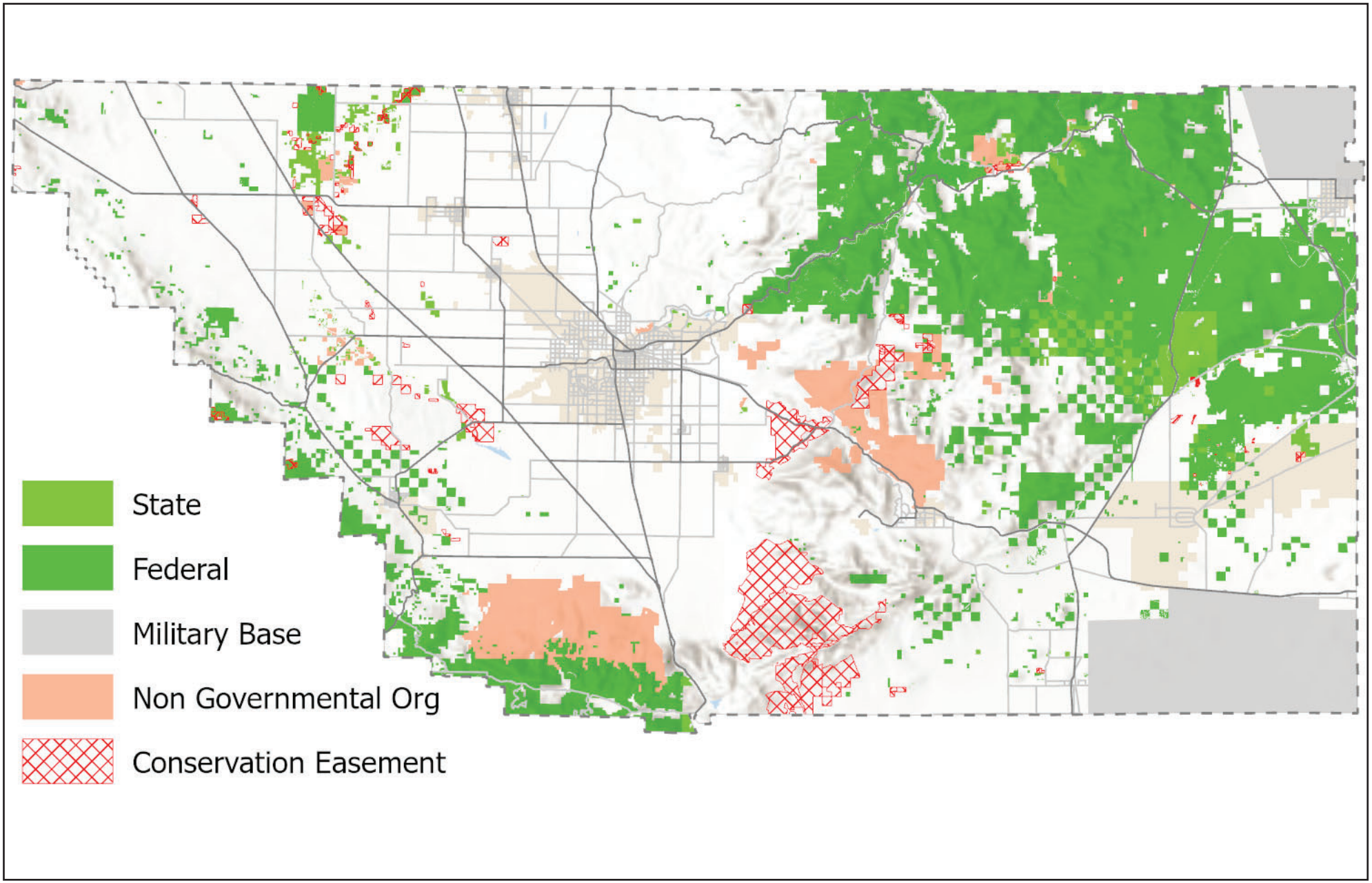
In addition to federal and state regulations, participating Cities in the Kern Council of Governments may also provide regulatory protection and advisement regarding biological resources in the Conservation Element of their General Plans (**Table 4.4-3, City Policies and Ordinances Relevant to Biological Resources in Kern County**).

Table 4.4-3
City Policies and Ordinances Relevant to Biological Resources in Kern County

City	City Policies and Ordinances
Delano	Open Space and Conservation Element of General Plan **Policy Numbers:** Section 4.11, 6 and 10
Tehachapi	Chapter 2.1 E. Natural Resources Element of General Plan **Policy Numbers:** NR27, NR28, NR30, NR32
Ridgecrest	Chapter 7: Open Space & Conservation Element of General Plan **Policy Numbers:** OSC-1.3, OSC-5.1-OSC-5.8
Shafter	Chapter 6: Environmental Management Program of General Plan **Policy Numbers:** 6.4 Biological Habitats and Wildlife Resources, Policies 1-4
Taft	Chapter 5: Open Space and Conservation Element of General Plan **Policy Numbers:** C-13, C-14, C-15, C-17, C-18
Wasco	Chapter 5: Conservation, Open Space & Recreation Element of General Plan **Policy Numbers:** COR Policy 4, Action 4.1 and 4.2

Preserves, Refuges and other Protected Areas

As discussed above, there are areas in Kern County that provide protection, preservation, and conservation for native vegetation and wildlife. These areas include Red Rock Canyon State Park, Bitter Creek National Wildlife Refuge, Mt. Pinos Condor Area, Coles Levee Ecosystem Reserve, Wind Wolves Preserve, Desert Tortoise Research Natural Area, Tule Elk State Preserve, Kern National Wildlife Refuge, Jawbone & Butterbredt Spring, Lokern Preserve, Mourning Cloak Ranch, Sand Ridge Preserve, Semitropic Ridge Preserve, and the Kern Primrose Sphinx Moth Walker Basin Preserve. **Figure 4.4-2, Resource Areas: Farmland, Habitat, Open Space and Government Lands**, illustrates the location of protected lands in the plan area.



SOURCE: Kern COG, 2026

FIGURE **4.4-2**

IMPACT SCIENCES

Resource Areas: Farmland, Habitat, Open Space and Government Lands

Metropolitan Bakersfield Habitat Conservation Plan

The Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) is a plan that addresses the effect of urban growth on federal and state protected plant and animal species within the 409 square mile area covered by the Metropolitan Bakersfield General Plan. The MBHCP is a joint program of the City of Bakersfield and Kern County that was undertaken to assist urban development applicants in complying with state and federal Endangered species laws. The MBHCP utilizes a mitigation fee paid by development applicants for grading or building permits to fund the purchase and maintenance of habitat land to compensate for the effects of urban development on Endangered species habitat. Lands intended for acquisition for the program are generally located outside the Metropolitan Bakersfield area.

CDFW Valley Floor Habitat Conservation Plan

In 2006, Kern County published the *Valley Floor Habitat-Conservation Plan* (VFHCP).[7] The VFHCP established the conditions under which Kern County, the California Division of Oil, Gas, and Geothermal Resources (DOGGR), and other Program beneficiaries sought authorization to allow the taking of multiple federal- and state-protected species incidental to development and other land use activities within the historical range of federal-protected plant and animal species, state-protected plant and animal species and/or other species of concern. Species of concern, not currently protected by the federal or state Endangered Species Act (ESA) are also included.

The VFHCP program area covers 3,110 square miles (2.8 million acres) and generally includes most of the San Joaquin Valley Floor portion of Kern County up to an elevation of 2,000 feet. On the west side, the program area extends to the San Luis Obispo County line, which included some areas at elevations over 2,000 feet. The program does not cover several discrete areas including the Kern Water Bank, Coles Levee Ecosystem Preserve, the former Elk Hills Naval Petroleum Reserve No. 1, and Buena Vista Naval Petroleum Reserve No. 2. Each of these areas is included in a program similar to an HCP. The VFHCP will be managed by Kern County and the Division of Oil, Gas, and Geothermal Resources (DOGGR), with advisory members including the BLM, the oil and gas industry, agriculture and cattle industry, building industry, and relevant environmental and special interest groups. These two HCPs, which are under consideration to become California Natural Community Conservation Planning (NCCP) areas, are in addition to the Chevron Lokern HCP and the Occidental Elk Hills HCP. This extensive planning effort includes cities, water districts, and private industry and will address the remaining 1.2 million acres of conservation land remaining in the Valley portion of Kern County.

---

7 Kern County Valley Floor Habitat Conservation Plan, December 2006. Available online at: https://psbweb.co.kern.ca.us/planning/pdfs/vfhcp_dec06.pdf

West Mojave Plan and West Mojave Habitat Conservation Plan

In response to concerns regarding impacts on species, diminishing habitat and difficulty in complying with the FESA and the CESA on public and private land within the Mojave Desert, a consortium of government agencies prepared the West Mojave Plan (WMP). The WMP covers approximately 9.4 million acres encompassing most of California's western Mojave Desert. The WMP area extends from Olancha in Inyo County on the north to the San Gabriel and San Bernardino Mountains on the south, and from the Antelope Valley on the west to the Mojave National Preserve on the east. About one-third of this area is private land, another third lies within military bases, and the final third consists of public land managed by the BLM. Of the nearly 9.4 million acres of land covered by the plan, 1.6 million acres are located in Kern County.

CDFW Kern County has actively participated in the planning process and is a member of the WMP Steering Committee. In formulation for over 10 years, this multi-species protection effort is intended to cover activities in unincorporated areas of eastern Kern County. California City and Ridgecrest are also participating in formulation of the plan. Focused studies and extensive review of literature, as well as consultation with wildlife experts, have been completed for the desert area, and species likely to occur in those areas have been identified.

Tulare Basin Riparian & Wildlife Corridor Conservation Plan

In response to the loss of native habitats as a result of expansion of agricultural uses and increased demand for irrigation, a working group developed a comprehensive conservation plan for the Tulare Basin in 2009. Located in the San Joaquin Valley, the Tulare Basin Riparian and Wildlife Corridor encompasses portions of Fresno, Kern, Kings, and Tulare counties and spans 629,558 acres. Approximately half of the Corridor is located in Kern County.

The plan identifies 16 key corridors connecting conservation areas and surrounding landscapes. The goals of the plan include preserving existing native habitat and restore corridors between native habitats, protect and restore habitat for wetland species, create flood control benefits, re-create integral historical landscapes in the San Joaquin Valley, and provide natural areas where residents and visitors can relax and explore. The plan intends to protect or restore approximately 30,000 acres of riparian habitat and 550,000 acres of upland habitat.

4.4.3 ENVIRONMENTAL IMPACTS

4.4.3.1 Thresholds of Significance

For the purposes of this PEIR, Kern COG has determined that adoption and/or implementation of the proposed 2026 RTP would result in significant impacts to biological resources, if any of the following could occur:

- Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California CDFW or USFWS.
- Have a substantial adverse effect on federally protected wetlands, as defined by CWA Section 404 (including, but not limited to, marsh, vernal pool, and coastal wetlands) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan.

4.4.3.2 Methodology

This section summarizes the methodology used to evaluate the expected impacts of implementation of the 2026 RTP on biological resources in Kern County. The 2026 RTP transportation projects and growth projections are regional, cumulative, and long-term in nature, and provide a conservative estimate of potential environmental impacts.

Determination of Significance

The impact assessment for biological resources focuses on the potentially significant effects of the Plan on biological resources contained within the County. The methodology for determining the significance of

these impacts compares a regional-level analysis of the future Plan conditions to existing biological resources.

As noted above, areas within the region contain a wide variety of biological resources. Generally, with regard to biological impacts, the greater the change from existing conditions, the more significant the impact to the biological resources. For example, the construction of a new roadway generally has a greater impact on biological resources than the widening of an existing one. Road widening, however, can have significant local impacts especially when requiring the removal of trees and existing biological habitats, or when construction of noise barriers or is necessary.

The development of new transportation facilities may affect biological resources, either by directly affecting a habitat or through indirect effects to adjacent areas. The region contains numerous biological resources; therefore, the potential for impacts to biological resources exists. Improvements within existing rights-of-way are less likely to substantially affect existing biological resources; however, new highway segments near biological resources would constitute a significant impact. In addition, reducing buffer zones between transportation corridors and reduction of biological resources through lane widening could cause significant impacts.

This document analyzes impacts to biological resources at a programmatic level, project-level analysis of impacts is required as appropriate.

Approach to Mitigation

As discussed in **Section 1.0, Introduction**, Kern COG does not have authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in

this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

4.4.3.3 Impacts and Mitigation Measures

Impact BIO-1 **Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.**

Regional Impacts

Numerous special-status species (listed in **Table 4.4-1)** occur or have the potential to occur in Kern County. All species are presumed present throughout their habitat range unless focused surveys following federal and/or state survey protocol methods determine otherwise. Some species require localized microhabitats, while others are highly mobile and may occur throughout the County. Impacts to sensitive species would not necessarily be limited to those recorded or mapped by the CNDDB. The CNDDB system relies on reported sightings of sensitive species, and is not a complete inventory of all sensitive species or their habitats. Special-status species may be directly or indirectly affected by transportation projects as well as anticipated urban development within the planning area if the improvements were to encroach on their habitat or movement corridors. Below is a brief description of the special status species that are present in the region and their habitat requirements. **Table 4.4-1** and **Table 4.4-2** provide the species detailed description of the species habitat and listing status.

Wildlife. There are 177 special-status wildlife species that have the potential to occur in the project area. Of these 177 species, 17 are classified as Endangered. These Endangered species include, the California Condor, the Giant Kangaroo Rat, and the Least Bells Vireo. Of the 177 species, there are 14 amphibians, 69 birds, 2 crustaceans, 5 fish, 18 insects, 7 mollusks, 21 are reptiles, and 41 are mammals. In addition to the species included on this list, mountain lions in the Southern California/Central Coast Evolutionarily Significant Unit (ESU) are present in the project area and are classified as a "specially protected species." This affords them the same protections as listed species.

Plants. There are 208 special-status plant species that have the potential to occur in the project area.

Sensitive Natural Communities. Some of the terrestrial and wetlands resources found within the project area are of global as well as regional significance and are therefore considered sensitive natural communities. Wetlands, including vernal pools scattered throughout Kern County, riparian habitat along the Kern River and other tributaries all provide essential habitat for a host of Endangered and Threatened

plant and animal species. Many other organisms, without official status, depend upon these sensitive natural communities to complete their lifecycles. The sensitive natural communities within the area that are currently rare enough to be listed in the CNDDB are included in **Table 4.4-1** and include the following: Central Valley Drainage/Squawfish Stream, Alkali Seep, Coastal and Valley Freshwater Marsh, Great Valley Cottonwood Riparian Forest, Great Valley Mesquite Scrub, Southern Interior Cypress Forest, Stabilized Interior Dunes, Valley Needlegrass Grassland, Valley Oak Woodland, Valley Sacaton Grassland, Valley Saltbush Scrub, Valley Sink Scrub, and Wildflower Field.

Construction and maintenance activities associated with transportation and development projects included in the 2026 RTP could result in the direct loss or indirect disturbance of special-status plant species that grow or could grow in the planning area. Project-related construction and maintenance could also result in loss or disturbance of special-status animal species or their habitats. Impacts on special-status plant species could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation. Impacts on special-status wildlife or their habitat could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation. Significant impacts on special-status wildlife associated with highway projects can include:

- Direct mortality from the collapse of underground burrows, resulting from soil compaction;
- Direct mortality resulting from the movement of equipment and vehicles through the project area;
- Increased mortality caused by higher numbers of automobiles on new or widened roads in migration corridors;
- Loss of breeding and foraging habitat resulting from the filling of seasonal or perennial wetlands;
- Loss of breeding, foraging, and refuge habitat resulting from the permanent removal of riparian vegetation;
- Abandoned eggs or young and subsequent nest failure for special-status nesting birds, including raptors, as a result of construction-related noises;
- Loss of suitable foraging habitat for special-status raptor species; and
- Loss of migration corridors resulting from the construction of permanent building structures or features.

Proponents of specific transportation and development projects in the 2026 RTP cannot guarantee that special-status species can be avoided.

Urban infill areas are generally developed and are not as likely to support sensitive habitats or species. The focus of the 2026 RTP on urban infill and to a lesser extent urban expansion aims to encourage

compact development that consumes less land, and therefore, less habitat than traditional development. Nonetheless, impacts could occur.

Therefore, impacts to special status species as a result of implementation of transportation projects and land use strategies in the 2026 RTP are considered significant for **Impact BIO-1.** Mitigation is required. **Mitigation Measures BIO-1** through **BIO-4** below would mitigate these impacts.

Transit Priority Areas

TPAs are generally developed and are not as likely to support sensitive habitats or species. TPAs aim to encourage compact development that consumes less land, and therefore, less habitat than traditional development. Nonetheless, impacts could occur. The site-specific significance of projects would include the relative scarcity and importance to other valuable biological resources.

Therefore, impacts to special status species related to land use and transportation changes from implementation of the proposed RTP in TPAs are considered potentially significant for **Impact BIO-1.** Mitigation is required. **Mitigation Measures MM BIO-1** through MM **BIO-4** below would mitigate these impacts.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

MM BIO-1: Kern COG shall facilitate reducing future impacts to species identified as candidate, sensitive, or special status species and associated habitats through cooperation, information sharing, and program development. Kern COG shall consult with the resource agencies, such as the USFWS, NMFS, USACOE, USFS, BLM, and CDFW, as well as local jurisdictions including cities and counties, to incorporate designated critical habitat, federally protected wetlands, the protection of sensitive natural communities and riparian habitats, designated open space or protected wildlife habitat, local policies and tree preservation ordinances, applicable HCPs and NCCPs, or other related planning documents into Kern COG's ongoing regional planning efforts. Planning efforts shall be consistent with the approach outlined in the California Wildlife Action Plan.

MM BIO-2: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to document Special-Status Plant populations as follows:

Retain a qualified botanist to document the presence or absence of special-status plants before project implementation. Implement the following steps to document special-status plants:

- **Review Existing Information.** The botanist should review the most current existing information to develop a list of special-status plants that have potential to occur in the specific project area. Sources of information consulted should include CDFW's CNDDB, previously prepared environmental documents, city and county general plans, HCPs and NCCPs, and the CNPS electronic inventory.

- **Coordinate with Agencies.** The botanist should coordinate with the appropriate agencies (CDFW, USFWS, Caltrans) to discuss botanical resource issues and determine the appropriate level of surveys necessary to document special-status plants.

- **Conduct Field Studies.** The botanist should evaluate existing habitat conditions for each project and determine what level of botanical surveys may be required. The type of botanical survey should depend on species richness, habitat type and quality, and the probability of special-status species occurring in a particular habitat type. Depending on these factors and the proposed construction activity, one or a combination of the following levels of survey may be required:

- **Habitat Assessment.** A habitat assessment will be conducted to determine whether suitable habitat is present. This type of assessment can be conducted at any time of year and is used to assess and characterize habitat conditions and determine whether return surveys are necessary. If no suitable habitat is present, no additional surveys should be required.

- **Species-Focused Surveys.** Species-focused surveys (or target species surveys) should be conducted if suitable habitat is present for special-status plants. The surveys should focus on special-status plants that could grow in the region, and would be conducted during a period when the target species are evident and identifiable.

- **Floristic Protocol-Level Surveys.** Floristic surveys that follow the CNPS Botanical Survey Guidelines should be conducted in areas that are relatively undisturbed and/or have a moderate to high potential to support special-status plants. The CNPS Botanical Survey Guidelines require that all species be identified to the level necessary to determine whether they qualify as special-status plants, or are plant

species with unusual or significant range extensions. The guidelines also require that field surveys be conducted when special-status plants that could occur in the area are evident and identifiable. To account for different special-status plant identification periods, one or more series of field surveys may be required in spring and summer months.

Special-status plant populations identified during the field surveys should be mapped and documented as part of CEQA and NEPA process, as applicable.

MM BIO-3: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to avoid or minimize impacts on Special-Status Plant Populations by redesigning the Project, protecting special-status plant populations, and developing a transplantation plan (If necessary and approved by resource agencies)

If special-status plants are identified in their project area, the proponents of specific projects included in the proposed RTP should implement the following measures, as appropriate, to avoid and minimize impacts on special-status plants:

- Redesign or modify their project to avoid direct and indirect impacts on special status plants, if feasible.

- Protect special-status plants near their project site by installing environmentally sensitive area fencing (orange construction barrier fencing) around special-status plant populations. The environmentally sensitive area fencing should be installed at least 20 feet from the edge of the population. The location of the fencing should be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications should contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area.

- Coordinate with the appropriate resource agencies and local experts to determine whether transplantation is feasible. If the agencies concur that transplantation is a feasible mitigation measure, the botanist should develop and implement a transplantation plan through coordination with the appropriate agencies. The special-status plant transplantation plan should involve identifying a suitable transplant site; moving the plant material and seed bank to the transplant site;

collecting seed material and propagating it in a nursery; and monitoring the transplant sites to document recruitment and survival rates.

MM BIO-4: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to document special-status wildlife species and their habitats as follows:

Retain a qualified wildlife biologist to document the presence or absence of suitable habitat for special-status wildlife in the project study area. The following steps should be implemented to document special-status wildlife and their habitats for each project:

- **Review Existing Information.** The wildlife biologist should review existing information to develop a list of special-status wildlife species that could occur in the project area. The following information should be reviewed as part of this process: the USFWS special-status species list for the project region, CDFW's CNDDB, previously prepared environmental documents, city and county general plans, HCPs and NCCPs (if applicable), and USFWS issued biological opinions for previous projects.

- **Coordinate with State and Federal Agencies.** The wildlife biologist should coordinate with the appropriate agencies (CDFW, USFWS, and Caltrans) to discuss wildlife resource issues in the project region and determine the appropriate level of surveys necessary to document special-status wildlife and their habitats.

- **Conduct Field Studies.** The wildlife biologist should evaluate existing habitat conditions and determine what level of biological surveys may be required. The type of survey required should depend on species richness, habitat type and quality, and the probability of special-status species occurring in a particular habitat type. Depending on the existing conditions in the project area and the proposed construction activity, one or a combination of the following levels of survey may be required:

- **Habitat Assessment.** A habitat assessment determines whether suitable habitat is present. This type of assessment can be conducted at any time of year and is used to assess and characterize habitat conditions and to determine whether return surveys are necessary. If no suitable habitat is present, no additional surveys should be required.

- **Species-Focused Surveys.** Species-focused surveys (or target species surveys) should be conducted if suitable habitat is present for special-status wildlife and if it is necessary to determine the presence or absence of the species in the project area. The surveys should focus on special-status wildlife species that have the potential to occur in the region. The surveys should be conducted during a period when the target species are present and/or active.

- **Protocol-Level Wildlife Surveys.** The project proponent should comply with protocols and guidelines issued by responsible agencies for certain special-status species. USFWS and CDFW have issued survey protocols and guidelines for several special-status wildlife species that could occur in the project region, including (but not limited to) the California red-legged frog, blunt-nosed leopard lizard, desert tortoise and San Joaquin kit fox. The protocols and guidelines may require that surveys be conducted during a particular time of year and/or time of day when the species is present and active. Many survey protocols require that only a USFWS permitted or CDFW-approved biologist perform the surveys. The project proponent should coordinate with the appropriate state or federal agency biologist before the initiation of protocol-level surveys to ensure that the survey results would be valid. Because some species can be difficult to detect or observe, multiple field techniques may be used during a survey period and additional surveys may be required in subsequent seasons or years as outlined in the protocol or guidelines for each species.

Special-status wildlife or suitable habitat identified during the field surveys should be mapped and documented as part of the CEQA and NEPA documentation, as applicable.

MM BIO-5: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to avoid and minimize impacts on Special-Status Wildlife Species by redesigning the project, protecting special-status wildlife habitat, and developing a mitigation monitoring plan (if necessary)

This mitigation measure focuses on avoiding and minimizing all direct and indirect effects on special-status wildlife. Implement the following measures to avoid and minimize impacts on special-status wildlife and their habitats:

- Redesign or modify the project to avoid direct and indirect impacts on special-status wildlife or their habitats, if feasible.

- Protect special-status wildlife and their habitat near the project site by installing environmentally sensitive area fencing around habitat features, such as seasonal wetlands, burrows, and nest trees. The environmentally sensitive area fencing or staking should be installed at a distance from the edge of the resource determined through coordination with state and federal agency biologists (USFWS and CDFW). The location of the fencing should be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications should contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area.

- Restrict construction-related activities to the non-breeding season for special-status wildlife species that could occur in the project area. Timing restrictions may vary depending on the species and could occur during any time of the year. Coordinate with the appropriate resource agencies to determine whether a monitoring plan for special-status wildlife is necessary as part of all highway projects. If a monitoring plan is required, it should be developed and implemented in coordination with appropriate agencies and should include:

  - A description of each of the protected wildlife species and any suitable habitat for special-status species that could occur at the project site;

  - The locations of known occurrences of special-status wildlife species within 1.0 mile of the project site;

  - The location and size of no-disturbance zones in and adjacent to environmentally sensitive areas for wildlife;

  - Directions on the handling and relocating of special-status wildlife species found on the project site that are in immediate danger of being destroyed; and

  - Notification and reporting requirements for special-status species that are identified on the project site.

Level of Significance After Mitigation

Mitigation Measures **MM BIO-1** through **MM BIO-5** would reduce potential impacts on special status species. However, because this document evaluates impacts at the programmatic level, all project

circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts are considered significant and unavoidable.

Impact BIO-2 **Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service.**

Regional Impacts

Kern County supports several sensitive natural communities, such as a variety of oak woodland habitat located in the Temblor Range, Castac Valley, along the flats of the Tejon Pass, in the Greenhorn Range, along the desert facing slopes of the Sierra Nevadas, the eastern slopes of the Piute Mountains, and the northwestern Tehachapi Range, as well as riparian habitats, streams, rivers, wet meadows and vernal pools. California regulations require a lead agency to determine whether a project within its jurisdiction may result in significant effects to oak woodlands. If an agency determines that there may be a significant effect to oak woodlands as a result of a project, the agency must require oak woodlands mitigation alternatives to mitigate the significant effect. Such mitigation alternatives includes: conservation through the use of conservation easements; planting and maintaining an appropriate number of replacement trees; or the contribution of funds for the purpose of purchasing oak woodlands conservation easements.

Streams, rivers, wet meadows, and vernal pools (wetlands and jurisdictional waters) are of high concern because they provide unique aquatic habitat (perennial and ephemeral) for many endemic species, including special-status plants, birds, invertebrates, and amphibians. These aquatic habitats oftentimes qualify as protected wetlands or jurisdictional waters and are protected from disturbance through the CWA.

Kern County contains numerous aquatic habitats that qualify as federally protected wetlands and jurisdictional waters.[8] Section 404 of the CWA requires any project that involves disturbance to a wetland or waters of the US to obtain a permit that authorizes the disturbance. If a wetland or jurisdictional water is determined to be present, then a permit must be obtained from the USACE to authorize a disturbance to the wetland. Although subsequent improvements may disturb protected wetlands and/or jurisdictional waters, the regulatory process that is established through Section 404 of the CWA ensures that there is "no net loss" of wetlands or jurisdictional waters. If, through the design process, it is determined that an improvement project cannot avoid a wetland or jurisdictional water, then the USACE

8 US Fish and Wildlife Service, "Wetlands Mapper," https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/ , accessed April 2026

would require that there be an equal amount of wetland created elsewhere to mitigate any loss of wetland.

Construction activities associated with 2026 RTP transportation and development projects could result in the disturbance or loss of waters of the United States. Such waters include perennial and intermittent drainages; unnamed drainages; vernal pools; freshwater marshes; and other types of seasonal and perennial wetland communities. Wetlands and other waters of the United States could be affected through direct removal, filling, hydrological interruption (including dewatering), alteration of bed and bank, and other construction-related activities.

The significance of this impact would depend on the amount and kind of habitat removed and the ability of individual projects to mitigate their impact. Removal of large riparian trees, for example, can reduce stream shading and increase temperatures. Removal of riparian shrubs or grasses can increase erosion and cause siltation impacts. Removal of aquatic vegetation such as rushes, cattails, or sedges can remove valuable aquatic food sources, spawning or cover habitat, and decrease the water resource's ability to recycle nutrients. Lane additions achieved through re-striping would have less or no impact compared to lane additions and new roadways.

Development that would occur as a result of implementation of the proposed RTP would have the potential to result in the loss of riparian habitat. However, much of the development under the plan would be in urbanized areas that do not have substantial amounts of valuable habitat. Nonetheless, due to the large number of projects that would be implemented as a result of the proposed RTP, and the large area affected by development, it is anticipated that the plan could substantially affect riparian and wetland habitat.

Impacts on any riparian habitat or other sensitive natural community related to land use and transportation changes from ongoing operations resulting from implementation of the proposed RTP are considered potentially significant for **Impact BIO-2.** Mitigation is required. **Mitigation Measures MM BIO-6** through **MM BIO-8** below would mitigate these impacts.

Transit Priority Areas

As discussed above, TPAs generally aim to encourage compact development that consumes less land, and therefore, less habitat than traditional development. TPAs will also be concentrated in urbanized areas where fewer sensitive natural community resources are present. Nonetheless, impacts could occur.

Therefore, impacts on any riparian habitat or other sensitive natural community related to land use and transportation changes from ongoing operations resulting from implementation of the proposed RTP in

TPAs are considered potentially significant for **Impact BIO-2.** Mitigation is required. **Mitigation Measures MM BIO-6** through **MM BIO-8** below would mitigate these impacts.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

MM BIO-6: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to identify and document riparian habitat as follows:

- Retain a qualified biologist to document the location, type, extent, and habitat functions and values for riparian communities that occur in the site-specific project area and could be affected by their project. This information should be mapped and documented as part of CEQA and NEPA documentation, as applicable.
- Consult with the USFWS and NMFS where such state-designated sensitive or riparian habitats provide potential or occupied habitat for federally listed rare, threatened, and endangered species afforded protection pursuant to the federal Endangered Species Act.
- Consult with the USFS where such state-designated sensitive or riparian habitats provide potential or occupied habitat for federally listed rare, threatened, and endangered species afforded protection pursuant to the federal Endangered Species Act and any additional species afforded protection by an adopted Forest Land Management Plan or Resource Management Plan.
- Consult with the CDFW where such state-designated sensitive or riparian habitats provide potential or occupied habitat for state-listed rare, threatened, and endangered species afforded protection pursuant to the California Endangered Species Act, or Fully-Protected Species afforded protection pursuant to the State Fish and Game Code.
- Consult with the CDFW pursuant to the provisions of Section 1600 of the State Fish and Game Code as they relate to Lakes and Streambeds.
- Consult with the USFWS, USFS, CDFW, and counties and cities in the Kern COG region, where state-designated sensitive or riparian habitats are occupied by birds

afforded protection pursuant to the Migratory Bird Treaty Act during the breeding season.

- Consult with the CDFW for state-designated sensitive or riparian habitats where fur-bearing mammals, afforded protection pursuant to the provisions of the State Fish and Game Code for fur-beaming mammals, are actively using the areas in conjunction with breeding activities.

MM BIO-7: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to avoid and minimize disturbance of riparian communities as follows:

If riparian communities are present in the project area, avoid or minimize impacts on riparian communities by implementing the following measures:

- Redesign or modify the project to avoid direct and indirect impacts on riparian communities, if feasible.

- Protect riparian communities near the project site by installing environmentally sensitive area fencing at least 20 feet from the edge of the riparian vegetation. Depending on site-specific conditions, this buffer may be narrower or wider than 20 feet. The location of the fencing should be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications should contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area.

- Minimize the potential for long-term loss of riparian vegetation by trimming vegetation rather than removing the entire shrub. Shrub vegetation should be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration of the species. Cutting should be limited to a minimum area necessary within the construction zone. This type of removal should be allowed only for shrub species (all trees should be avoided) in areas that do not provide habitat for sensitive species (e.g., willow flycatcher). To protect migratory birds, no woody riparian vegetation should not be removed beginning March 15 through September 15, as required under the Migratory Bird Treaty Act.

MM BIO-8: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to compensate for the Loss of Riparian Community as follows:

If riparian vegetation is removed as part of their project, compensate for the loss of riparian vegetation to ensure no net loss of habitat functions and values. Compensation ratios should be based on site-specific information and determined through coordination with state and federal agencies (including CDFW, USFWS, USACE, and National Marine Fisheries Service [NMFS]). Compensation should be provided at a minimum 1:1 ratio (1 acre restored or created for every 1 acre removed) and may be a combination of on-site restoration/creation, off-site restoration, or mitigation credits. Develop a restoration and monitoring plan that describes how riparian habitat should be enhanced or recreated and monitored over a minimum period of time, as determined by the appropriate state and federal agencies. Implement the restoration and monitoring plan.

Level of Significance After Mitigation

Mitigation Measures **MM BIO-6** through **MM BIO-8** would reduce potential impacts on riparian habitat or other sensitive natural communities. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts are considered significant and unavoidable.

Impact BIO-3 **Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.**

Regional Impacts

Construction and maintenance activities associated with projects included in the RTP could result in the disturbance or loss of waters of the United States, including creeks, rivers, streams, vernal pools, marshes, and other types of seasonal and perennial wetland communities. Wetlands and other waters of the United States could be affected through direct removal, filling, hydrological interruption (including dewatering), alteration of stream or riverbed and bank, and other construction-related activities, resulting in long-term degradation of a sensitive plant community, fragmentation, or isolation of an important wildlife habitat, and disruption of natural wildlife movement corridors. Based upon the general planning nature of the proposed RTP, development of detailed, site-specific information on this impact at the program level is not feasible. The implementing agency will conduct appropriate project-level

environmental review and will be responsible for consideration of mitigation measures for significant effects on the environment. However, as the potential exists for RTP transportation or development projects to impact federally protected wetlands, impacts are considered potentially significant for **Impact BIO-3.** Mitigation is required. **Mitigation Measures MM BIO-9** through **MM BIO-11** are described below.

Transit Priority Areas

Although TPAs are generally located in urban areas with fewer areas of wetlands (compared to rural areas), it is possible that transportation or development projects associated with the RTP could result in impacts to federally protected wetlands. Therefore, impacts on federally protected wetlands related to land use and transportation changes from implementation of the proposed RTP in TPAs are considered potentially significant for **Impact BIO-3.** Mitigation is required. **Mitigation Measures MM BIO-9** through **MM BIO-11** below would mitigate these impacts.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

MM BIO-9: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to identify and Delineate Waters of the United States (including jurisdictional and isolated wetlands)

Wetlands should be identified using both the USACE and USFWS/CDFW definitions of wetlands. USACE jurisdictional wetlands should be delineated using the methods outlined in the USACE 1987 *Wetlands Delineation Manual* and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), September 2008. The jurisdictional boundary for other waters of the United States should be identified based on:

- The shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area (33 CFR 328.3[e]).

This information should be mapped and documented as part of the CEQA and NEPA documentation, as applicable, and in wetland delineation reports.

MM BIO-10: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to avoid and minimize disturbance of waters of the United States, including wetland communities.

Avoid and minimize impacts on wetlands and other waters of the United States (creeks, steams, and rivers) by implementing the following measures:

- Redesign or modify the project to avoid direct and indirect impacts on wetland habitats.

- Protect wetland habitats that occur near the project site by installing environmentally sensitive area fencing at least 20 feet from the edge of the wetland. Depending on site-specific conditions and permit requirements, this buffer may be wider than 20 feet (e.g., 250 feet for seasonal wetlands that are considered special-status shrimp habitat). The location of the fencing should be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications should contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area.

- Avoid installation activities in saturated or ponded wetlands during the wet season (spring and winter) to the maximum extent possible. Where such activities are unavoidable, protective practices, such as use of padding or vehicles with balloon tires, should be used.

- Where determined necessary by resource specialists, use geotextile cushions and other materials (e.g., timber pads, prefabricated equipment pads, or geotextile fabric) in saturated conditions to minimize damage to the substrate and vegetation.

- Stabilize exposed slopes and stream banks immediately on completion of installation activities. Other waters of the United States should be restored in a manner that encourages vegetation to reestablish to its pre-project condition and reduces the effects of erosion on the drainage system.

- In highly erodible stream systems, stabilize banks using a non-vegetative material that will bind the soil initially and break down within a few years. If the project engineers determine that more aggressive erosion control treatments are needed, use geotextile mats, excelsior blankets, or other soil stabilization products.

- During construction, remove trees, shrubs, debris, or soils that are inadvertently deposited below the ordinary high-water mark of drainages in a manner that minimizes disturbance of the drainage bed and bank.

These measures should be incorporated into contract specifications and implemented by the construction contractor. In addition, the project proponent should ensure that the contractor incorporates all state and federal permit conditions into construction specifications.

MM BIO-11: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to compensate for the loss of wetland habitat as follows:

If wetlands are filled or disturbed as part of the highway project, compensate for the loss of wetland habitat to ensure no net loss of habitat functions and values. Compensation ratios should be based on site-specific information and determined through coordination with state and federal agencies (including CDFW, USFWS, and USACE). The compensation should be at a minimum 1:1 ratio (1 acre restored or created for every 1 acre filled) and may be a combination of on-site restoration/creation, off-site restoration, or mitigation credits. A restoration and monitoring plan should be developed and implemented if on-site or off-site restoration or creation is chosen. The plan should describe how wetlands should be created and monitored over a minimum of five years (or as required by the regulatory agencies).

Level of Significance After Mitigation

Mitigation Measures MM BIO-9 through **MM BIO-11** would reduce potential impacts on federally protected wetlands. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts are considered significant and unavoidable.

Impact BIO-4 **Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.**

Regional Impacts

There are many native fish and wildlife species within the County that migrate or utilize movement corridors. The most notable for their protection status include the little Kern golden trout. The RTP directs growth and development to urbanized areas, thus reducing interference with habitat movement of fish and wildlife species.

The individual transportation improvements identified in the proposed project have not been designed or approved. Each project will be designed consistent with the applicable county, city, state, and/or federal requirements to ensure that appropriate design measures, including avoidance, if appropriate, are incorporated into the design of each improvement project. It will be important that each transportation project review the potential for impacts to riparian habitat, which is critical for the maintenance of high quality fish habitat. It provides cover, controls temperature, stabilizes stream banks, provides food, and buffers streams from erosion and impacts of adjacent land uses. Riparian vegetation also affects stream depth, current velocity, and substrate composition.

The Migratory Bird Treaty Act (16 U.S.C. §§ 703–712) protects migratory birds, their nests, and eggs from take. Compliance with the MBTA would be ensured through implementation of standard avoidance measures, such as pre-construction nesting bird surveys and establishment of appropriate buffers around active nests, where necessary. These measures would avoid the take of migratory birds and ensure consistency with federal regulations.

Protected migratory species, including, but not limited to, salmon, the little Kern golden trout, the Kern Brook lamprey, and Mohave tui chub could be impacted through implementation of development and transportation projects occurring under the 2026 RTP. The following mitigation measure would ensure that all future projects are designed to facilitate the movement of sensitive species to the greatest extent feasible. Where full design mitigation is not feasible, compliance with state and federal permit requirements would offset any potential impacts associated with project implementation. Nevertheless, impacts on native resident or migratory fish or wildlife species related to land use and transportation resulting from implementation of the proposed RTP at the regional level are considered potentially significant for **Impact BIO-4.** Mitigation is required. **Mitigation Measure MM BIO-12** below would reduce these impacts.

Transit Priority Areas

Generally, TPAs are located within urban areas that do not offer opportunities for migratory fish or other species. Nonetheless, there is the potential that transportation projects or land use strategies in urban areas could indirectly affect downstream species. Therefore, impacts on native resident or migratory fish or wildlife species related to land use and transportation changes resulting from implementation of the proposed RTP in TPAs are considered potentially significant for **Impact BIO-4.** Mitigation is required. **Mitigation Measure MM BIO-12** below would reduce these impacts.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

MM BIO-12: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to incorporate Design Measures to Allow Animal Movement as follows:

Prior to design approval of individual projects that contain movement habitat, the implementing agency should incorporate economically viable design measures, as applicable and necessary, to allow wildlife or fish to move through the transportation corridor, both during construction activities and post construction. Such measures may include appropriately spaced breaks in a center barrier, or other measures that are designed to allow wildlife to move through the transportation corridor. If the project cannot be designed with these design measures due to traffic safety, etc., the implementing agency should consider mitigation measures to minimize impacts on biological resources, including coordinating with the appropriate regulatory agency (i.e., USFWS, NMFS, CDFW) to obtain regulatory permits and implement alternative project-specific mitigation prior to any construction activities Such measures include, but are not limited to, the following:

- Consult with the USFWS, USFS, CDFW, and local agencies, where impacts to birds afforded protection pursuant to the Migratory Bird Treaty Act during the breeding season may occur.

- Consult with local jurisdictions and other local organizations when impacts may occur to open space areas that have been designated as important for wildlife movement.

- Prohibit construction activities within 500 feet of occupied breeding areas for wildlife afforded protection pursuant to Title 14 § 460 of the California Code of Regulations protecting fur-bearing mammals, during the breeding season.

- Conduct a survey to identify active raptor and other migratory nongame bird nests by a qualified biologist at least two weeks before the start of construction at project sites from February 1 through August 31.

- Install wildlife fencing where appropriate to minimize the probability of wildlife injury due to direct interaction between wildlife and roads or construction.

- where avoidance is determined to be infeasible, design sufficient conservation measures through coordination with local agencies and the regulatory agency (i.e., USFWS or CDFW) and in accordance with the respective counties and cities general plans to establish plans to mitigate for the loss of fish and wildlife movement corridors and/or wildlife nursery sites. The consideration of conservation measures may include the following measures where applicable:
  - Wildlife movement buffer zones
  - Corridor realignment
  - Appropriately spaced breaks in center barriers
  - Stream rerouting
  - Culverts
  - Creation of artificial movement corridors such as freeway under- or overpasses
  - Other comparable measures

Where the Lead Agency has identified that a RTP project, or other regionally significant project, has the potential to impact other open space or nursery site areas, seek comparable coverage for these areas in consultation with the USFWS, CDFW, NMFS, or other local jurisdictions.

Level of Significance After Mitigation

Mitigation Measure MM BIO-12 would reduce potential impacts on migratory fish and other wildlife species. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measure above, impacts are considered significant and unavoidable.

Impact BIO-5 **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.**

Impact BIO-6 **Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.**

Regional and Transit Priority Area Impacts

Construction and maintenance activities associated with transportation and development projects in accordance with the 2026 RTP could result in conflicts with local policies or ordinances that protect locally significant biological resources, including heritage or native trees. Based upon the general planning nature of the RTP, development of detailed, site-specific information this impact at the program level is not feasible. The implementing agency will conduct appropriate project-level environmental review and will be responsible for consideration of mitigation measures for significant effects on the environment.

Individual projects could impact habitat conservation plans discussed above, including the Valley Floor Habitat Conservation Plan, the Metropolitan Bakersfield Habitat Conservation Plan, the Tulare Basin Riparian & Wildlife Corridor Conservation Plan, and the West Mojave Conservation Habitat Plan. Individual 2026 RTP transportation projects will be reviewed by the Kern COG Environmental Review Program/Intergovernmental Review to ensure that the biological impacts are within the parameters established by the applicable specific plan(s). Further, as discussed in the 2026 RTP (see Chapter 4 Sustainable Communities Strategy), all land use changes would be subject to local plans and policies. As such, no specific zoning changes would occur as a direct result of the 2026 RTP, rather each individual jurisdiction would be responsible for approving land use and zoning changes. 2026 RTP projects will be reviewed by the Kern COG Environmental Review Program/Intergovernmental Review for the following:

- A proposed project is consistent with any overall habitat plan's biological intent and conservation program.

- Any biological impacts and Incidental Take associated with a proposed project are within the scope of the environmental analyses adopted in conjunction with the habitat plan.
- A project does not introduce significant new biological conditions into the Plan Area (i.e., impacts of the proposed project are less than or equal to those described in the habitat plan and its supporting environmental documents).
- Project acres have been analyzed based on habitat type (e.g., Natural Land, Agricultural Habitat Land, or Multi-Purpose Open Space Land) and sufficient take acres remain for each habitat type to allow coverage of the proposed project as permitted under the applicable habitat plans.
- Project is adjacent to existing city limits; or
- Project does not include installation of a linear barrier to species dispersal.

As appropriate, Kern COG and local jurisdictions work with federal agencies and regional partners regarding proposed development in areas containing federally or state protected natural resources. Kern COG gathers and considers information on the timing of any applicable permits and their relationship to HCP and NCCP planning efforts to feed into phasing assumptions for the 2026 RTP land use forecast. Given available data, mapping, and HCP and/or NCCP status, Kern COG recognizes the constraints imposed by the federal and state Endangered Species Laws. The ultimate resolution of the many ongoing natural resources planning efforts will have a major influence on future growth patterns in the region. The forecasted development pattern in this RTP takes into account the uncertainties associated with these ongoing efforts throughout the region. The progress of these planning initiatives will be carefully monitored, and it is expected that once the HCPs/NCCPs are adopted and implemented, their provisions will influence land use forecasts in future RTPs/SCSs.

However, impacts on protected biological resources related to land use and transportation changes resulting from implementation of the proposed RTP are considered potentially significant for **Impact BIO-5** and **Impact BIO-6.** Mitigation is required. **Mitigation Measures MM BIO-1** through **MM BIO-12** would reduce impacts; in addition **Mitigation Measures MM BIO-13** and **BIO-14** below would further reduce impacts.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels for both **Impact BIO-5** and **Impact BIO-6**.

Mitigation Measures

Implement **Mitigation Measures MM BIO-1** through **MM BIO-12**.

MM BIO-13: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to review Local City and County Policies, Ordinances, and Conservation Plans. Review of these documents and compliance with their requirements should be demonstrated in project-level environmental documentation. Where lead agencies have determined a significant impact would occur, lead agencies should consider mitigation measures to minimize impacts. Such measures include, but are not limited to, the following:

Design projects to avoid conflicts with local policies and ordinances protecting biological resources.

Where avoidance is determined to be infeasible, sufficient conservation measures to fulfill the requirements of the applicable policy or ordinance should be developed, such as to support issuance of a tree removal permit. The consideration of conservation measures may include:

- Avoidance strategies
- Contribution of in-lieu fees
- Planting of replacement trees at a minimum ratio of 2:1
- Re-landscaping areas with native vegetation post-construction
- Other comparable measures.

MM-BIO-14 Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to review Local City and County Policies, Ordinances, and Conservation Plans. Review of these documents and compliance with their requirements should be demonstrated in project-level environmental documentation. Where lead agencies have determined a significant impact would occur, lead agencies should consider mitigation measures to minimize impacts. Such measures include, but are not limited to, the following:

- Consult with the appropriate federal, state, and/or local agency responsible for the administration of HCPs or NCCPs.

- Wherever practicable and feasible, the project should be designed to avoid through project design lands preserved under the conditions of an HCP or NCCP.

Where avoidance is determined to be infeasible, sufficient conservation measures to fulfill the requirements of the HCP and/or NCCP, which would include but not be limited to applicable authorization for incidental take pursuant to Section 7 or 10(a) of the federal Endangered Species Act or Section 2081 of the California Endangered Species Act, should be developed to support issuance of an Incidental take permit or any other permissions required for development within the HCP/NCCP boundaries.

Level of Significance After Mitigation

Mitigation Measures **MM BIO-1** through **MM BIO-14** would reduce potential impacts related to tree preservation and HCPs. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measure above, impacts are considered significant and unavoidable.

4.4.4 CUMULATIVE IMPACTS

Under the 2026 RTP, impacts to sensitive species, as well as habitat fragmentation, loss, and disturbance, would occur. Many of these impacts would be the direct result of either transportation improvements or development. Impacts to sensitive species, as well as loss of habitat and habitat fragmentation, would contribute to similar statewide impacts. Many important habitat corridors cross Kern's boundaries. As a result, the loss of an important corridor or the fragmentation of habitat could limit the movement of wildlife species, resulting in additional cumulative impacts. Similarly, fragmentation could reduce the viability of a species beyond the plan area. Therefore, the significant impacts to biological resources anticipated to result from transportation and development projects occurring under the 2026 RTP would contribute to cumulative biological resources impacts statewide. (The 2026 RTP would not result in any impacts to biological resources that would be less than significant for the 2026 RTP alone but cumulatively considerable.)

4.5 CULTURAL RESOURCES & TRIBAL CULTURAL RESOURCES

This section addresses the existing cultural resources, including tribal cultural resources, within the region and evaluates the significance of the changes in cultural resources that could result from the development of the 2026 RTP. In addition, as appropriate and feasible, mitigation measures are identified where appropriate.

4.5.1 ENVIRONMENTAL SETTING

Kern County contains a rich array of cultural resources, including prehistoric and historical archaeological sites, paleontological sites, historical buildings, and structures associated with agriculture, mining, and petroleum development. Properties important to Native American communities and other ethnic groups, including tangible properties possessing intangible traditional cultural values, are also present. Such resources may exist individually, in groupings of modest size, or in districts covering substantial geographies. **Table 4.5-1, Historic Resources in Kern County,** provides a list of known historic resources in Kern County.

Table 4.5-1
Historic Resources in Kern County

Name (Landmark/Plaque Number)	National Register	California Historical Landmark	California Points of Historical Interest	Date Listed	City/Census Designated Place
20-Mule-Team Borax Terminus/652		X		7/1/1958	Mojave
Bakersfield California Building/N1182	X			3/10/1983	Bakersfield
Bandit Rock/N397	X			10/31/1975	Inyokern
Bealville/741		X		7/5/1960	Caliente
Buena Vista Refinery/504		X		7/31/1953	McKittrick
Burro Schmidt's Tunnel/N2198	X			3/20/2003	Ridgecrest
Buttonwillow Tree/492		X		10/8/1951	Buttonwillow
Caliente/757		X		2/15/1961	Caliente
California Standard Oil Well/376		X		11/7/1941	McKittrick
Campsite of Edward M. Kern/742		X		7/5/1960	Lake Isabella
Clay Pits/P88			X	6/4/1968	Rosamond
Colonel Thomas Baker Memoria/382		X		1/3/1944	Bakersfield
Desert Spring/476		X		11/30/1950	Cantil
Discovery Well of Kern River Oilfield/290		X		6/27/1938	Bakersfield
Errea House/N1986	X			7/29/1997	Tehachapi
Fages-Zalvidea Crossing/291		X		6/27/1938	Mettler
First Baptist Church/N739	X			1/2/1979	Bakersfield

Name (Landmark/Plaque Number)	National Register	California Historical Landmark	California Points of Historical Interest	Date Listed	City/Census Designated Place
Fort Taft/P559			X	12/19/1980	Taft
Fort Tejon/129		X		1/31/1934	Lebec
The Fort/N963	X			7/22/1981	Taft
Freeman Junction/766		X		11/31/1961	Kern
Garcés Baptismal Site/631		X		1/29/1958	Woody
Garcés Circle/277		X		10/21/1937	Bakersfield
Glenville Adobe/495		X		10/17/1951	Glenville
Gordon's Ferry on the Kern River/137		X			N/A
Green Hotel/N1584	X			3/16/1989	Shafter
Green Hotel/Hitchcock Hotel/Shafter Hotel/P678			X	11/28/1986	Shafter
Courtlandt Gross, House/N1491	X			3/22/1987	Tehachapi
Havilah/100		X		3/29/1933	Havilah
Indian Wells/457		X		1/11/1950	Kern
Jameson 17-24 C Oil Well/P495			X	1/13/1977	Taft
Jastro Building/N1247	X			9/22/1983	Bakersfield
Josie Bishop Mining Claim Site/P806			X	12/4/1994	California City
Kern Branch, Beale Memorial Library/N949	X			4/1/1981	Bakersfield
Kern County Museum and Pioneer Village/P558			X	12/19/1980	Bakersfield
Kern River Slough Station/588		X		5/22/1957	Lamont
Kernville/132		X		1/31/1934	Kernville
Keysville/98		X		3/29/1933	Lake Isabella
Lakeview Gusher 1/485		X		8/7/1951	Maricopa
Last Chance Canyon/N193	X			12/5/1972	Johannesburg
Lavers Crossing/672		X		2/16/1959	Glenville
Long Canyon Village Site/N858	X			4/14/1980	South Lake
McKittrick Brea Pit/498		X		12/4/1951	McKittrick
Mountain House/598		X		5/22/1957	Woody
Nuestra Senora Reina de la Paz/1056	X	X		10/8/2013	Kern
Oak Creek Pass/97		X		3/29/1933	Tehachapi
Old Town (Tehachapi)/643		X		4/29/1958	Tehachapi
Outermost Point in the South San Joaquin Valley/371		X		9/4/1940	Arvin
Place where Francisco Garces Crossed the Kern River/278		X		10/21/1937	Bakersfield
Point on the Jedediah Smith Trail/660		X		9/26/1958	Edison
Posey Station of Butterfield Overland Mail Lines/539		X		9/14/1955	Bakersfield
Rand Mining District/938		X		1/15/1981	Randsburg
Rogers Dry Lake/N1384	X			10/31/1985	Mojave Desert
Rose Station/300		X		5/1/1939	Mettler

Name (Landmark/Plaque Number)	National Register	California Historical Landmark	California Points of Historical Interest	Date Listed	City/Census Designated Place
Santa Fe Passenger and Freight Depot/N995	X			1/19/1982	Shafter
Sebastian Indian Reservation/133		X		1/31/1934	Mettler
Shafter Cotton Research Station/1022		X		3/3/1997	Shafter
Shafter Research Station/N1995	X			10/17/1997	Shafter
Sinks of the Tejon, Alamo, Station of Butterfield Overland Mail Lines/540		X		9/14/1955	Mettler
Site of the Flight of the Gossamer Condor/923		X		10/15/1978	Shafter
Site of the Home of Elisha Stevens/732		X		4/8/1960	Bakersfield
Site of the Last Home of Alexis Godey/690		X		7/31/1959	Bakersfield
Site of the Town of Garlock/671		X		12/1/1958	Cantil
Standard Oil Building, Jastro Building/P607			X	1/14/1983	Bakersfield
Tehachapi Loop/508		X		8/26/1953	Tehachapi
Tehachapi Railroad Depot/N2070	X			10/20/1999	Tehachapi
Tevis Block/N1272	X			3/29/1984	Bakersfield
Tomo-Kahni/1054		X		8/28/2014	Kern
Top of Grapevine Pass, Where Don Pedro Fages Passed in 1772/283		X		1/8/1938	Lebec
Tulamniu Indian Site/374		X		9/6/1941	Taft
Twenty Mule Team Road/P91			X	6/7/1968	California City
Union Ice House/P592			X	6/9/1982	Bakersfield
Walker Basin/P677			X	11/27/1986	Caliente
Walker's Pass/99		X		3/29/1933	Kern
Wasco Union High School Auditorium/M1991	X			9/30/1997	Wasco
Weedpatch Camp/N1929	X			1/22/1996	Bakersfield
Well, 2-6/581		X		5/1/1957	Fellows
Willow Springs/130		X		1/31/1934	Rosamond
Willow Springs International Raceway/P819			X	2/19/1966	Rosamond

Notes:

[1] *The National Register of Historic Places (National Register) includes buildings, structures, objects, sites, and districts of local, state, or national significance in American history, architecture, archeology, engineering, and culture.*

[2] *California Historical Landmarks (Landmarks) are buildings, sites, features, or events that are of statewide significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other historical value.*

[3] *California Points of Historical Interest (Points) are buildings, sites, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other historical value.*

Source:

California Historical Resources Office of Historic Preservation, California Historical Resources-Kern County, available online at: https://ohp.parks.ca.gov/ListedResources/?view=county&criteria=15, accessed April 30, 2026.

4.5.1.1 Prehistory

The diverse environments of Kern County contain a record of substantial depth and variety for human occupation of the region. Archaeological evidence indicates humans were present on the shores of ancient Buena Vista Lake approximately 8,000 years ago. A deeply buried cultural stratum at site CA-KER-116, on the western edge of Buena Vista Lake, revealed hunting and butchering artifacts suitable for large game. As the Holocene era progressed and the climate moderated, humans occupied increasingly higher elevation zones in the Coast, Tehachapi's, and Sierra Nevada Mountain Ranges.

Research over the last century has documented various cultural histories for the prehistoric peoples of the region. In general terms, the groups living in the southern San Joaquin Valley were larger and more settled, inhabiting permanent villages and exploiting the abundant aquatic and terrestrial resources provided by the lakes and marshes of the valley floor. Groups occupying the mountain and desert regions of the County tended to be smaller and more mobile, ranging over wide territories as they followed the more seasonal, less reliable resources of their territories. These patterns were evident in the native cultures observed by Europeans as they explored and colonized the region beginning in the late 18th century.

Ethnography

Many distinct native groups occupied Kern County at the time the Spanish arrived in the 1770s. These included the Southern Valley and Foothill Yokuts, the Interior Chumash (Cuyama and Castac) in the Coast Ranges and westernmost Tehachapis, the Tübatulabal and Kawaiisu of the southern Sierra Nevada and Tehachapis, the Kitanemuk of the eastern Tehachapis, the Tataviam of the western Antelope Valley, and the Panamint Shoshone and Southern Paiute in the desert regions of northeastern Kern County.[1]

The Spanish and later observers reported a diverse array of social, political, material, and other cultural traits for these groups, who represented a remarkable variety of distinct languages and dialects. The territorial boundaries of the Native Americans who were residing in Southern California at the time of first European contact do not coincide with today's political boundaries. Moreover, many tribal boundaries overlapped and most groups migrated within their general boundaries throughout the years.

After AD 1770, the native populations of the San Joaquin Valley (as in many parts of California) were severely impacted by disease and disrupted settlement patterns as a result of Spanish colonial expeditions and mission recruitment.

---

1 Northern California Indian Development Council, California Indian Pre-contact Tribal Territories Map. Available online at: https://ncidc.org/sites/default/files/images/import/education_graphics/CalTribe-precontact.jpg, accessed March 25, 2026.

History

The Spaniards were the first non-Indians to enter the San Joaquin Valley. Pedro Fagés led a group of soldiers through the Tejon Pass into the San Joaquin Valley in 1772. In 1776, Franciscan friar Francisco Garcés documented the Spanish missionaries' visit to what is today the City of Bakersfield. In 1827, Americans began to traverse the area on a beaver trapping expedition led by Jedediah Smith.

Kern County nonetheless remained mostly the province of the various Native American groups and relatively isolated from Euro-American influences until 1853, when gold was discovered in the rugged hills near the Greenhorn Mountains along the lower Kern River. Thousands of gold-seekers poured into the Kern River valley, many of whom settled in the region after much of the gold mining ended.

The federal government established reservations in Southern California between 1875 and 1891. The Sebastian, or Tejon Indian Reservation, was established in 1853 as one of the first Native American Reservations in California.[2] However, the reservation was closed in 1864, and its inhabitants were transferred to other reservations.[3]

Modern Bakersfield evolved in part from the reclamation of swamplands known as Kern Island. First settled in 1860 by Christian Bohna, Kern Island was initially developed in 1863 by Colonel Thomas Baker and his family. In 1866, the California legislature created Kern County, naming Havilah as the County seat. By 1873, the Southern Pacific Railroad had laid track through Kern County and founded the town of Delano. Bakersfield became an incorporated city in 1874, and that same year displaced Havilah as the County seat. The railroad also facilitated the creation of many other Kern County communities, including Caliente (1875), Bealville (1875), Tehachapi (1876), Mojave (1876), and Rosamond (1877).

In 1899, rich oil fields were discovered near McKittrick (State Historical Landmark No. 376), and a new wave of immigration was underway in Kern County. Agriculture became prominent in the twentieth century, with cotton as the primary crop.

---

2 California Office of Historic Preservation. Sebastian Indian Reservation. Available online at: https://ohp.parks.ca.gov/ListedResources/Detail/133, accessed March 25, 2026.

3 *Ibid.*

Native American Sacred Sites

There are currently no federally established reservations in Kern County. However, the Tejon Indian Tribe is a federally recognized tribe (84 Fed. Reg. § 1200), and includes members of the Kitanemuk, Yokuts, and Chumash people.[4]

Recognizing that tribal groups may have expertise with regard to their tribal history and practices that others may not, Assembly Bill 52 (AB 52) (as will be discussed in more detail below) requires lead agencies to provide notice to all tribal groups that are traditionally, culturally, and historically affiliated with the geographic area of a proposed project if they have requested such notice. Some of these groups are not federally recognized, have had their federal recognition revoked, or are in the process of requesting federal recognition. The Native American Heritage Commission (NAHC) maintains the list of tribes that are traditionally and culturally affiliated within a specified geographic area.

Native American sacred sites reflect the evolution of the Kern County region, reflecting the rich cultural heritage of Native American cultures that predate and continued beyond European contact. Native American sacred sites may be related to a range of topics, including origins of the universe, the shifting of tectonic plates, and an evolving array of plants and animals that give the region its unique features today. Some sites are associated with the migration of humans into the region, where they settled, and how they lived. These sites document the view of Native American cultures of their own history and way of life.

The NAHC is charged with identifying, cataloging, and protecting Native American cultural resources and sacred sites, which is maintained as the SLF. The nature and precise location of these resources is confidential.

Archaeology and Historic Sites

Records of archaeological and historical sites and investigations in Kern County repose at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System (CHRIS) at California State University, Bakersfield. A review of Kern County data on file at the Information Center revealed several areas where large numbers of archaeological or historical resources have been recorded, and other areas that have not been examined. **Figure 4.5-1, Kern County Cultural Resources,** shows areas with the greatest density of cultural resources with the potential to be impacted

---

4 Federal Register. *Indian Entities Recognized by and Eligible To Receive Services From the United States Bureau of Indian Affairs*. Updated August 11, 2023. Available at: https://www.federalregister.gov/documents/2024/01/08/2024-00109/indian-entities-recognized-by-and-eligible-to-receive-services-from-the-united-states-bureau-of, accessed March 25, 2026.

by the 2026 RTP. It is important to note that the density of known sites in a given area may be a function of cultural resources survey coverage and documentation rather than actual or potential resource density. Broadly speaking, fewer cultural resources investigations have occurred in undeveloped or remote areas than in developed areas, and thus fewer sites are recorded in those areas.

West Valley

This area includes the ancient Buena Vista and Kern lakebeds, as well as historic resources associated with the development of the Midway-Sunset, Elk Hills, and other oil fields. Many large, complex, and deep prehistoric sites are documented near the old shorelines of both Buena Vista and Kern lakes, including some of the most ancient sites known in all of California.

Metropolitan Bakersfield

The Metropolitan Bakersfield area contains a variety of historic resources including buildings, oil fields, farm labor camps and supply centers, and historical monuments. Many of these resources are listed on the National Register of Historic Places and/or the California Register of Historic Resources. In addition, numerous prehistoric archaeological sites have been recorded in the area.

Tehachapi Mountains

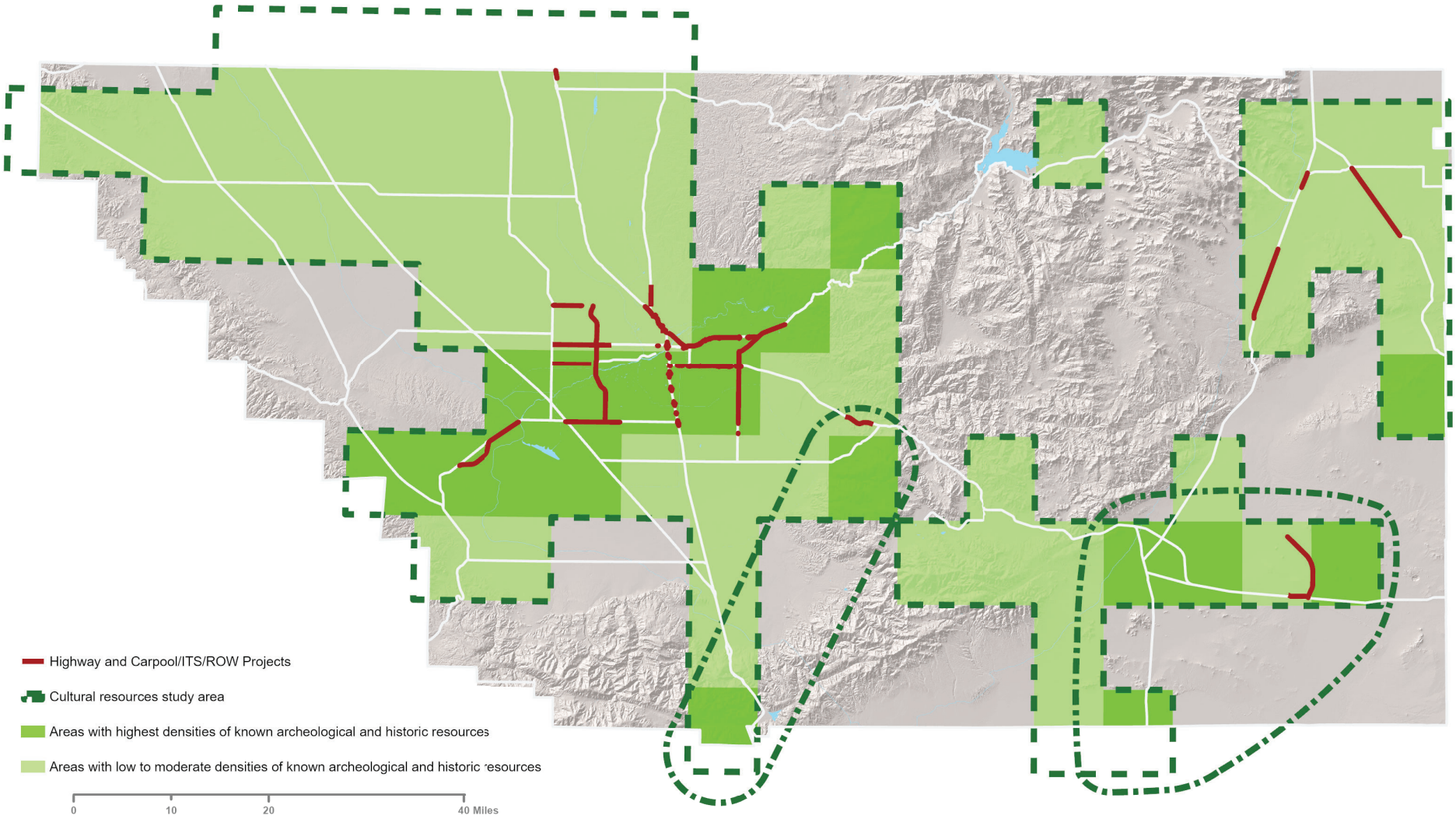
The Tejon area near Lebec contains numerous historic resources associated with Fort Tejon, established in 1854 to protect the Sebastian Indian Reservation. Fort Tejon is a State Historic Park and listed on the National Register of Historic Places. The Castaic Valley, now the route of Interstate 5, is also rich in Native American archaeological sites. High densities of archaeological sites have also been recorded in the Bear Mountain area along State Highway 223 northeast of Arvin.

Southern Sierra Nevada

This area contains numerous prehistoric and historic resources along the lower Kern River. Historic resources include those associated with the 1850s Kern River area gold rush and other resources relevant to the early settlement of the area. A California Historic Landmark on State Highway 178 commemorates Father Garcés' crossing of the Kern River in 1776.

Antelope Valley

Edwards Air Force Base and the Rosamond area have been relatively well studied. There is a particularly high density of prehistoric resources found in the Rosamond Hills.



SOURCE: Kern COG, 2026

FIGURE **4.5-1**

IMPACT SCIENCES

Kern County Cultural Resources

1170.004•04/26

In the Mojave-California City area lie remnants of the historic Twenty Mule Team Road, over which wagons hauled borax from Death Valley to Mojave between 1884 and 1889. Historic resources associated with the Southern Pacific Railroad have also been recorded in the area.

Johannesburg/Randsburg

This area contains high densities of historic resources associated with the Rand Mining District, first developed in 1895. The area experienced multiple booms until the mid-twentieth century, including a silver bonanza in the 1920s. The entire Rand Mining District is a California Historic Landmark (#938).

4.5.2 REGULATORY FRAMEWORK

Cultural resources are regulated at the federal, state, and local levels as discussed below.

4.5.2.1 Federal

National Environmental Policy Act

The National Environmental Policy Act (NEPA) requires careful consideration of the harmful effects of federal actions or plans, including projects that receive federal funds, if they may have a significant adverse effect on the environment. NEPA mandates that all federal agencies carry out their regulations, policies, and programs in accordance with NEPA's policies of environmental protection. NEPA encourages the protection of all aspects of the environment and requires federal agencies to utilize a systematic, interdisciplinary approach to agency decision-making that will ensure the integrated use of natural sciences such as geology. NEPA addresses a wide range of environmental issues, including the documentation of and evaluation of potential impacts to cultural and historic properties. Compliance includes an on-site survey by a qualified archaeologist prior to construction. A report on the findings may be submitted to the State Historic Preservation Office (SHPO) for further consultation. While NEPA compliance is not required for the project, NEPA compliance will be required for transportation improvement projects that will be financed using federal funds. Some development projects (such as low-income housing) also use federal funds and are subject to NEPA. The regulations also require projects requiring NEPA review to seek to avoid or minimize adverse effects of proposed actions and restore and enhance environmental quality as much as possible.

United States Department of Transportation Act of 1966 (Section 4[f])

Section 4(f) of the United States Department of Transportation (USDOT) Act of 1966 affords special protection to public recreational lands and facilities, including local parks and school facilities that are open and available to the general public for recreational purposes, significant cultural resources,

historical resources, and natural wildlife refuges. Federally funded transportation improvement projects are prohibited from the encroachment (direct or constructive use, or a take) of Section 4(f) lands unless it can be demonstrated that no feasible and prudent alternative exists.

National Register of Historic Places (National Register)

The National Register recognizes properties that are significant at the national, state, and/or local levels. Although administered by the National Park Service, the federal regulations explicitly provide that National Register listing of private property "does not prohibit under federal law or regulation any actions which may otherwise be taken by the property owner with respect to the property." Listing in the National Register assists in preservation of historic properties through recognition that a property is of significance to the nation, the state, or the community; consideration in the planning for federal or federally assisted projects; eligibility for federal tax benefits; consideration in the decision to issue a surface coal mining permit; and qualification for federal assistance for historic preservation, when funds are available. In addition, for projects that receive federal funding, a clearance process must be completed in accordance with Section 106 of the National Historic Preservation Act (NHPA). Furthermore, state and local regulations may apply to properties listed in the National Register.

The criteria for listing in the National Register follow the standards for determining if properties, sites, districts, structures, or landscapes of potential significance are eligible for nomination. In addition to meeting any or all of the following criteria, properties nominated must also possess integrity of location, design, setting, feeling, workmanship, association, and materials:

- Associated with events that have made a significant contribution to the broad patterns of our history;
- Associated with the lives of persons significant in our past;
- Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Yield, or may be likely to yield, information important in prehistory or history.

Historic integrity is the ability of a property to convey its significance and is defined as "the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic period."

The National Register recognizes seven aspects or qualities that comprise integrity: location, design, setting, materials, workmanship, feeling, and association. These qualities are defined as follows:

- Location is the place where the historic property was constructed or the place where the historic event occurred;
- Design is the combination of elements that create the form, plan, space, structure, and style of a property;
- Setting is the physical environment of a historic property;
- Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property;
- Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory;
- Feeling is a property's expression of the aesthetic or historic sense of a particular period of time; and
- Association is the direct link between an important historic event or person and a historic property.

Historic Sites Act of 1935 (HSA)

The HSA became law on August 21, 1935, and declared that it is national policy to "Preserve for public use historic sites, buildings, and objects of national significance." The NHPA expanded the scope to include important state and local resources. Provisions of NHPA established the National Register maintained by the National Park Service, advisory councils on Historic Preservation, State Historic Preservation Offices, and grants-in-aid programs. Section 106 of the NHPA requires all federal agencies to consult the Advisory Council before continuing any activity affecting a property listed on or eligible for listing on the National Register. The Advisory Council has developed regulations for Section 106 to encourage coordination of agency cultural resource compliance requirements (Executive Order 11593).

Antiquities Act of 1906

The Antiquities Act of 1906, which aimed to protect important historic and archaeological sites, initiated historic preservation legislation. It established a system of permits for conducting archaeological studies on federal land, as well as setting penalties for noncompliance. This permit process controls the disturbances that may be caused to archaeological sites. New permits are currently issued under the Archaeological Resources Protection Act (ARPA) of 1979. The purpose of ARPA is to enhance the preservation and protection of archaeological resources on public and Native American lands.

National Historic Preservation Act of 1966 (NHPA)

NHPA supplements the provisions of the Antiquities Act of 1906 and establishes laws for historic resources to "preserve important historic, cultural, and natural aspects of our national heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of individual choice." The law makes it illegal to destroy, excavate, or remove from federal or Indian lands any archaeological resources without a permit from the land manager. Regulations for the ultimate disposition of materials recovered as a result of permitted activities state that archaeological resources excavated on public lands remain the property of the United States. Archaeological resources excavated from Indian lands remain the property of the Indian or Indian tribe having rights of ownership over such resources.

Archaeological and Historic Preservation Act of 1974

Passed and signed into law in 1974, the Archaeological and Historic Preservation Act of 1974 (AHPA) amended and expanded the Reservoir Salvage Act of 1960. The AHPA requires that federal agencies provide for the preservation of historical and archaeological data (including relics and specimens) which might otherwise be irreparably lost or destroyed as a result of any alteration of the terrain caused by any federal construction project or federally licensed activity or program.

Archaeological Resources Protection Act of 1979

The ARPA applies when a project may involve archaeological resources located on federal or tribal land. ARPA requires that a permit be obtained before excavation of an archaeological resource on such land can take place.

The American Indian Religious Freedom Act of 1978

The American Indian Religious Freedom Act of 1978 (AIRFA) proclaims that the US Government will respect and protect the rights of Indian tribes to the free exercise of their traditional religions; the courts have interpreted this as requiring agencies to consider the effects of their actions on traditional religious practices.

Native American Graves Protection and Repatriation Act of 1990

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) also applies if human remains of Native American origin are discovered on federal land. NAGPRA requires federal agencies and federally assisted museums to return "Native American cultural items" to the federally recognized Indian tribes or Native Hawaiian groups with which they are associated. Regulations (43 CFR Part 10)

stipulate the following procedures be followed. If Native American human remains are discovered, the following provisions would be followed to comply with regulations:

- Notify, in writing, the responsible federal agency;
- Cease activity in the area of discovery and protect the human remains;
- Certify receipt of the notification;
- Take steps to secure and protect the remains;
- Notify the Native American tribes or tribes likely to be culturally affiliated with the discovered human remains within one working day; and
- Initiate consultation with the Native American tribe or tribes in accordance with regulations described in 43 CFR, Part 10, Subpart B, Section 10.5.

Archaeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines

The Secretary of the Interior's Standards for the Treatment of Historic Properties address four treatments: preservation, rehabilitation, restoration, and reconstruction. As stated in the regulations (36 CFR Part 68) promulgating the Standards, "one set of standards …will apply to a property undergoing treatment, depending upon the property's significance, existing physical condition, the extent of documentation available, and interpretive goals, when applicable. The Standards will be applied, taking into consideration the economic and technical feasibility of each project." These Standards apply not only to historic buildings but also to a wide variety of historic resource types eligible to be listed in the National Register of Historic Places. This includes buildings, sites, structures, objects, and districts.

Guidelines, however, are developed to help apply the Standards to a specific type of historic resource. Thus, in addition to these Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, there are also guidelines for cultural landscapes, historic lighthouses, historic vessels, historic furnished interiors, and historic covered bridges. The Guidelines were revised in 2017.

The Secretary of the Interior's Standards for the Treatment of Historic Properties are regulatory only for projects receiving Historic Preservation Fund grant assistance and other federally assisted projects. Otherwise, the Guidelines are intended to provide general guidance for work on any historic building.

4.5.2.2 State

California Environmental Quality Act

Under the California Environmental Quality Act (CEQA) a "project that may cause a substantial adverse change in the significance of a historic resource is a project that may have a significant effect on the environment."[5] This statutory standard involves a two-part inquiry. The first involves a determination of whether the project involves a historic resource. If so, then the second part involves determining whether the project may involve a "substantial adverse change in the significance" of the resource. To address these issues, guidelines that implement the 1992 statutory amendments relating to historical resources were adopted in final form on October 26, 1998 with the addition of *State CEQA Guidelines* Section 15064.5. The *State CEQA Guidelines* provide that for the purposes of CEQA compliance, the term "historical resources" shall include the following:[6]

- A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register;

- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code (PRC) or identified as significant in a historical resource survey meeting the requirements in Section 5024.1(g) of the PRC, shall be presumed to be historically or culturally significant. Public agencies must treat such resources as significant for purposes of CEQA unless the preponderance of evidence demonstrates that it is not historically or culturally significant;

- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets one of the criteria for listing on the California Register; and

- The fact that a resource is not listed in, or determined to be, eligible for listing in the California Register, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the

---

5 Public Resources Code Section 21084.1 Available online at: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=21084.1, accessed on March 25, 2026.

6 *State CEQA Guidelines* Section 15064.f (e). Available online at: https://www.law.cornell.edu/regulations/california/14-CCR-15064, accessed on March 25, 2026.

PRC), or identified in a historical resources survey (meeting the criteria in Section 5024.1(g)of the PRC) does not preclude a lead agency from determining that the resource may be a historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

Section 15064.5 of the *State CEQA Guidelines* also provides that "[s]ubstantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired."[7] Material impairment occurs when a project alters or demolishes in an adverse manner "those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion" in a state or local historic registry.[8]

Office of Historic Preservation

As an office of the California Department of Parks and Recreation, the Office of Historic Preservation (OHP) implements the policies of the NHPA on a statewide level. The OHP also carries out the duties set forth in the PRC and maintains the California Historic Resources Inventory.

The State Historic Preservation Officer (SHPO) is an appointed official who implements historic preservation programs within the state's jurisdiction. Also implemented at the state level, CEQA requires projects to identify any substantial adverse impacts which may affect the significance of identified historical resources.

California Register of Historical Resources (California Register)

The California Register is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change."[9] The criteria for eligibility for the California Register are based on National Register criteria. These criteria are:

- Criterion 1 – Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California of the United States;

- Criterion 2 – Associated with the lives of persons important to local, California or national history;

---

7 *State CEQA Guidelines* Section 15064.5 (b)(1)

8 *State CEQA Guidelines* Section 15064.5 (b)(2)(A-C)

9 Public Resources Code Section 50241 (e)

- Criterion 3 – Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values; and
- Criterion 4 – Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

The California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed in the National Register of Historic Places (Category 1 in the State Inventory of Historical Resources) and those formally Determined Eligible for listing in the National Register of Historic Places (Category 2 in the State Inventory)
- California Registered Historical Landmarks from No. 0770 onward
- Those California Points of Historical Interest that have been evaluated by the Office of Historic Preservation (OHP) and have been recommended to the State Historical Resources Commission for inclusion in the California Register
- Other resources, which may be nominated for listing in the California Register, include:
- Historical resources with a significance rating of Categories 3 through 5 in the State Inventory. (Categories 3 and 4 refer to potential eligibility for the National Register, while Category 5 indicates a property with local significance):
    - Individual historical resources
    - Historical resources contributing to historic districts
    - Historical resources designated or listed as a local landmark

Additionally, a historic resource eligible for listing in the California Register must meet one or more of the criteria of significance described above and retain enough of its historic character or appearance to be recognizable as a historic resource and to convey the reasons for its significance. Historical resources that have been rehabilitated or restored may be evaluated for listing.

California Public Resources Code, Sections 5097.5, 5097.9, and 5097.98–99

Section 5097.5 of the PRC defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historical, or paleontological resources located on public lands. This Section also prohibits the knowing destruction of objects of antiquity without a permit (expressed permission) on public lands and provides for criminal sanctions. In 1987, it was amended to require consultation with the California Native American Heritage Commission whenever Native American graves are found. It also established that violations for taking or possessing remains or artifacts are felonies.

PRC 5097.9 establishes the California Native American Heritage Commission to make recommendations to encourage private property owners to protect and preserve sacred places in a natural state and to allow appropriate access to Native Americans for ceremonial or spiritual activities. The Commission is authorized to assist Native Americans in obtaining appropriate access to sacred places on public lands, and to aid state agencies in any negotiations with federal agencies for the protection of Native American sacred places on federally administered lands in California.

Section 5097.9 of the PRC authorizes the Native American Heritage Commission (NAHC) to regulate Native American concerns regarding the excavation and disposition of Native American cultural resources. Among its duties, the Commission is authorized to resolve disputes relating to the treatment and disposition of Native American human remains and items associated with burials. Upon notification of the discovery of human remains by a county coroner, the Commission notifies the Native American group or individual most likely descended from the deceased.

PRC Sections 5097.98 through 5097.99 require that the Governor's California Native American Heritage Commission be consulted whenever Native American graves are found. According to these Sections, it is illegal to take or possess remains or artifacts taken from Native American graves; however, it does not apply to materials taken before 1984. Violations occurring after January 1, 1988, are felonies.

AB 52

Approved by Governor Brown on September 25, 2014, Assembly Bill 52 (AB 52) establishes a formal notification and, when requested, consultation process for California Native American Tribes to identify potential significant impacts to Tribal Cultural Resources (TCRs), as defined in PRC Section 21074, as part of CEQA.

Tribal cultural resources as defined in PRC Section 21074 are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or eligible under the California Register of Historical Resource or included in a local register of

historical resources; resources determined by the lead agency to be significant pursuant to subsection c of Section 5024.1; a cultural landscape that is geographically defined in terms of the size and scope of the landscape; and a historical resource described in Section 21084.1, or a unique archaeological resource defined in subsection g of Section 21083.2, or a "nonunique archaeological resource" as defined in subsection h of Section 21083.2.

California Health and Safety Code, Section 7050 and Sections 18950 through 18961

Consistent with the provisions of Section 50907.9 of the PRC, Section 7050 of the Health and Safety Code (HSC) authorizes the NAHC to regulate Native American concerns regarding the excavation and disposition of Native American cultural resources. Among its duties, the Commission is authorized to resolve disputes relating to the treatment and disposition of Native American human remains and items associated with burials. Upon notification of the discovery of human remains by a county coroner, the Commission notifies the Native American group or individual most likely descended from the deceased.

The State Historic Building Code (HSC §§ 18950–18971) provides alternative building regulations and building standards for the rehabilitation, preservation, restoration (including related reconstruction), or relocation of buildings or structures designated as historic buildings. Such alternative building standards and building regulations are intended to facilitate the restoration or change of occupancy so as to preserve their original or restored architectural elements and features, to encourage energy conservation and a cost-effective approach to preservation, and to provide for the safety of the building occupants.

California Penal Code Section 622 – Destruction of Historical Properties

This section of the California Penal Code makes it a misdemeanor for anyone (except the owner) to willfully injure or destroy anything of archaeological interest or value, whether on private lands or within any public park or place. In addition, Penal Code Section 622.5 sets the penalties for the damage or removal of cultural resources.

Senate Bill 18 – Traditional Tribal Cultural Places

Senate Bill (SB) 18, enacted in 2004, requires local governments to consult with Native American groupsat the earliest point in the local government land use planning process. The consultation intends to establish a meaningful dialogue regarding potential means to preserve Native American places of prehistoric, archaeological, cultural, spiritual, and ceremonial importance. It allows for tribes to hold conservation easements and for tribal cultural places to be included in open space planning.

Executive Order B-10-11

Executive Order B-10-11 states that it is the policy of the administration that every state agency and department subject to executive control is to encourage communication and consultation with California Native American tribes. It established the position of Governor's Tribal Advisor in the Office of the Governor of California. This position will serve as a direct link between the Governor's Office and tribal governments on matters including legislation, policy, and regulation.

4.5.2.3 Local

Kern County General Plan

Kern County General Plan cultural resources represent the contributions and collective human experiences of the past. Kern County maintains a number of archaeological remains, historic buildings, traditional customs, tangible artifacts, historical documents, and public records that provide continuity with the County's past. In addition to federal and state regulations, the County may also provide regulatory protection and advisement regarding cultural resources. California law requires that a General Plan include seven elements (Land Use, Open Space, Conservation, Housing, Circulation, Noise, and Safety). Many jurisdictions, including the County, incorporate policies related to cultural and historical resources into the Conservation Element. Other jurisdictions choose to prepare a separate (optional) element dealing with cultural and/or historic preservation issues. The Kern County General Plan does not currently include a historical element; however, the following policy relating to the protection of cultural resources is included in the County's General Plan:

- The County will promote the preservation of cultural and historic resources that provide ties with the past and constitute a heritage value to residents and visitors.

Metropolitan Bakersfield General Plan

The Metropolitan Bakersfield General Plan does not currently include a historical element, but does include the following policies related to the preservation of the area's cultural resources:

- Provide for streetscape improvements, landscape, and signage that uniquely identify major and/or historic residential neighborhoods.

- Provide for the retention of historic residential neighborhoods as identified in the Historical Resources Element if adopted by the City of Bakersfield.

- Require that new commercial uses maintain visual compatibility with single-family residences in areas designated for historic preservation.
- Encourage renovation and the adaptive reuse of significant cultural and entertainment facilities downtown.
- Promote the creation of both residential and commercial historic districts and encourage the upgrading of historic structures.
- As part of the environmental review procedure, an evaluation of the significance of paleontological, archaeological, and historical resources and the impact of proposed development on those resources shall be conducted, and appropriate mitigation and monitoring shall be included for development projects.
- Development on land containing known archaeological resources (i.e., high sensitivity areas) shall utilize methodology set forth, as described as necessary by a qualified archaeologist, to locate proposed structures, paving, landscaping, and fill dirt in such a way as to preserve these resources undamaged for future generations when it is the recommendation of a qualified archaeologist that said resources be preserved in situ.
- The preservation of significant historical resources shall be encouraged by developing and implementing incentives such as building and planning application permit fee waivers, Mills Act contracts, grants and loans, implementing the State Historic Building Code, and other incentives as identified in the City's Historic Preservation Ordinance.
- The preservation of significant historical resources shall be promoted, and other public agencies or private organizations shall be encouraged to assist in the purchase and/or relocation of sites, buildings, and structures deemed to be of historical significance.

Kern County Historical Society

The Kern County Historical Society is a Countywide, nonprofit organization founded in 1931 as an outgrowth of the Society of Kern Pioneers. The Society is devoted to preserving, publishing, and distributing information related to the history of Kern County. In addition to publishing multiple books and brochures, the nonprofit organization has sponsored the placement of landmark plaques throughout the County and has worked with the State Division of Parks and Recreation in the restoration of Fort Tejon.

Other Local City General Plans

In addition to federal and state regulations, participating cities in the Kern Council of Governments may also provide regulatory protection and advisement regarding cultural resources in their General Plans (**Table 4.5-2, City Policies and Ordinances Relevant to Cultural Resources in Kern County**).

Table 4.5-2
Other City Policies and Ordinances Relevant to Cultural Resources in Kern County

City	City Policies and Ordinances
Tehachapi	Chapter 2.1 General Plan **Policy Numbers:** TF17, TF18, TF29, EV6, NR40, NR41, NR42, NR43, NR44, CH20-CH34 **Policies Specific to Archaeological Resources:** Yes **Policies Specific to Historic Resources:** Yes
Ridgecrest	Chapter 7: Open Space & Conservation Element of General Plan **Policy Numbers:** OSC-3.1 - OSC-3.9 **Policies Specific to Archaeological Resources:** Yes: 3.3, 3.7 **Policies Specific to Historic Resources:** Yes: 3.1, 3.2, 3.4, 3.5, 3.6, 3.9
Shafter	Chapter 6: Environmental Management Program of General Plan **Policy Numbers:** 6.6 Cultural Resources, Policies 1-7 **Policies Specific to Archaeological Resources:** Yes: 1, 2 **Policies Specific to Historic Resources:** Yes: 4-7r
Taft	Chapter 5: Open Space and Conservation Element of General Plan **Policy Numbers:** C-54-C-56 **Policies Specific to Archaeological Resources:** Yes: C-56 **Policies Specific to Historic Resources:** Yes: C-55, C-56
Wasco	Chapter 11: Community Design Element of General Plan **Policy Numbers:** CD Policy 4 **Policies Specific to Archaeological Resources:** No **Policies Specific to Historic Resources:** Yes: CD Policy 4

4.5.3 ENVIRONMENTAL IMPACTS

4.5.3.1 Thresholds of Significance

Cultural Resources

For the purposes of this EIR, Kern COG has determined that adoption and/or implementation of the proposed 2026 RTP could result in significant adverse impacts to archaeological and/or historical resources, if any of the following could occur:

- Cause a substantial adverse change in the significance of a historical resource pursuant to *State CEQA Guidelines* Section 15064.5.

- Cause a substantial adverse change in the significance of an archaeological resource pursuant to *State CEQA Guidelines* Section 15064.5.

- Disturb any human remains, including those interred outside of formal cemeteries.

Tribal Cultural Resources

A significant adverse impact to tribal cultural resources would occur if the project:

- Cause a substantial adverse change in the significance of a tribal cultural resource defined in PRC section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

    - listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC section 5020.1(k), or

    - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

4.5.3.2 Methodology

The analysis assesses the potential impacts on cultural resources and tribal cultural resources that could result from the implementation of the proposed 2026 RTP. Impacts are assessed in terms of both land use and transportation impacts. By 2049, implementation of the proposed 2026 RTP will result in a land use distribution and transportation network that is different from existing conditions.

Determination of Significance

The methodology for determining the significance of cultural impacts compares the existing conditions to anticipated conditions in 2049 under the 2026 RTP, as required by *State CEQA Guidelines* Section 15126.2(a). The known historical, archaeological, and paleontological resources located within the region were evaluated using the criteria set forth by the OHP, the California Register of Historic Resources, and

the *State CEQA Guidelines*. The research analysis was limited to state and federally recognized historic resources and landmarks and does not include landmarks of local significance.

As noted above, areas within the region contain archaeological localities that are rich with fossil-bearing sedimentary formations. All areas within the region have the potential for yielding undiscovered archaeological resources, paleontological resources, and human remains. Each known site is documented at the Southern San Joaquin Valley Information Center (California State University, Bakersfield), which holds location information on archaeological sites in Kern County. Paleontological sites are also numerous in Kern County. The development of new transportation facilities, as well as new development consistent with the SCS, could affect archaeological, paleontological, and/or tribal resources, primarily through the disturbance of buried resources. Frequently, these resources are previously unidentified. Therefore, any excavation in previously undisturbed soil or geologic formation has the potential to impact archaeological, paleontological, and tribal resources.

The construction of new transportation facilities, as well as new development consistent with the SCS, could affect historic architectural resources (generally structures 50 years or older), either through direct effects on buildings or through indirect effects on the area surrounding a resource through the creation of one or more visually incompatible structures adjacent to a historic structure.

Impacts on cultural resources fall into three categories: (1) direct disturbance of buried resources, (2) direct impact or alteration of structures, and (3) indirect impacts to structures, such as vibration and corrosive air contaminants, and creation of a visually incompatible environment. The County contains a large number of cultural resources; therefore, the potential for impacts to these resources is substantial. Improvements within existing rights-of-way and that only affect previously disturbed soils are less likely to affect resources. New structures in historic districts are more likely to result in a significant impact. Similarly, excavation in previously undisturbed soils has a higher potential to impact resources, depending on the location and sensitivity. Also, reducing buffer zones between transportation corridors and historic resources through lane widening or construction of associated structures (such as noise walls) could cause significant impacts.

This document analyzes impacts to cultural resources on a programmatic level; as details of project design and alternatives become available, project-level analysis of impacts must be undertaken as appropriate.

Approach to Mitigation

As discussed in **Chapter 1.0, Introduction,** Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that

include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

4.5.3.3 Impact Analysis

Impact CR-1 **Cause a substantial adverse change in the significance of a historical resource pursuant to *State CEQA Guidelines* Section 15064.5.**

Regional and Transit Priority Areas Impacts

Generally, potential impacts to historic structures would occur during the construction of new land uses and new transportation improvements. The potential to impact historic resources varies by location and type of project. Historical resources are most prevalent in areas that were initially developed more than 50 years ago, including historic downtown areas such as downtown Bakersfield, as well as other communities settled in the late 1800s, including Caliente, Bealville, Tehachapi, Mojave, and Rosamond. Concentrations of historic structures and the presence of historic districts are thus more likely in developed areas. However, historic structures can still be encountered in isolated areas of older development. Historical resources can also be encountered outside of urban areas in the form of historic mines, mining camps, rural residences, and other historic features.

Within Kern County, numerous historic structures are listed in and eligible for the NRHP and/or the CRHR, as well as recognized as locally significant by local governments. Many properties contain buildings and structures 50 years old or older that have not been formally recorded or evaluated for the NRHP or CRHR. Consequently, it is likely that there are additional historic structures located in the study area eligible for listing in the NRHP, CRHR, or eligible as locally designated historical resources. Therefore, the 2026 RTP plan area likely contains historic structures for the purposes of CEQA.

Construction due to land use and transportation changes may result in construction impacts to historical resources, particularly in Transit Priority Areas (TPAs) that are located in older urban centers where structures of architectural or historical significance are likely to be found. However, many urban areas were developed in the 1970s and 1980s, which are now either at or approaching 50 years old and should be evaluated for significance. Many of the planned transportation projects include the construction of additional lanes and highway arterials; see **Chapter 3.0, Project Description**. Construction and implementation of these projects, as well as construction of development projects, could impact the physical and aesthetic integrity of historic buildings and communities, as well as negatively impact the structures through increased levels of corrosive air contaminants and vibration, which may damage the exterior of historic buildings. Ground-disturbing and other activities associated with construction can result in damage, physical demolition, destruction, relocation, or alteration of historical buildings or structures. Such alterations could result in a substantial adverse change to historically significant resources. If historical resources cannot be completely avoided by project design, impacts to historical resources could be significant.

While the projected regional increase in developed area would be relatively small compared to the total area of Kern County and would occur over the lifespan of the 2026 RTP (through 2049), land use changes and transportation improvements resulting from implementation of the proposed 2026 RTP have the potential to cause significant impacts to historical resources from construction and ongoing operations.

Improvements proposed in existing "rights of way," such as high-occupancy vehicle (HOV) lanes, BRT and goods movement capacity enhancement projects, mixed flow lanes, and "right of way" maintenance (such as pot-hole repair) would have limited potential to impact historic resources (through increased vibration).

When land use or transportation improvements require the modification or removal of a historic structure, significant impacts will likely occur. In many cases, these impacts can be reduced to a less than significant level by avoiding the resource, minimizing alterations, and designing building use that retains its character-defining features. In cases involving the entire removal of the historic structure and/or loss of the character-defining features, this impact may be significant and unavoidable.

Impacts to historical resources due to operations can result from increased vibration. Some historic resources are more susceptible to damage from vibration than modern buildings, depending on their materials and structure. Commercial, residential, and light industrial uses do not routinely involve large vibration sources that would affect neighboring buildings. Traffic on roadways is rarely the source of groundborne vibration because vehicles are supported on spring suspension and pneumatic tires. Rail operations, however, can be a source of groundborne vibration. New or expanded rail operations have

the potential to result in vibration and could expose vibration-sensitive structures to excessive groundborne vibrations. Historic structures, in particular, are considered sensitive to vibration due to the materials used or the age of the structure. Operations, land use, and transportation changes could result in new vibration sources that could significantly affect vibration-sensitive historic buildings. **Table 4.5-3, 2022 RTP Freight Rail Projects,** provides the rail type, location, and general description of rail projects located in the 2026 RTP.

Table 4.5-3
2026 RTP Freight Rail Projects

Location	Project Description
Shafter- BSNF Mainline	Intermodal Rail Facility
Shafter- UP mainline	Intermodal Rail Facility
Mojave- UP	Airport Rail Spur Extension
Delano- UP Cold Connect	Added Rail Spur
Bakersfield- BSNF Mainline	Bulk Oil Transload Facility
Arvin Subdivision	Upgrade and possibly extend the rail line

Source: Kern COG RTP 2026.

Over the lifespan of the proposed 2026 RTP, some land use changes and transportation improvements that are located within proximity to one another will be developed concurrently, which may increase the potential for construction of these development projects to result in damage, destruction, or alteration of historical buildings or structures.

Impacts on historical resources related to land use and transportation changes from construction projects and ongoing operations resulting from implementation of the proposed 2026 RTP are considered potentially significant for **Impact CR-1**. Mitigation is required. **Mitigation Measure MM CR-1** below would reduce these impacts.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measure

MM CR-1: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to require historical resource studies and to identify and implement project-specific mitigation.

As part of planning, design, and engineering for projects, implementing and local agencies should ensure that historic resources are treated in accordance with applicable federal, state, and local laws and regulations. When a project has been identified as potentially affecting a historical resource, a historical resources inventory should be conducted by a qualified architectural historian. The study should comply with *State CEQA Guidelines* section 15064.5(b), and, if federal funding or permits are required, with section 106 of the National Historic Preservation Act (NHPA) of 1966 (16 USC Sec. 470 *et seq.*). As applicable, the study should consist of the following elements:

- A records search at the Southern San Joaquin Valley Information Center (California State University, Bakersfield);
- Contact with local historical societies, museums, or other interested parties as appropriate to help determine locations of known significant historical resources;
- Necessary background, archival and historic research;
- A survey of built environment/architectural resources that are 50 years old or older that may be directly or indirectly impacted by project activities; and
- Recordation and evaluation of built environment/architectural resources that are 50 years old or older that may be directly or indirectly impacted by project activities;
- Buildings should be evaluated under CRHR and/or NRHP Criteria as appropriate and recorded on California Department of Parks and Recreation 523 forms.

These elements should be compiled into a Historical Survey Report that should be submitted to the Southern San Joaquin Valley Information Center (California State University, Bakersfield) and should also be used for SHPO consultation if the project is subject to NHPA section 106.

If architectural resources are deemed as potentially eligible for the California Register of Historic Resources or the National Register of Historic Places, implementing and local

agencies should consider avoidance through project redesign as feasible and appropriate. If avoidance is not feasible, implementing or local agencies should ensure that historical resources are formally documented through the use of large-format photography, measured drawings, written architectural descriptions, and historical narratives. The documentation should be entered into the Library of Congress and archived in the California Historical Resources Information System. In the event of building relocation, implementing and local agencies should ensure that any alterations to significant buildings or structures conform to the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.

Level of Significance After Mitigation

Mitigation Measure MM CR-1 would reduce impacts on historical structures. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measure above, impacts are considered significant and unavoidable.

Impact CR-2 **Cause a substantial adverse change in the significance of an archaeological resource pursuant to *State CEQA Guidelines* Section 15064.5.**

Regional and Transit Priority Area Impacts

The Office of Historic Preservation (OHP) defines an archaeological "site" as consisting of three or more related resources discovered in one locality. In the event of archaeological discovery, the resources are collected, documented, and curated at an educational institution, such as a school or a museum.

A unique archaeological resource includes artifacts or sites that meet any one or all of the following criteria:

- It has made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States;
- It is associated with the lives of persons important to California's past;
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; and/or
- It has yielded, or may be likely to yield, information important to the prehistory or history of California.

Humans have occupied Kern County for at least 10,000 years, and as a result, Kern County contains numerous archaeological resources. The locations of Native American villages, burial grounds, and other archaeological sites are confidential. Archaeologists do not reveal information about these locales in order to preserve the integrity of these sites. Unknown sites run the risk of being impacted, as their locations are unknown and cannot be avoided prior to surveys.

It is likely that numerous prehistoric and historic-period archaeological resources in the region have not been located, recorded, or evaluated. There are large areas of the County not subjected to archaeological survey that may contain archaeological resources. Additionally, there are likely a large number of archaeological resources that have been located and recorded but have not been evaluated for eligibility for listing in the CRHR or NRHP because that entails further study, including excavation, which is destructive to the resource. Therefore, the 2026 RTP plan area contains significant archaeological resources for the purposes of CEQA.

Prehistoric archaeological resources are likely to be encountered near areas of prior Native American occupation and activity, which includes areas both within and outside of areas of current development. Surficial archaeological deposits are more likely to be heavily disturbed within urban areas and more intact in rural settings; however, this does not preclude the presence of buried archaeological resources that may be significant in urban settings.

When land use or transportation improvements require the modification or removal of archaeological resources, significant impacts could occur. These impacts can (but may not always) be reduced to a less than significant level by avoiding the resource, minimizing disturbance and/or investigating and recovering resources and data about the resource when the resource is not avoidable.

Impacts from land use and transportation changes as a result of the proposed 2026 RTP could result from ground disturbance associated with grading and excavation in previously undisturbed soils. The 2026 RTP land use policies aim to focus growth in urban areas that are generally located in disturbed areas. In most cases, the potential for discovering buried archeological resources in previously disturbed areas is low, as any resources that existed have likely been either removed or destroyed during previous excavations. Improvements and modifications to existing rights-of-way, such as HOV lanes, busways, bike lanes, other transportation facilities, and right-of-way maintenance, would have less potential to impact archaeological resources because these projects are generally in areas where soils have previously been disturbed.

Nonetheless, development associated with the 2026 RTP would also occur on previously undisturbed sites or in previously undisturbed soils. Disturbance of archaeological features or resources can

compromise the physical integrity and information potential of any archaeological deposits. Disturbance could result in a significant impact if the resource were eligible for listing in federal or state registers and the physical characteristics of a historical resource that convey its significance and qualify it for inclusion in the CRHR, or in a local register or survey that meets the requirements of California PRC Sections 5020.1(k) and 5024.1(g) are demolished or substantially altered. If significant archaeological resources cannot be completely avoided by project design, ground-disturbing and other activities associated with construction of land use and transportation projects as a result of the proposed 2026 RTP may result in damage, or destruction of significant archaeological resources.

Impacts to archaeological resources are most often a result of construction, but operational impacts can result as well. For instance, installation of facilities that attract the public can result in increased illicit collecting from sites. Sites that had previously been hard to access are now available to larger numbers of people, who may collect artifacts. Potential impacts from construction and ongoing operations associated with land use changes and transportation improvements resulting from implementation of the proposed 2026 RTP have the potential to cause significant impacts on archaeological resources.

Implementation of most of the 2026 RTP transportation improvements would be within existing rights-of-way. Improvements and modifications within existing rights-of-way would have less potential to encounter previously unknown archaeological resources relative to projects in undisturbed areas, since the former right-of-way areas have already been disturbed. Improvements and modifications within existing rights-of-way still have the potential to adversely affect archaeological resources, either directly or indirectly. Federal and State laws provide substantial protection for archaeological resources, and full adherence to these regulations can address potential impacts in some circumstances.

Development of a detailed, site-specific analysis of archaeological impacts at the programmatic level is not feasible. However, as 2026 RTP transportation projects are designed and reviewed by local jurisdictions, they will undergo technical analysis to evaluate any potential impacts to cultural resources within their area of potential effect. Since damage to or destruction of archaeological resources could occur as a result of 2026 RTP transportation projects or increased development, impacts on archaeological resources related to land use and transportation changes from implementation of the proposed 2026 RTP is considered potentially significant for **Impact CR-2**. Mitigation is required. **Mitigation Measure MM CR-2** below would mitigate these impacts.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

MM CR-2: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to require consultation, surveys, and monitoring for archaeological resources.

During environmental review of projects, implementing and local agencies should:

- Consult with the Native American Heritage Commission to determine whether known sacred sites are in the project area and identify the Native American(s) to contact to obtain information about the project area.

- Conduct a records search at the Southern San Joaquin Valley Information Center (California State University, Bakersfield) to determine whether the project area has been previously surveyed and whether resources were identified.

In the event the records indicate that no previous survey has been conducted, the Southern San Joaquin Valley Information Center (California State University, Bakersfield) will make a recommendation on whether a survey is warranted based on the archaeological sensitivity of the project area. If recommended, a qualified archaeologist should be retained to conduct archaeological surveys. The significance of any resources that are determined to be in the project area should be assessed according to the applicable local, state, and federal significance criteria. Implementing and local agencies should devise treatment measures to ameliorate "substantial adverse changes" to significant archaeological resources, in consultation with qualified archaeologists and other concerned parties. Such treatment measures may include avoidance through project redesign, data recovery excavation, and public interpretation of the resource.

Implementing and local agencies and the contractors performing the improvements should adhere to the following requirements:

- If a project is located in an area rich with cultural materials, implementing and local agencies should retain a qualified archaeologist to monitor any subsurface operations, including but not limited to grading, excavation, trenching, or removal of existing features of the subject property.

- If, during the course of construction cultural resources (i.e., prehistoric sites, historic sites, and isolated artifacts and features) are discovered, work should be halted

immediately within 50 meters (165 feet) of the discovery, implementing and local agencies should be notified, and a qualified archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology should be retained to determine the significance of the discovery.

- Implementing and local agencies should consider mitigation recommendations presented by a professional archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology for any unanticipated discoveries and should carry out the measures deemed feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. The project proponent should be required to implement any mitigation necessary for the protection of cultural resources.

Level of Significance After Mitigation

Mitigation Measure MM CR-2 would reduce impacts on archaeological resources. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measure above, impacts are considered significant and unavoidable.

Impact CR-3 **Disturb any human remains, including those interred outside of formal cemeteries.**

Regional and Transit Priority Area Impacts

Humans have occupied the Kern County region for at least 10,000 years and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, it is possible that excavation and construction activities, regardless of depth, may yield human remains that may not be interred in marked, formal burials. Construction activities for each transportation improvement would generally be within 150 feet on either side of any improvement and could result in a significant impact relative to the discovery of human remains. Similarly, construction of development projects throughout the region has the potential to encounter human remains. Under CEQA, human remains are protected under the definition of archaeological materials as being "any evidence of human activity." Human remains are also protected under NAGPRA, which was enacted to provide protection to Native American graves, as well as culturally affiliated items, associated funerary objects, unassociated funerary objects, sacred objects, and objects of cultural patrimony.

2026 RTP transportation projects are focused in TPAs, where there is a significant amount of existing transportation and commercial infrastructure. Because much of the TPAs have been disturbed, the likelihood of discovering human remains during construction activities is low. Nevertheless, 2026 RTP transportation projects as well as land use development have the potential to impact previously undiscovered human remains, because some projects would take place in previously undisturbed or areas with only little previous disturbance. Excavation and soil removal of any kind, irrespective of depth, has the potential to encounter human remains. Thus, impacts from implementation of the proposed 2026 RTP at the regional level and within TPAs are considered potentially significant for **Impact CR-4**. **Mitigation Measures CR-2** above and **CR-3** below would reduce these impacts.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

See **MM CR-2.**

MM CR-3: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to implement Stop-Work and Consultation Procedures Mandated by PRC 5097.

In the event of discovery or recognition of any human remains during construction or excavation activities implementing and local agencies should cease further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the following steps are taken:

- The Kern County Coroner has been informed and has determined that no investigation of the cause of death is required.
- If the remains are of Native American origin, either of the following steps will be taken:
  - The coroner should contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner should make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include

obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.

– Implementing or local agencies or authorized representatives should retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:

- The Native American Heritage Commission is unable to identify a descendent.
- The descendant identified fails to make a recommendation.
- The implementing agency or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

Level of Significance After Mitigation

Mitigation Measures MM CR-2 and **MM CR-3** would reduce impacts on human remains. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measure above, impacts are considered significant and unavoidable.

Impact TCR-1 **Cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Code section 21074 that is:**

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.

Regional and Transit Priority Area Impacts

Transportation projects and anticipated growth under the Plan have the potential to cause a substantial adverse change in the significance of tribal cultural resources in the Kern GOG region, defined in PRC section 21074, as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe. Subsequent transportation projects following the adoption of the RTP that are subject to the CEQA would be required to initiate tribal consultation with interested tribes in order to comply with the provisions of AB 52.

Direct permanent impacts to TCRs (resources either listed or eligible for listing in the California Register of Historical Resources, or local register of historical resources, or resources determined by the lead agency to be significant) may result from ground disturbance associated with construction, such as grading and excavation. The development of new transportation facilities, construction of additional lanes, or the projected land use pattern stemming from the 2026 RTP may have a relatively higher potential to directly impact TCRs, primarily by grading or excavation in previously undisturbed soil and by the disturbance of buried resources that have not been previously identified. The potential for direct impacts to TCRs may be comparatively less for improvements to existing facilities and modifications to existing rights-of-way since these areas have been previously disturbed. Regardless of prior disturbance, however, any excavation has the potential to directly impact undocumented TCRs of an archaeological nature.

As discussed for archeological resources above, many tribal cultural resources are encountered near areas of prior Native American occupation and activity, which includes areas both within and outside areas of current development. Surficial archaeological deposits that are TCRs are more likely to be heavily disturbed within urban areas and more intact in rural settings; however, this does not preclude the presence of buried archaeological resources that may be significant in urban settings. Archaeological sites that may meet the TCR definition that have been buried below grade have no surface manifestations, making the accurate prediction of their location during project planning problematic.

Direct permanent impacts would be significant if TCRs cannot be avoided or preserved in place by project design or redesign and are destroyed or substantially altered. Disturbance of TCR features or places would compromise the traditional use of or the cultural character and integrity of the resource and may result in a significant impact if its contributing characteristics or the character of its physical setting is destroyed or substantially altered. Permanent direct impacts may be addressed by advance project planning and consulting with tribes that have requested consultation to ensure known TCRs are avoided and preserved in place, or to develop project alternatives that would minimize impacts to known TCRs.

Permanent direct impacts to TCRs of an archaeological nature discovered inadvertently during project construction may be addressed by project redesign to avoid and preserve the TCR, and by requested tribal consultation focused on minimizing the impact.

Permanent indirect impacts from construction and operational improvements may result from potential access-related damage to TCRs when public accessibility is increased due to changes in land use or new or improved transportation networks stemming from the Plan. The likelihood of unauthorized artifact collecting and destruction (intentional or unintentional) of TCRs of an archaeological nature, or of damage to or destruction (intentional or unintentional) of TCRs that are traditional places for gathering natural resources, cultural landscapes or sacred places, increases with ease of access. Recreational use, overland vehicle travel, and vandalism would degrade the integrity and traditional use of the TCRs. Ensuring appropriate measures that would minimize or reduce damage to TCRs are devised during project planning, coupled with requested tribal consultation, may reduce indirect access-related impact.

While there are state requirements in place to minimize adverse impacts to TCRs, there is still the potential for access-related damage associated with construction and operation of projects under the Plan. Therefore, impacts to TCRs related to land use and transportation changes from construction projects and ongoing operations resulting from implementation of the proposed 2026 RTP are considered potentially significant for Impact TCR-1. Mitigation is required. **Mitigation Measures MM-CR-2** and **MM-CR-3** above and **MM-TCR-1** below would reduce these impacts.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measure

See **MM-CR-2** and **MM-CR-3**.

MM TCR-1 Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to consult with the Native American Heritage Commission, as well as Native American tribes, to identify opportunities for early and effective consultation to identify tribal cultural resources to avoid such resources wherever practicable and feasible and reduce or mitigate for conflicts in compatible land use to the maximum extent practicable.

Level of Significance After Mitigation

Mitigation Measures MM CR-2 and **MM CR-3,** and **TCR-1** would reduce impacts on Tribal Cultural

Resources. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measure above, impacts are considered significant and unavoidable.

4.5.4 CUMULATIVE IMPACTS

The 2026 RTP includes transportation projects and land use strategies that will shape the region over the next 26 years. These changes include the extension of transportation and related infrastructure that would impact cultural resources. Many of these transportation projects will facilitate access not only within the County but also to areas outside the region. In addition, Plan projects will connect with projects outside the region, thereby facilitating and potentially inducing the construction of transportation infrastructure outside the region. This additional infrastructure outside the County could lead to additional development, both inside and outside the region. The 2026 RTP impacts would add to the cultural resource impacts of cumulative projects (transportation projects and development in accordance with RTP plans of adjacent jurisdictions). As discussed above, implementation of the 2026 RTP would result in significant impacts to historical resources, archaeological resources, and tribal cultural resources and would contribute to significant cumulative impacts throughout the State of California as resources are impacted by new development and as land is disturbed.

4.6 ENERGY

This section of the EIR describes the existing conditions related to energy in the Kern COG region, identifies the regulatory framework with respect to laws and regulations that address energy, and analyzes the significance of the potential energy impacts that could occur from development of the 2026 RTP.

The recent wars in Iran and Ukraine (and subsequent sanctions placed on Russian oil) are likely to have global ramifications for years to come. Energy prices in the West, including in the United States, are already rising substantially. The long-term effects of these conflicts are hard to determine at present, but are likely to substantially affect the U.S., California, and Kern County energy production and consumption for the near and medium term and possibly even the long-term. This may result in increased production of oil, at least in the short term, and increased pressure to develop renewable sources and use renewable sources of energy. However, recent federal overhauls of existing regulations aimed at renewable energy sources and reducing greenhouse gas emissions under the second Trump administration strain these sustainability goals. But for now, the extent and duration of such changes are not reasonably foreseeable and therefore cannot be addressed in this environmental document.

4.6.1 ENVIRONMENTAL SETTING

4.6.1.1 Definitions

Terms and criteria used in the assessment of energy are described below.

Natural Gas: Natural gas is a naturally occurring hydrocarbon mixture consisting primarily of methane and formed when layers of decomposing carbon material are exposed to intense heat under the Earth's surface over millions of years.

Petroleum: Petroleum is a naturally occurring liquid mixture of hydrocarbons found in geological formations beneath the Earth's surface and is refined into various types of fuels, including gasoline, kerosene, and diesel oil.

Renewable energy: Renewable energy is a form of energy that is collected from renewable resources, which are naturally replenished on a human timescale, such as sunlight, wind, rain, tides, waves, and geothermal heat. Renewable energy often provides energy for electricity generation, air and water heating/cooling, transportation, and off-grid energy services.

Acre-Feet: Unit of volume used to reference large-scale water resources, such as reservoirs, aqueducts, canals, and river flows. One acre-foot is equivalent to approximately 326,000 gallons or enough water to cover an acre of land by one foot.

British Thermal Units (Btu): The amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit.

Therms: Unit of heat equivalent to 100,000 Btu.

Watt: Unit of power equivalent to one joule per second, corresponding to the power in an electric circuit.

Watt-hour: Unit of energy equivalent to one watt of power expended for one hour of time.

4.6.1.2 Energy Supply

Oil

America's energy resources are divided almost evenly between several sources: approximately one third of resources is petroleum, one third is natural gas, and one third consists of renewable energy, coal, and nuclear.[1] Petroleum (referred to as "oil") is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. With the exception of the COVID-19 pandemic, which disrupted global travel, world consumption of petroleum products has grown steadily since 1983. The U.S. Energy Information Administration estimated that global consumption of petroleum and liquid fuels averaged 104 million barrels per day (b/d) for all of 2025, which is a 1.1 million b/d increase from 2024.[2] They forecast that global consumption of petroleum and liquid fuels will increase by 3.5 million b/d in 2026 to average 105.2 million b/d. The world supply of oil is anticipated to peak (i.e., reach the point of maximum production) sometime between now and 2050, before beginning a terminal decline that will put a significant strain on the economy if not anticipated and mitigated. However, the timing of the peak depends on multiple, uncertain factors that will affect how quickly remaining oil is consumed, such as the amount of oil that still remains in the ground; how much of the amount in the ground can be extracted and produced based on technological, economic, and environmental feasibility; and future demand for oil.

In 2023, the United States consumed an average of about 20.25 million barrels of petroleum per day, or a total of about 7.39 billion barrels of petroleum. The drop in consumption in 2020 from 2019 was the largest

---

1 U.S. Energy Information Administration, *U.S. Energy Facts Explained*, available online at: https://www.eia.gov/energyexplained/us-energy-facts/, accessed on March 27, 2026.

2 US Energy Information Administration, *World Liquid Fuels Consumption*, https://www.eia.gov/outlooks/steo/report/global_oil.php, accessed on March 27, 2026.

recorded annual decline in U.S. petroleum demand. The decrease was largely the result of the global response to the coronavirus (COVID-19) pandemic.[3] US oil production peaked around 1970 and declined until 2008, where it has steadily climbed and passed 1970 levels in 2019 at 12,289 thousand barrels a day.[4] The US transportation sector is heavily dependent on oil and, in 2022, represented about 27 percent of US oil consumption.[5]

California's transportation sector is equally dependent upon oil, with petroleum-based fuels currently providing nearly all (87 percent) of California's transportation energy needs.[6] In 2023, Californians consumed approximately 13.6 billion gallons of gasoline and diesel fuel, resulting in the estimated emission of over 133 million metric tons of greenhouse gas equivalence. According to the latest inventory of statewide greenhouse gas emissions values, in 2023, the transportation sector represented 37.1 percent of statewide greenhouse gas emissions.[7]

Between 2024 and 2040, the state's population is anticipated to grow at an average of 0.3 percent annually. During the period of 2020 to 2023, the statewide population declined by about 1.1 percent, with the decline being attributed largely to reduced immigration; however, data from May 2024 showed a return to normal migration patterns. Additionally, statewide per capita income is expected to grow at an average annual growth rate of 1.8 percent from 2024 to 2040. These growth rates are anticipated to result in substantial increases in travel demand for California.[8]

According to the CEC's 2024 Integrated Energy Policy Report – transportation Energy Demand Forecast Update, the light-duty zero-emission vehicle (ZEV) market has grown slightly in 2024 compared to 2023, with ZEVs accounting for 25 percent of new vehicle sales in 2024. The total ZEV population of the state was

---

3 US Energy Information Administration. *Frequently Asked Questions*. http://www.eia.gov/tools/faqs/faq.cfm?id=33&t=6, accessed March 27, 2026.

4 U.S. Energy Information Administration, *Petroleum & Other Liquids Data: U.S. Field Production of Crude Oil, 2025. Available online at:* https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=mcrfpus2&f=a, accessed March 27, 2026.

5 US Energy Information Administration, *Use of Energy in the United States Explained: Energy Use for Transportation, 2022.* Available online at: https://www.eia.gov/energyexplained/?page=us_energy_transportation, accessed March 27, 2026.

6 The California Energy Commission. *California Retail Fuel Outlet Annual Reporting.* Available online at: https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting, accessed March 30, 2026.

7 California Energy Commission, *California Greenhouse Gas Emission Inventory Report*, 2025. https://ww2.arb.ca.gov/sites/default/files/2025-11/nc-2000_2023_ghg_inventory_trends.pdf, accessed March 30, 2026.

8 California Energy Commission. Final 2024 Integrated Energy Policy Report Update, October 2025. Available online at: https://www.energy.ca.gov/publications/2024/2024-integrated-energy-policy-report-update, accessed on March 30, 2026.

more than 1.5 million as of 2023, an increase from about 1.1 million in 2022.[9] In 2024, the California Department of Motor Vehicles (DMV) registered 25,113,445 light-duty gasoline vehicles, 1,758,070 gasoline hybrid vehicles, 593,359 light-duty diesel vehicles, 1,453,994 battery electric vehicles, 432,880 plug-in hybrid vehicles, and 12,957 fuel cell electric vehicles.[10]

Forecasts for petroleum consumption show a drop in gasoline consumption due to several variables, including the increase in gasoline prices and the improvement of hybrid and alternative fuel technologies. The CEC forecasts that between 2017 and 2030, total annual gasoline consumption in California will decline from approximately 15.8 billion gallons in 2017 to between 12.3 and 12.7 billion gallons in 2030. This decline comes in response to both increasing vehicle electrification and higher fuel economy for new gasoline vehicles. This is largely a result of higher fuel prices, efficiency gains, and competing fuel technologies.

Finally, the report highlights the California Vehicle Survey's findings, which found that vehicle miles traveled (VMT) were impacted by the distance to work and availability of transit. Therefore, changes in land-use patterns that reduce the distance between locations of job and residence, and increase the availability of urban transit, will reduce vehicle miles traveled and transportation fuel consumption per capita.

Similar to California and the US as a whole, the Kern region relies primarily on oil to meet its transportation needs. Motor vehicles are the largest consumers of fuel in the region's transportation sector. After gasoline, diesel fuel is the most utilized transportation energy source. The primary consumers of diesel fuel in the transportation sector are heavy-duty trucks, with medium-duty trucks, buses, light-duty passenger cars, and railway locomotives accounting for the remaining diesel fuel consumption.

Alternative fuels are defined as fuels not derived from petroleum, such as natural gas, ethanol, and electricity. However, like petroleum, alternative fuels like natural gas and ethanol (which are primarily composed of diesel fuel) are also nonrenewable, finite resources. Electricity is also considered nonrenewable when generated from natural gas or coal, but considered renewable when generated from sources like solar, hydroelectric, or wind energy. Most alternative fuel facilities in the region supply compressed natural gas (CNG) or electricity. The region's limited alternative fuel infrastructure severely constrains the use of alternative fuel passenger vehicles.

---

9 California Energy Commission, Adopted 2024 Integrated Energy Policy Report Update, October 9, 2025. Available online at: https://www.energy.ca.gov/publications/2024/2024-integrated-energy-policy-report-update, accessed March 30, 2026.

10 California Energy Commission, Light-Duty Vehicle Population in California, 2025. Available online at: https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics-collection/light, accessed March 30, 2026.

Although average fuel efficiency for autos and trucks has experienced some improvements during the last quarter century, fuel consumption associated with the large increase in VMT has exceeded the fuel consumption reductions achieved by improved efficiency, and the total amount of annual fuel consumption has continued to increase. The equipment and vehicles involved in the construction of transportation infrastructure (i.e., roadway and highway improvements; rail lines; etc.) also consume energy. Currently, construction equipment and vehicles are generally dependent on petroleum-based fuels.

Kern County is the largest oil-producing county in the state, producing an estimated 70 percent of California's oil production and 3 percent of U.S. oil production.[11] The five largest oil fields in California are located in Kern County, including South Belridge, Midway-Sunset, Kern River, Cymric, and Elk Hills. In 2023, Kern County produced over 73 percent of the total onshore oil produced in California.[12]

Electricity

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. In 2024, approximately 78 percent of the electrical power needed to meet California's demand was produced in the state. Approximately 6 percent of its electricity demand was imported from the Pacific Northwest and 17 percent from the Southwest.[13] In 2024, California's electricity was derived primarily from natural gas (34.01 percent), renewable resources which include geothermal (4.60 percent), biomass (1.94 percent), small hydroelectric resources (1.52 percent), wind (11.89 percent), and solar (21.30 percent) large hydroelectric resources (11.06 percent), nuclear sources (9.92 percent), coal (2.21 percent) and oil (0.01 percent).[14] Unspecified sources accounted for 1.46 percent.

Total statewide electricity consumption increased from 228,473 gigawatt-hours (GWh) in 1990 to 264,230 GWh in 2000, which is an estimated annual growth rate of 1.46 percent. The statewide electricity consumption in 2010 was 272,300 GWh, reflecting an annual growth rate of 2.07 percent between 1990 and 2010. In 2015, statewide energy consumption was about 284,005 GWh, decreasing to approximately 279,510 GWh in 2020. This represents an approximate 2% decrease as compared to 2015, and approximately 3%

---

11 Kern Economic Development Foundation, *The Economic Contribution of Oil and Gas in Kern County,* January 2021. Available online at: https://kernedc.com/wp-content/uploads/2021/04/KEDF-Economic-Contribution-of-the-Oil-and-Gas-Industry-in-Kern-County_-2021.pdf, accessed March 30, 2026.

12 Department of Conservation, California Geologic Energy Management Division, *2023 Annual Report of the State Oil and Gas Supervisor,* November 7, 2025. Available online at: https://www.conservation.ca.gov/calgem/pubs_stats/annual_reports/Pages/annual_reports.aspx, accessed March 30, 2026.

13 California Energy Commission, *2024 Total System Electric Generation.* Available online at: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2024-total-system-electric-generation, accessed March 30, 2026.

14 Ibid.

increase as compared to 2010.[15] In 2024, statewide energy consumption was about 281,605 GWh. This represents an approximate 9 percent decrease as compared to 2015, and approximately 8 percent increase as compared to 2020. Kern County consumed 15,273 million kWh (15,273 GWh) in 2024, approximately 5.4 percent of the State's total.[16]

Natural Gas

The state produces approximately 10 percent of its natural gas, importing about 90 percent from Canada, the Rockies, and the Southwest.[17] Natural gas supplies are derived from underground sources and brought to the surface at gas wells. Once it is extracted, the gas is purified, and the odorant that allows gas leaks to be detected is added to the normally odorless gas. Natural gas suppliers then send the gas into transmission pipelines, which are usually buried underground. Compressors propel the gas through the pipeline system, which delivers it to homes and businesses.

Total statewide annual end-user natural gas consumption increased from 12,794 million therms in 1990 to 13,713 million therms in 2000, which is an estimated annual growth rate of 7 percent. Statewide annual natural gas consumption then decreased to 12,655 million therms in 2010, which is an estimated decrease of approximately 8 percent. The statewide annual end-user natural gas consumption in 2016 was 12,739 million therms, reflecting an increase of less than 1 percent over the six years between 2010 and 2016. The statewide annual end-user natural gas consumption in 2024 was 11,104 million therms, reflecting a decrease of approximately 13 percent from 2016. Kern County consumed 1,915 million therms of natural gas in 1990; 1,887 million therms of natural gas in 2000 (3.8% increase from 1990), and 1,876 million therms of natural gas in 2010 (15% decrease from 2000). In 2024, Kern County consumed 1,368 million therms of natural gas (a 27 percent decrease from 2010).[18]

---

15 California Energy Commission. 2024. *Electricity Consumption by County: Kern County.* https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/california-energy-consumption-dashboards-0 , accessed April 30, 2026.

16 Ibid.

17 California Energy Commission. *Supply and Demand of Natural Gas in California,.* https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california, accessed March 30, 2026.

18 California Energy Commission. 2024. *Gas Consumption by County: Kern County.* https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/california-energy-consumption-dashboards-1 , accessed April 30, 2026.

Electricity and Natural Gas in Kern County

Electricity and natural gas are provided to Kern County customers by Pacific Gas and Electric Company (PG&E), Southern California Edison, and Southern California Gas Company (SoCalGas).

PG&E generally services the westerly portion of the County. SoCalGas also provides gas to customers in the western County. PG&E's service territory, referred to as its Kern Division, covers a large area of the County and includes Arvin, Bakersfield, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Wasco, and unincorporated portions of the County; portions of Santa Barbara, San Luis Obispo, and San Bernardino Counties are within the PG&E Kern Division. Within this area, PG&E serves gas and/or electricity to 154,000+ residential customers and about 23,000 commercial and industrial customers. SCE serves electricity only to most of the remaining parts of the County, including the mountain, foothill, and southern desert communities of the County. This includes Delano, Lake Isabella, and Tehachapi, Mojave, Rosamond, and other unincorporated areas. Southern California Gas provides gas-only service to various regions of Kern County.

Renewable and Alternative Energy Sources

Renewable Energy – Wind Energy and Solar Power

Electricity supply reliability depends, in part, on the diversity of energy sources. In 1978, Congress passed the Public Utilities Regulatory Policies Act (PURPA). The act defines facilities that use alternative or renewable energy sources as "qualifying facilities." It provides financial incentives for their installation and requires utilities to sign long-term power purchase contracts with qualifying facilities. The California Public Utilities Commission (CPUC) has adopted contract incentives to assist qualifying facilities. Qualifying facilities built in the Kern include wind and solar installations and a number of cogeneration units around the region. Original provisions of PURPA encouraged the construction of biomass-to-energy facilities, which use materials such as agricultural and wood waste as fuel for energy production.

Kern County hosts one of the first wind farms in the nation. Situated to the east of the mountain city of Tehachapi, the Tehachapi Pass Wind Farm is a pioneering effort at wind power generation beginning in the 1980s. Thanks to intensive maintenance, research, and development, several generations of turbines coexist and continue to provide power. To meet the state's renewable energy requirements, construction of upgraded transmission lines began in 2008. Currently, the series of wind farms known as the Tehachapi-Mojave Wind Resource Area consists of more than 5,000 turbines in a wide variety of sizes. Wind energy

at this location puts out 1.4 billion kilowatt-hours of electricity per year, enough to provide for half a million people.[19]

More recently, Kern County has become a center for solar power with a number of solar projects planned and approved in the desert and valley, totaling nearly 3,424 megawatts of power as of March 2017.[20] There are more than 19 commercial solar projects (20 megawatts or less) in the permitting process and two utility-scale solar projects (200+ megawatts) in the approval pipeline with the California Energy Commission. **Figure 4.6-1, Kern County Wind and Solar Farms**, provides the location of wind and solar farms in the County.

Alternative Fuels

Alternative fuels, as defined by the Energy Policy Act of 1992, include ethanol, natural gas, propane, hydrogen, biodiesel, electricity, methanol, and p-series fuels. These fuels are being used worldwide in a variety of vehicle applications.[21] Use of these fuels for transportation can generally reduce air pollutant emissions and can be domestically produced and derived from renewable sources.

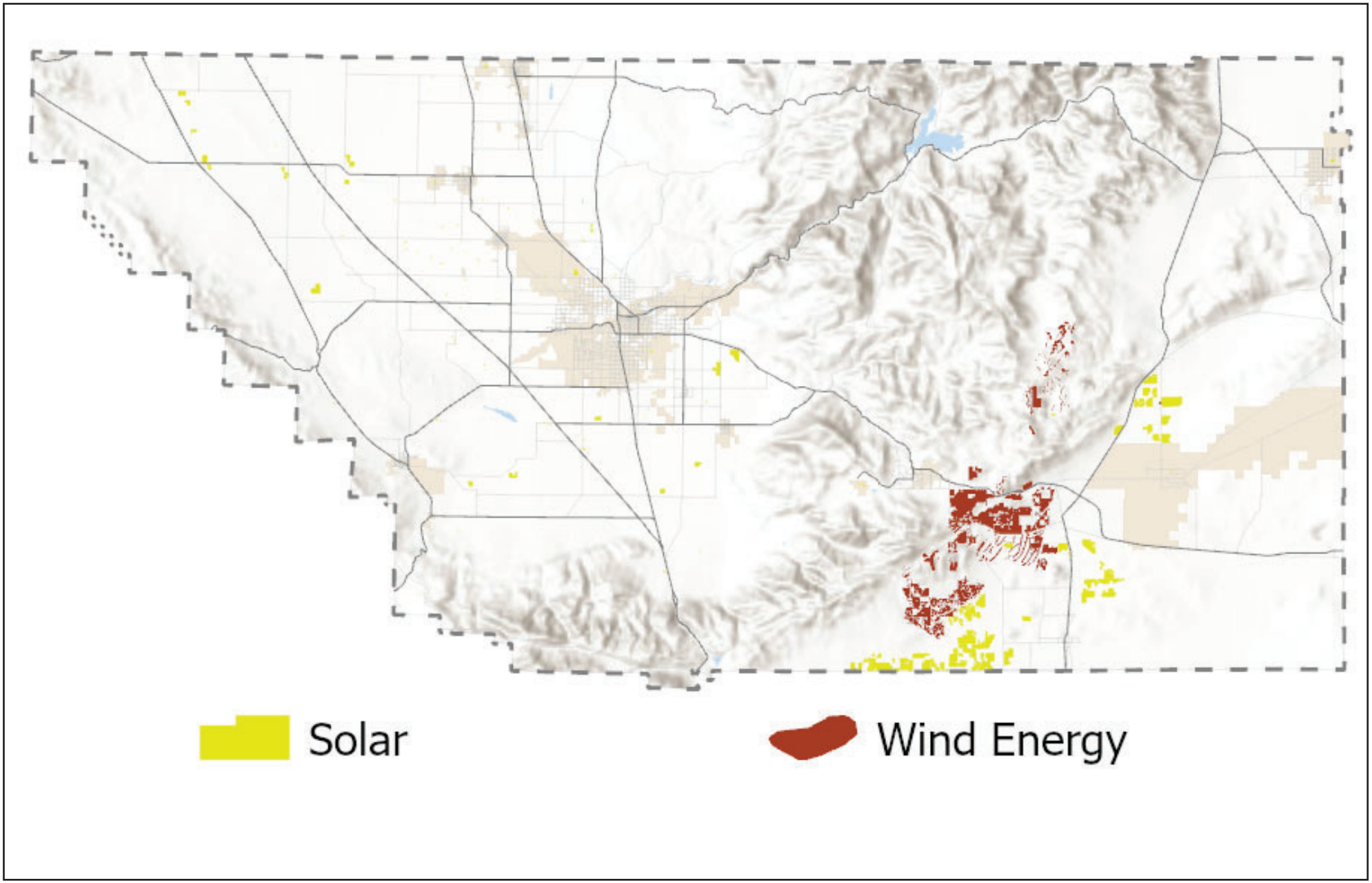
The Energy Policy Act of 2005 further directed the Department of Energy to carry out a study to plan for the transition from petroleum to hydrogen in a significant percentage of vehicles sold by 2020. Alternative fuel stations within Kern County are shown in **Table 4.6.1, Alternative Fuel Stations.** As shown, there are 77 alternative fueling stations within the County.

---

19 Tehachapi News, *Visitor Guide: Something in the air: Tehachapi Pass makes ideal wind energy location,* July 21, 2021. Available online at: https://www.tehachapinews.com/visitor-guide/visitor-guide-something-in-the-air-tehachapi-pass-makes-ideal-wind-energy-location/article_26808b50-dbaf-11eb-b54d-0330c6374226.html, accessed on March 30, 2026.

20 Desert Renewable Energy Conservation Plan, *Kern County Renewable Energy Fact Sheet,* 2022. Available online at: https://www.energy.ca.gov/programs-and-topics/programs/desert-renewable-energy-conservation-plan, accessed March 30, 2026.

21 U.S. Department of Energy, *Alternative Fuels Data Center*, https://www.afdc.energy.gov/, accessed March 30, 2026.



SOURCE: Kern COG, 2026

FIGURE **4.6-1**

IMPACT SCIENCES

Kern County Wind and Solar Farms

1170.004•04/26

Table 4.6-1
Alternative Fuel Stations

Company/Location	Address	Type
Outlets At Tejon - Green Lots	5701 Outlets at Tejon Parkway Suite 170 Arvin, CA 93203	Electric
City of Arvin	200 Campus Dr Arvin, CA 93203	Electric
Outlets at Tejon - Tesla Supercharger	5701 Outlets at Tejon Parkway Arvin, CA 93203	Electric
American Natural Gas	35750 Highway 58 Buttonwillow, CA 93206	CNG
Arvin Community Center	1001 Varsity Rd Arvin, CA 93203	Electric
Arvin Park & Ride	120 Plumtree St, Arvin Arvin, CA 93203	Electric
City Of Arvin	416 4th Ave Arvin, CA 93203	Electric
Self - Help Enterprises Caliente Creek	909 Meyer St Arvin, CA 93203	Electric
Arvin Park & Ride	120 Plumtree St, Arvin Arvin, CA 93203	Electric
Buttonwillow Community Site	140 Front St Buttonwillow CA 93206	Electric
Buttonwillow Raceway - Tesla Supercharger	24551 West Lerdo Highway Buttonwillow CA 93206	Electric
Buttonwillow, CA - Tesla Supercharger	20673 Tracy Ave. Buttonwillow, CA 93206	Electric
DC Corridor Buttonwillow L2	20672 Tracy Ave #102 Buttonwillow, CA 93206	Electric
City of Delano	725 S Lexington St Delano, CA 93215	CNG
Denny's Delano	14390 County Line Rd Delano, CA 93215	Electric
Best Western Liberty Inn	14390 County Rd Delano, CA 93215	Electric
Caltrans Maintenance Station - Delano	805 S Lexington St Delano, CA 93215	Electric
Walmart	530 Woollomes Ave Delano, CA 93215	Electric
Delano Chevy Station	600 1st Ave Delano, CA 93215	Electric
Bakersfield College - Delano Campus	1450 Timmons Ave Delano CA 93215	Electric
Pandol Bro	33150 Pond Road Delano CA 93215	Electric
Studio 6 Delano	2231 Girard St Delano CA 93215	Electric

Company/Location	Address	Type
Rancho Lindo Apartments	9023 Camino La Jolla Lamont, CA 93241	Electric
Kern County Superior Court-Lamont	12022 Main St Lamont, CA 93241	Electric
Mountain View Village	11450 Main St Lamont, CA 93241	Electric
Kern County Superior Court-Lamont	12022 Main St Lamont, CA 93241	Electric
Mountain View Village	11450 Main St Lamont, CA 93241	Electric
Flying J	42810 Frazier Mountain Park Rd Frazier Park, CA 93243	Propane
Petro Shopping Center - Tesla Supercharger	5602 Dennis McCarthy Drive Lebec, CA 93243	Electric
DC Corridor Frazier Park L2	73 Frazier Mountain Park Rd Lebec, CA 93243	Electric
DC Corridor Tejon Ranch L2	5521 Dennis McCarthy Dr Lebec, CA 93243	Electric
Tejon Pass Rest Area - I5 South	Interstate 5 Mile Marker 206 Lebec, CA 93243	Electric
ARCO	201 Frazier Mountain Park Rd Lebec, CA 93243	Electric
Jack in the Box	72 Frazier Mountain Park Road Lebec, CA 93243	Electric
7-Eleven	51526 Ralphs Ranch Rd Lebec, CA 93243	Electric
Tejon Pass Rest Area SB	111 Landfill Road Lebec, CA 93243	Electric
Days Inn	14684 Aloma St Lost Hills, CA 93249	Electric
Love's Travel Stop #230	21948 Highway 46 Lost Hills, CA 93249	CNG
Raju Countryside Market (Lost Hills, CA)	21959 CA-46 Lost Hills, CA 93249	Electric
Denny's - Tesla Supercharger	I-5 CA-46 Lost Hills, CA 93249	Electric
Almond Village	14869 Lamberson Ave Lost Hills, CA 93249	Electric
Wonderful Pistachios & Almonds	13646 CA-33 Lost Hills, CA 93249	Electric
8852 Station 9	2701 Driver Rd Shafter, CA 93263	Electric
Richland Chevrolet	511 Central Avenue, Shafter, CA 93263	Electric
City of Shafter Corporation Yard	720 Commerce Way Shafter, CA 93263	Electric
Wonderful Industrial Park	4050 7th Standard Rd Shafter, CA 93263	Electric

Company/Location	Address	Type
Wonderful Orchards Cawelo	6801 Lerdo Hwy Shafter, CA 93263	Electric
Taft City Hall	209 E Kern St Taft, CA 93268	Electric
Taft Best Western	203 S 6th ST Taft, CA 93268	Electric
Taft Union High School	900 N 10th St Taft, CA 93268	Electric
City of Wasco	501 N F St Wasco, CA 93280	CNG
Valley GO	1500 Poplar Ave Wasco, CA 93280	Electric
Wasco City Hall	719 F St Wasco, CA 93280	Electric
The Wonderful Nurseries	27920 McCombs Rd Wasco, CA 93280	Electric
Self - Help Enterprises Sunrise Villas	1600 Poplar Ave Wasco, CA 93280	Electric
US Bank Wasco	1049 7th St Wasco, CA 93280	Electric
City of Wasco	746 8th St Wasco, CA 93280	Electric
City of Bakersfield - Amtrak Parking	601 Truxtun Ave Bakersfield, CA 93301	Electric
Strata CU DC Fast Charger	1717 Truxtun Ave Bakersfield, CA 93301	Electric
AHBD ADVENTIST 8	1609 28th St Bakersfield, CA 93301	Electric
The Padre Hotel - Tesla Destination	1702 18th St Bakersfield, CA 93301	Electric
Jim Burke Ford	2001 Oak St Bakersfield, CA 93301	Electric
Central - Medical Office Building	3733 San Dimas St Bakersfield, CA 93301	Electric
BMH 04 BMH DRS 2	420 34th St Bakersfield, CA 93301	Electric
Kern Community College District Weill Institute	2100 Chester Ave Bakersfield, CA 93301	Electric
City of Bakersfield City Hall South	1501 Truxtun Ave Bakersfield, CA 93301	Electric
Pearson Fuels	2600 White Ln Bakersfield, CA 93304	E85
Kern County Superintendent of Schools	705 S Union Ave Bakersfield, CA 93307	CNG
U-Haul	102 S Union Ave Bakersfield, CA 93307	Propane
DC Corridor Bakersfield L2	1631 Comanche Dr Bakersfield, CA 93307	Electric

Company/Location	Address	Type
Weed Patch Park and Ride	8200 Kimber Ave Bakersfield, CA 93307	Electric
Walmart	6225 Colony St Bakersfield, CA 93307	Electric
ARRO Autogas - Delta Liquid Energy #14	3400 Buck Owens Blvd Bakersfield, CA 93308	Propane
San Joaquin Valley Air Pollution Control District - Bakersfield Regional Office	34946 Flyover Ct Bakersfield, CA 93308	Electric
SoCal Gas - Bakersfield Base	35118 McMurtrey Ave Bakersfield, CA 93308	CNG
Hampton Inn NRT Hampton Inn One	8818 Spectrum Park Way Bakersfield, CA 93308	Electric
U-Haul	6201 White Ln Bakersfield, CA 93309	Propane
Office Building	4900 California Ave Bakersfield, CA 93309	Electric
Bakersfield Plaza	4310 California Ave. Bakersfield, CA 93309	Electric
TSC Bakersfield TSC Lawcrest EV	200 Coffee Rd Bakersfield, CA 93309	Electric
Stockdale Medical Office Building	3501 Stockdale Hwy Bakersfield, CA 93309	Electric
Pearson Fuels	4050 Gosford Rd Bakersfield, CA 93309	E85
CSU Bakersfield Lot M	9001 Stockdale Hwy Bakersfield, CA 93311	Electric
Countryside Market - Shell	9741 South Enos Lane Bakersfield, CA 93311	Electric
Ming Medical Office Building	8800 Ming Ave Bakersfield, CA 93311	Electric
Target T2715 (Bakersfield, CA)	11000 Stockdale Hwy Bakersfield, CA 93311	Electric
PG&E - Bakersfield Service Center	4101 Wible Rd Bakersfield, CA 93313	CNG
Nissan of Bakersfield	2800 Pacheco Rd Bakersfield, CA 93313	Electric
Family Motors AG VW_422593_A	6000 Wible Rd Bakersfield, CA 93313	Electric
BMW Bakersfield Station 01	5400 Gasoline Alley Dr Bakersfield, CA 93313	Electric
Shell Gas - Tesla Supercharger	10565 Copus Road Bakersfield, CA 93313	Electric
Easy Trip Food Store - Tesla Supercharger	29541 Stockdale Hwy Bakersfield, CA 93314	Electric
7-Eleven	5203 Olive Dr Bakersfield, CA 93308	Electric
Baker Street Village	1015 S Baker St Bakersfield, CA 93307	Electric

Company/Location	Address	Type
Bakersfield College (Panorama Dr)	1801 Panorama Dr Bakersfield CA 93305	Electric
Bakersfield Marriott	801 Truxtun Ave Bakersfield, CA 93301	Electric
Benton Park Cottages	500 Hughes Ln Bakersfield, CA 93304	Electric
Bill Wright Service Center	5700 Gasoline Alley Drive Bakersfield, CA 93313	Electric
Brooks Brothers Interiors	2821 Brundage Lane Bakersfield, CA 93304	Electric
Bakersfield Mazda	3201 Cattle Dr Bakersfield, CA 93313	Electric
Brundage Ln Navigation Center	1900 E Brundage Ln Bakersfield CA 93307	Electric
Buena Vista Rd Site	1000 Buena Vista Rd, Bakersfield CA 93311	Electric
Califia Califia	33502 Lerdo Hwy Bakersfield, CA 93308	Electric
California Corp Station	4550 California Ave Bakersfield, CA 93309	Electric
Bakersfield College - Southwest	9400 Camino Media Bakersfield CA 93311	Electric
City of Bakersfield - 18th & Eye St Parking Garage	1600 18th St Bakersfield, CA 93301	Electric
City of Bakersfield - Aquatics Center	800 14th St Bakersfield, CA 93301	Electric
City of Bakersfield - Dignity Health Arena	1431 N St Bakersfield, CA 93301	Electric
City of Bakersfield - Park at Riverwalk	11200 Stockdale Hwy Bakersfield CA 93311	Electric
DoubleTree by Hilton Bakersfield - Tesla Supercharger	3100 Camino Del Rio Court Bakersfield, CA 93308	Electric
Douglas Street Apartments	517 Douglas St Bakersfield, CA 93308	Electric
Downtown Civic Cluster	1715 Chester Ave Bakersfield, CA 93301	Electric
Downtown Civic Lot	1660 S St Bakersfield, CA 93301	Electric
Downtown Civic Lot	1515 Eye St Bakersfield, CA 93301	Electric
Downtown Community Facility	2101 H St Bakersfield, CA 93301	Electric
Downtown Municipal Lot	2001 Truxtun Ave Bakersfield, CA 93301	Electric
East Hills MOB	3700 Mall View Rd Bakersfield, CA 93306	Electric
Flying J 613	17047 Zachary Ave Bakersfield, CA 93263	Electric

Company/Location	Address	Type
Kendrick Elementary School - GFUSD	2200 Faith Avenue Bakersfield, CA 93304	Electric
Horizon Elementary School - GFUSD	7901 Monitor Street Bakersfield, CA 93307	Electric
Greenfield Housing Authority	403 Boomerang Dr Bakersfield, CA 93307	Electric
City of Bakersfield - Wastewater Treatment Plant	6901 McCutchen Rd Bakersfield CA 93313	Electric
Mercedes Benz of Bakersfield	5600 Gasoline Alley Dr Bakersfield, CA 93313	Electric
Motor City GMC	3101 Pacheco Road Bakersfield, CA 93313	Electric
Motor City Lexus	5101 Gasoline Alley Dr Bakersfield, CA 93313	Electric
North Bakersfield Toyota	19651 Industry Parkway Drive Bakersfield, CA 93308	Electric
Olive Drive Towne Centre	1219 Olive Dr Bakersfield, CA 93308	Electric
Park Square at Seven Oaks	11325 Park Square Dr Bakersfield, CA 93311	Electric
Patel Properties	4004 Panama Ln Bakersfield, CA 93313	Electric
City of Bakersfield - Wastewater Treatment Plant	1700 E Planz Rd Bakersfield, CA 93307	Electric
Residence Inn By Marriott Bakersfield West	8312 Espresso Dr Bakersfield, CA 93307	Electric
Residences At East Hill	3345 Bernard St Bakersfield, CA 93306	Electric
Spectrum Fairfield Inn & Suites	8700 Spectrum Park Way Bakersfield, CA 93308	Electric
Tony's Pizza	10701 CA-178 Bakersfield, CA 93306	Electric
TownePlace Suites By Marriott Bakersfield West	8300 Granite Falls Dr Bakersfield, CA 93312	Electric
City of Bakersfield - Streets Department	4101 Truxtun Ave Bakersfield, CA 93309	Electric
IBEW Local 428	3921 Sillect Ave Bakersfield, CA 93308	Electric
Village Park Apartments	2300 R St Bakersfield, CA 93301	Electric
WattEV Charging Station	18836 CA-65 Bakersfield, CA 93308	Electric
West Yard Charger	1920 Golden State Ave Bakersfield, CA 93301	Electric
Wible Rd Site	3610 Wible Rd Bakersfield, CA 93309	Electric
State Compensation Insurance Fund	9801 Camino Media Bakersfield, CA 93311	Electric

Company/Location	Address	Type
RentaBikeNow for Store	9000 Stockdale Hwy Bakersfield, CA 93311	Electric
Olive Drive Towne Centre	1219 Olive Dr Bakersfield, CA 93308	Electric
Park Square at Seven Oaks	11325 Park Square Dr Bakersfield, CA 93311	Electric
Patel Properties	4004 Panama Ln Bakersfield, CA 93313	Electric
City of Bakersfield - Wastewater Treatment Plant	1700 E Planz Rd Bakersfield, CA 93307	Electric
Residence Inn By Marriott Bakersfield West	8312 Espresso Dr Bakersfield, CA 93307	Electric
Residences At East Hill	3345 Bernard St Bakersfield, CA 93306	Electric
Spectrum Fairfield Inn & Suites	8700 Spectrum Park Way Bakersfield, CA 93308	Electric
Tony's Pizza	10701 CA-178 Bakersfield, CA 93306	Electric
TownePlace Suites By Marriott Bakersfield West	8300 Granite Falls Dr Bakersfield, CA 93312	Electric
City of Bakersfield - Streets Department	4101 Truxtun Ave Bakersfield, CA 93309	Electric
IBEW Local 428	3921 Sillect Ave Bakersfield, CA 93308	Electric
Village Park Apartments	2300 R St Bakersfield, CA 93301	Electric
WattEV Charging Station	18836 CA-65 Bakersfield, CA 93308	Electric
West Yard Charger	1920 Golden State Ave Bakersfield, CA 93301	Electric
Wible Rd Site	3610 Wible Rd Bakersfield, CA 93309	Electric
State Compensation Insurance Fund	9801 Camino Media Bakersfield, CA 93311	Electric
RentaBikeNow for Store	9000 Stockdale Hwy Bakersfield, CA 93311	Electric
ARRO Autogas - Archer Travel Center	16660 Sierra Hwy Mojave, CA 93501	Propane
Anthony's Grill - Tesla Supercharger	16940 California 14 Mojave, CA 93501	Electric
Comfort Inn & Suites - Mojave, CA	1385 CA-58 BUS Mojave, CA 93501	Electric
Mojave Air & Space Port	16999 Airport Blvd Mojave, CA 93501	Electric
Mojave Airport	1434 Flight Line Mojave, CA 93501	Electric
DC Corridor Mojave DC1	16262 Sierra Hwy Mojave, CA 93501	Electric

Company/Location	Address	Type
Mojave Air & Space Port	1434 Flight Line St Mojave CA 93501	Electric
Mojave Thai Cuisine - Tesla Supercharger	16870 CA-14 Mojave CA 93501	Electric
Mojave Travel Center	16262 Sierra Hwy Mojave CA 93501	Electric
The Workz Mojave - Tesla Supercharger	16862 CA-14 Mojave CA 93501	Electric
Wienerschnitzel - Tesla Supercharger	16246 Sierra Highway, Mojave CA 93501	Electric
Mojave Air & Space Port	1434 Flight Line St Mojave CA 93501	Electric
CAC Station 1	22844 Virginia Blvd California City, CA 93505	Electric
Aspen Mall	8046 California City Blvd California City, CA 93505	Electric
One Stop Market	7990 California City Blvd California City, CA 93505	
Boron Rest Area - Eastbound	Boron SRRA - Eastbound, CA-58 Boron, CA 93516	Electric
Boron Rest Area - Westbound	Boron SRRA - Westbound, CA-58 Boron, CA 93516	Electric
LOVE'S 755 - CA #755	27201 Boron Frontage Rd Boron, CA 93516	Electric
Muroc JUSD Station 1	17100 Foothill Ave North Edwards, CA 93523	Electric
Muroc JUSD Station	1585 Forbes Ave Edwards, CA 93523	Electric
Inyokern Market - Tesla Supercharger	1353 Brown Road Inyokern, CA 93527	Electric
Inyokern Airport	1669 Airport Rd Inyokern, CA 93527	Electric
DC Corridor Inyokern L2	4467 US-395 Inyokern, CA 93527	Electric
Classic Burgers - Tesla Supercharger	6525 West Inyokern Road Inyokern, CA 93527	Electric
Love's Travel Stop #392	2000 E Tehachapi Blvd Tehachapi, CA 93561	CNG
City Hall Station 01 - Tehcachip	128 Rte 58 Tehachapi, CA 93561	Electric
DC Corridor Tehachapi L2	9000 Magellan Dr Tehachapi, CA 93561	Electric
Tehachapi	421 W J St Tehachapi, CA 93561	Electric
Baymont by Wyndham Tehachapi	500 Steuber Rd Tehachapi, CA 93561	Electric
Bank of the Sierra - Eastside	224 W F St Tehachapi, CA 93561	Electric

Company/Location	Address	Type
Flying J 1094	1668 E. Tehachapi Blvd Tehachapi, CA 93561	Electric
Panorama Towing Service	20621 South St Tehachapi, CA 93561	Electric
Surestay Hotel Best Western Tehachapi	418 W Tehachapi Blvd Tehachapi, CA 93561	Electric
TownePlace Suites by Marriott Tehachapi	1052 Magellan Dr Tehachapi, CA 93561	Electric
Camp Kernville	24 Sirretta St Kernville, CA 93238	Electric
Rivernook Campground	14001 Sierra Way	Electric

**Alternative Fuel Stations listed as private access were removed from the table.*
Source: Kern COG 2026

The following descriptions of alternative fuels are from the United States Department of Energy's Alternative Fuels Data Center website.[22]

Ethanol. Ethanol is a clear, colorless liquid. Blends of at least 85 percent ethanol are considered alternative fuels under the Energy Policy Act E85. A blend of 85 percent ethanol and 15 percent gasoline is used in flexible fuel vehicles (FFVs) that are currently offered by most major auto manufacturers. FFVs can run on gasoline, E85, or any combination of the two and qualify as alternative fuel vehicles under Energy Policy Act regulations.

Natural Gas. Natural gas is a mixture of hydrocarbons—mainly methane (CH_4)—and is produced either from gas wells or in conjunction with crude oil production. The interest in natural gas as an alternative fuel for automobiles stems mainly from its clean-burning qualities, its domestic resource base, and its commercial availability to end users. Because of the gaseous nature of this fuel, it must be stored onboard a vehicle in either a compressed gaseous state (CNG) or in a liquefied state (LNG).

Propane. Propane is produced as a by-product of natural gas processing and petroleum refining. Propane or liquefied petroleum gas (LPG) is a popular alternative fuel choice for vehicles because there is already an infrastructure of pipelines, processing facilities, and storage for its efficient distribution.

Hydrogen. Hydrogen is the simplest and lightest fuel is hydrogen gas (H_2). Hydrogen is in a gaseous state at atmospheric pressure and ambient temperatures. Hydrogen is being explored for use in combustion engines and fuel cell electric vehicles. The ability to create hydrogen from a variety of resources and its clean-burning properties make it a desirable alternative fuel. Although there is no significant transportation

22 U.S. Department of Energy, *Fuels & Vehicles*. Available online at: https://afdc.energy.gov/, accessed on March 30, 2026.

distribution system currently for hydrogen transportation use, hydrogen could be transported and delivered using the established hydrogen infrastructure; for significant market penetration, the infrastructure will need further development.

Biodiesel. Biodiesel is a domestically produced, renewable fuel that can be manufactured from vegetable oils, animal fats, or recycled restaurant greases. Biodiesel is safe, biodegradable, and reduces serious air pollutants such as particulates, carbon monoxide, hydrocarbons, and air toxics. According to the US Department of Energy, pure biodiesel (B100) is considered an alternative fuel under the Energy Policy Act. Lower-level biodiesel blends are not considered alternative fuels, but covered fleets can earn one Energy Policy Act credit for every 450 gallons of B100 purchased for use in blends of 20 percent or higher.

Electricity. Electricity can be used as a transportation fuel to power battery electric and fuel cell vehicles. When used to power electric vehicles or EVs, electricity is stored in an energy storage device such as a battery. Fuel cell vehicles use electricity produced from an electrochemical reaction that takes place when hydrogen and oxygen are combined in the fuel cell "stack." The production of electricity using fuel cells takes place without combustion or pollution and leaves only two byproducts, heat and water. As of October 2012, approximately a quarter of all personal electric vehicles (PEVs) sold in the nation were purchased by California drivers.[23]

Electric vehicles have several different charging systems: 120-volt, 240-volt, direct-current, and inductive charging. An electric vehicle that accepts 120-volt power can do so from any standard electrical outlet with a 12- or 16-amp dedicated branch circuit (with no other receptacles or loads on the circuit). A 240-volt system requires the installation of a home charging station and is available at most public charging stations. Direct current (DC) fast charging equipment (480 V) provides 50 kW to the battery. This option enables charging along heavy traffic corridors and at public stations. Inductive charging equipment was installed for all electric vehicles in the early 1990s, such as the GM/Saturn EV-1, Toyota RAV4 EV, and the Chevy S10, and is still being used in certain areas. Some companies are working on inductive charging options for future electric drive vehicles. The most common types of electric vehicles use either 120-volt or 240-volt electrical systems.

The US Department of Energy's Advanced Vehicle Testing Activity (AVTA) promotes the use of electric vehicles in commercial fleets in the United States. In 1996, AVTA requested and received proposals from interested groups to become qualified vehicle testers (QVT). Southern California Edison (SCE) headed one QVT. According to SCE, California's approximately 20,000 megawatts of excess off-peak (nighttime)

---

23 California Center for Sustainable Energy, *San Joaquin Valley Plug in Electric Vehicle Readiness Plan*, 2021. Available online at: http://energycenter.org/sites/default/files/docs/nav/programs/pev-planning/San_Joaquin_Valley_PEV_Readiness_Planning_Guide.pdf, accessed March 30, 2026.

electricity capacity would allow the charging of millions of electro-drive technologies without the need for new power generation facilities.

Methanol. Methanol, also known as wood alcohol, can be used as an alternative fuel in flexible fuel vehicles that run on M85 (a blend of 85 percent methanol and 15 percent gasoline). However, it is not commonly used because automakers are no longer supplying methanol-powered vehicles. Today, most of the world's methanol is produced by a process using natural gas as a feedstock. However, the ability to produce methanol from non-petroleum feedstocks such as coal or biomass is of interest for reducing petroleum imports.

P-Series fuel. P-Series fuel is a unique blend of natural gas liquids (pentanes plus), ethanol, and the biomass-derived co-solvent methyltetrahydrofuran (MeTHF). P-Series fuels are clear, colorless, 89 to 93 octane liquid blends that are formulated to be used in flexible fuel vehicles (FFVs). P-Series are designed to be used alone or freely mixed with gasoline in any proportion inside the FFV's gas tank. These fuels are not currently being produced in large quantities and are not widely used.

Energy Conservation and Global Climate Change

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with construction activities and the operation of passenger, public transit, and commercial and private vehicles results in greenhouse gas (GHG) emissions. In addition, alternative fuels like natural gas (including compressed natural gas (CNG) and liquid natural gas [LNG]), ethanol, and electricity (unless derived from solar, wind, nuclear, or another energy source that does not produce carbon emissions) also result in GHG emissions and contribute to global climate change. These issues are further addressed in **Section 4.8, Greenhouse Gases.**

4.6.2 REGULATORY FRAMEWORK

There are a number of regulations of greenhouse gas emissions that affect energy supply and demand – see **Section 4.8, Greenhouse Gases**.

4.6.2.1 Federal

Public Utility Regulatory Policies Act of 1978 (PURPA) (Public Law 95-617)

PURPA was passed in response to the unstable energy climate of the late 1970s. PURPA sought to promote the conservation of electric energy. Additionally, PURPA created a new class of nonutility generators, small power producers, from which, along with qualified co-generators, utilities are required to buy power.

PURPA was in part intended to augment electric utility generation with more efficiently produced electricity and to provide equitable rates to electric consumers. Utility companies are required to buy all electricity from "Qfs" (qualifying facilities) at avoided cost (avoided costs are the incremental savings associated with not having to produce additional units of electricity). PURPA expanded the participation of nonutility generators in the electricity market and demonstrated that electricity from nonutility generators could successfully be integrated with a utility's own supply. PURPA requires utilities to buy whatever power is produced by Qfs (usually cogeneration or renewable energy). Utilities want these provisions repealed; critics argue that it will decrease competition and impede the development of the renewable energy industry. The Fuel Use Act (FUA) of 1978 (repealed in 1987) also helped Qfs become established. Under FUA, utilities were not allowed to use natural gas to fuel new generating technologies but Qfs which were by definition not utilities, were able to take advantage of abundant natural gas and abundant new technologies (such as combined cycle). The technologies lowered the financial threshold for entrance into the electricity generation business as well as shortened the lead time for constructing new plants.

Energy Policy Act of 2005

On August 8, 2005, President George W. Bush signed the National Energy Policy Act of 2005 into law. This comprehensive energy legislation contains several electricity-related provisions that aim to:

- Help ensure that consumers receive electricity over a dependable, modern infrastructure;
- Remove outdated obstacles to investment in electricity transmission lines;
- Make electric reliability standards mandatory instead of optional; and
- Give Federal officials the authority to site new power lines in DOE-designated national corridors in certain limited circumstances

Clean Air Act

Section 211(o) of the Clean Air Act (the Act), as amended by the Energy Policy Act of 2005, requires the Administrator of the EPA to annually determine a renewable fuel standard (RFS) which is applicable to refiners, importers and certain blenders of gasoline, and publish the standard in the Federal Register by November 30 of each year. On the basis of this standard, each obligated party determines the volume of renewable fuel that it must ensure is consumed as motor vehicle fuel. This standard is calculated as a percentage, by dividing the amount of renewable fuel that the Act requires to be blended into gasoline for

a given year by the amount of gasoline expected to be used during that year, including certain adjustments specified by the Act.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act (EISA) (Public Law 110-140) was signed into law by President George W. Bush on December 19, 2007. The Act's goal is to achieve energy security in the United States by increasing renewable fuel production, improving energy efficiency and performance, protecting consumers, improving vehicle fuel economy, and promoting research on greenhouse gas (GHG) capture and storage. Under the EISA, the updated RFS program (RFS2) was expanded in several key ways:

1. EISA expanded the RFS program to include diesel, in addition to gasoline.
2. EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
3. EISA established new categories of renewable fuel and set separate volume requirements for each one.
4. EISA required the U.S. Environmental Protection Agency (EPA) to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

RFS2 lays the foundation for achieving significant reductions of GHG emissions from the use of renewable fuels, for reducing imported petroleum, and encouraging the development and expansion of our nation's renewable fuels sector. The EISA also includes a variety of new standards for lighting and for residential and commercial appliance equipment. The equipment includes residential refrigerators, freezers, refrigerator-freezers, metal halide lamps, and commercial walk-in coolers and freezers.

Infrastructure Investment and Jobs Act

The Infrastructure Investment and Jobs Act was passed in November 2021, and the Energy Information Administration (EIA) incorporated several of its provisions related to the energy sector in the Annual Energy Outlook 2022. In the electric power sector, a civil nuclear credit program was established to support nuclear power plants that are struggling to remain economically viable in competitive electricity markets and are at risk of shut down. A total of $6 billion is appropriated for fiscal years 2022–2026.

4.6.2.2 State

California Energy Commission

The California Energy Commission is the state's primary energy policy and planning agency. Created by the Legislature in 1974 and located in Sacramento, six basic responsibilities guide the Energy Commission as it sets state energy policy:

- Forecasting future energy needs;
- Promoting energy efficiency and conservation by setting the state's appliance and building efficiency standards;
- Supporting public interest energy research that advances energy science and technology through research, development, and demonstration programs;
- Developing renewable energy resources and alternative renewable energy technologies for buildings, industry, and transportation;
- Licensing thermal power plants 50 megawatts or larger; and
- Planning for and directing state response to energy emergencies.

State of California Integrated Energy Policy Report

In 2002, the Legislature reconstituted the State's responsibility to develop an integrated energy plan for electricity, natural gas, and transportation fuels. The CEC adopts and transmits to the Governor and Legislature a report of findings every two years and updates the report every other year. At a Special Business Meeting on November 12, 2003, the CEC adopted the 2003 Integrated Energy Policy Report. These reports make recommendations to increase California's energy supplies, reduce energy demand, broaden the range of alternatives to conventional energy sources, and improve the state's energy delivery infrastructure.

California Strategy to Reduce Petroleum Dependence (AB 2076)

AB 2076 (Chapter 936, Statutes of 2000) requires the CEC and the Air Resources Board (ARB) to develop and submit to the Legislature a strategy to reduce petroleum dependence in California. The statute requires the strategy to include goals for reducing the rate of growth in the demand for petroleum fuels. In addition, the strategy is required to include recommendations to increase transportation energy efficiency as well as

the use of nonpetroleum fuels and advanced transportation technologies, including alternative fuel vehicles, hybrid vehicles, and high-fuel efficiency vehicles.

The strategy, Reducing California's Petroleum Dependence, was adopted by the CEC and ARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and SUVs; and increase the use of nonpetroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

Alternative Fuels Plan Assembly Bill 1007

Adopted in December 2007, AB 1007 requires the CEC to prepare a state plan to increase the use of alternative fuels in California. The plan shall include an evaluation of alternative fuels for emissions or criteria air pollutants, air toxics, GHGs, water pollutants, and other harmful substances, and their impacts on petroleum consumption. The plan shall set goals for increased alternative fuel use in the state for the years 2012, 2017, and 2022 and recommend policies to ensure the alternative fuel goals are attained, including standards on transportation fuels and vehicle and policy mechanisms to ensure vehicles operating on alternative fuels use those fuels to the maximum extent feasible.

Bio-energy Action Plan – Executive Order S-06-06

Executive Order S-06-06 establishes targets for the use and production of bio-fuels and bio-power and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following targets to increase the production and use of bio-energy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its bio-fuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for the use of biomass electricity.

Governor's Low Carbon Fuel Standard (Executive Order S-01-07)

Executive Order S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through the establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard shall be incorporated into the State Alternative Fuels Plan required by AB 1007 and is one of the proposed discrete early action GHG reduction measures identified by ARB pursuant to AB 32.

California Building Energy Efficiency Standards: Title 24

California established statewide building energy standards following legislative action. The legislation required the standards to:

- Be cost effective;
- Be based on the building life cycle; and
- Include both prescriptive and performance-based approaches.

The standards have been periodically updated as technology and design have evolved. Generally, the standards are updated every three years. As a result of AB 970, passed in the fall of 2000 in response to the state's electricity crisis, an emergency update of the Standards went into effect in June 2001. The Commission then initiated an immediate follow-on proceeding to consider and adopt updated Standards that could not be completed during the emergency proceeding. The Energy Commission adopted the latest 2025 Building Energy Efficiency Standards on January 1, 2026.

Title 24 of the California Code of Regulations comprises the state Building Standards Code. Part 6 of Title 24 is the California Energy Code, which includes the building energy efficiency standards. The standards include provisions applicable to all buildings, residential and non-residential, which describe requirements for documentation and certificates that the building meets the standards. These provisions include mandatory requirements for efficiency and design of the following types of systems, equipment, and appliances:

- Air conditioning systems
- Heat pumps
- Water chillers
- Gas- and oil-fired boilers
- Cooling equipment
- Water heaters and equipment
- Pool and spa heaters and equipment
- Gas-fired equipment including furnaces and stoves/ovens
- Windows and exterior doors
- Joints and other building structure openings (envelope)
- Insulation and cool roofs
- Lighting control devices

The standards include additional mandatory requirements for space conditioning (cooling and heating), water heating, and indoor and outdoor lighting systems and equipment in non-residential, high-rise residential, and hotel or motel buildings.

In May 2018, the California Energy Commission voted unanimously, 5-0, to recommend energy efficiency standards to be added to state building regulations later in 2018, affecting all construction after January 1, 2020. The standards made California the first state in the nation to require solar panels on new homes.

SB 1078, Renewable Energy Procurement

This law requires investor-owned utilities such as Pacific Gas and Electric and Southern California Edison to have 20 percent of their electricity come from renewable sources by 2010. Previously, state law required that this target be achieved by 2017.

California Solar Initiative

On January 12, 2006, the California Public Utilities Commission (CPUC) approved the California Solar Initiative (R.04- 03-017), which provides $2.9 billion in incentives between 2007 and 2017. The CPUC will oversee a $2.5 billion program for commercial and existing residential customers, funded through revenues and collected from gas and electric utility distribution rates. Furthermore, the CEC will manage $350 million targeted for new residential building construction, utilizing funds already allocated to the CEC to foster renewable projects between 2007 and 2011.

On March 2, 2006, the CPUC opened a proceeding to develop rules and procedures for the California Solar Initiative and to continue consideration of policies for the development of cost-effective, clean, and reliable distributed generation (DG). On August 21, 2006, the Governor signed Senate Bill 1 (SB 1), which directs the CPUC and the Energy Commission to implement the CSI program consistent with specific requirements and budget limits set forth in the legislation and directs the CPUC and the Energy Commission to create 3,000 megawatts of new, solar-produced electricity by 2017.

As part of the 2019 California Building Standards Code update, the Building Energy Efficiency Standards (Energy Code) have solar photovoltaic (PV) system and solar-ready requirements. The solar PV system requirements apply to newly constructed low-rise residential buildings, while the solar-ready requirements are mandatory measures applicable to buildings that do not have a solar PV system installed. When a building is built to be solar-ready, applicable Energy Code requirements prepare the building for future installation of a solar energy system.

The California Solar Initiative General Market Program closed on December 31, 2016. While California continues its commitment to supporting clean, renewable energy such as solar, market transformation marked by significant drops in equipment prices indicates that direct incentives are no longer necessary. Solar customers are, however, eligible for the State's Net Energy Metering Program, which provides financial credit for customer-generated power fed back to the electric grid.

Renewable Energy: California Renewables Portfolio Standard Program

Established in 2002 under Senate Bill (SB) 1078, accelerated in 2006 under SB 107, expanded in 2011 under SB 2, and further expanded in 2015 under SB 350, California's Renewables Portfolio Standard (RPS) is one of the most ambitious renewable energy standards in the country. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020. On September 12, 2002, then-Governor Gray Davis signed SB 1078. SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010.

In November 2008, then-Governor Arnold Schwarzenegger signed Executive Order (EO) S-14-08, which expanded the state's RPS to 33 percent renewable power by 2020. In September 2009, former Governor Schwarzenegger continued California's commitment to the RPS by signing EO S-21-09, which directs the California Air Resources Board (CARB) under its Assembly Bill (AB) 32 authority to enact regulations to help the state meet its RPS goal of 33 percent renewable energy by 2020.

The 33 percent by 2020 goal was codified in April 2011 with SB X1-2, which was signed by Governor Edmund G. Brown, Jr. This RPS preempts the CARB 33 percent Renewable Electricity Standard and applies to all electricity retailers in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. These entities must adopt the new RPS goals of 20 percent of retail sales from renewables by the end of 2013 and 25 percent by the end of 2016, with the 33 percent requirement being met by the end of 2020.[24]

The Clean Energy and Pollution Reduction Act of 2015, SB 350 (Chapter 547, Statutes of 2015) was approved by Governor Brown on October 7, 2015. SB 350 does the following: (1) increases the standards of the California RPS program by requiring that the amount of electricity generated and sold to retail customers

---

24 At this time, California's top three POUs are well ahead of their respective RPS targets, with PG&E, SCE and SDG&E reporting RPS procurements for 2020 at 33%, 28% and 43%, respectively (https://www.cpuc.ca.gov/Search#sort=relevancy, accessed January 11, 2022).

per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030; (2) requires the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030; (3) provides for the evolution of the Independent System Operator into a regional organization; and (4) requires the state to reimburse local agencies and school districts for certain costs mandated by the state through procedures established by statutory provisions. Among other objectives, the legislature intends to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation (SB-350 Clean Energy and Pollution Reduction Act 2015).

On September 10, 2018, SB 100, the 100 Percent Clean Energy Act of 2018, was signed by Governor Jerry, the same day he issued EO B-55-18. SB 100 accelerates the goals of RPS and sets a state policy that eligible renewable energy and zero-carbon resources supply 100 percent of all retail sales of electricity by 2045. Likewise, EO B-55-18 established a statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Furthermore,

> *The goal of the [RPS] program is to achieve that 50% renewable resources target by December 31, 2026, and to achieve a 60% target by December 31, 2030. The bill would require that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours of those products sold to their retail end-use customers achieve 44% of retail sales by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030.*[25]

California Assembly Bill No. 1493 (AB 1493, Pavley) (Chapter 200, Statutes of 2002)

In response to the transportation sector accounting for more than half of California's carbon dioxide (CO2) emissions, AB 1493 (Chapter 200, Statutes of 2002), enacted on July 22, 2002, required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles whose primary use is noncommercial personal transportation manufactured in and after 2009. Refer to **Section 4.8, *Greenhouse Gases*,** for details regarding this regulation.

2022 Scoping Plan for Achieving Carbon Neutrality

The Scoping Plan is a GHG reduction roadmap developed and updated by CARB at least once every five years, as initially required by AB 32. It lays out the transformations needed across various sectors to reduce

---

25 See SB 100, https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB100, accessed April 15, 2022.

GHG emissions and reach the State's climate targets. CARB adopted the Final 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan Update) in December 2022 as the third update to the initial plan that was adopted in 2008. The 2022 Scoping Plan Update is the most comprehensive and far-reaching Scoping Plan developed to date. It identifies a technologically feasible, cost-effective, and equity-focused path to achieve new targets for carbon neutrality by 2045 and to reduce anthropogenic GHG emissions to at least 85 percent below 1990 levels, while also assessing the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan. The 2030 target is an interim but important stepping stone along the critical path to the broader goal of deep decarbonization by 2045. The relatively longer path assessed in the 2022 Scoping Plan Update incorporates, coordinates, and leverages many existing and ongoing efforts to reduce GHGs and air pollution, while identifying new clean technologies and energy. The 2022 Scoping Plan Update is set apart from previous iterations due to the focus on the accelerated deployment of clean technology and energy within every sector. Unlike previous Scoping Plans that separated out individual economic sectors, the 2022 Scoping Plan Update approaches decarbonization from two perspectives: (1) managing a phasedown of existing energy sources and technology and (2) ramping up, developing, and deploying alternative clean energy sources and technology over time through transportation sustainability and a reduction in vehicle miles traveled, a clean electricity grid that encourages the electrification of fleet vehicles, and sustainable manufacturing and buildings through decarbonization.[26] Given the focus on carbon neutrality, the 2022 Scoping Plan Update also includes discussion for the first time of the natural and working lands sectors as sources for both sequestration and carbon storage, and as sources of emissions as a result of wildfires.

Aligning local jurisdiction action with state-level priorities to tackle climate change and the outcomes called for in the 2022 Scoping Plan Update is identified as critical to achieving the statutory targets for 2030 and 2045. The 2022 Scoping Plan Update discusses the role of local governments in meeting the State's GHG reduction goals.[27] Local governments have the primary authority to plan, zone, approve, and permit how and where land is developed to accommodate population growth, economic growth, and the changing needs of their jurisdictions. They also make critical decisions on how and when to deploy transportation infrastructure, and can choose to support transit, walking, bicycling, and neighborhoods that do not force people into cars. Local governments also have the option to adopt building ordinances that exceed statewide building code requirements and play a critical role in facilitating the rollout of zero-emission vehicle (ZEV) infrastructure. As a result, local government decisions play a critical role in supporting state-

26 CARB, *2022 Scoping Plan for Achieving Carbon Neutrality*, 2022. Available online at: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf, accessed July 17, 2024.

27 CARB, *2022 Scoping Plan for Achieving Carbon Neutrality*, 2022. Available online at: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf, accessed July 5, 2024.

level measures to contain the growth of GHG emissions associated with the transportation system and the built environment—the two largest GHG emissions sectors over which local governments have authority.

The 2022 Scoping Plan Update also identifies multiple legal tools open to local jurisdictions to support statewide priorities, including development of a climate action plan (CAP), sustainability plan, or inclusion of a plan for reduction of GHG emissions and climate actions within a jurisdiction's general plan.

CEQA Guidelines Appendix F: Energy Conservation

The *California Environmental Quality Act (CEQA) Guidelines* Appendix F provides a goal of conserving energy in the state of California. The appendix indicates the following methods to achieve this goal: (1) decreasing overall per capita energy consumption, (2) decreasing reliance on natural gas and oil, and (3) increasing reliance on renewable energy sources.

4.6.2.3 Local

Kern Energy Watch Program

Kern COG has developed the Kern Energy Watch Program to design and operate a local government partnership program for the purpose of increasing energy conservation and efficiency within the County, cities, special districts, and other units of local government in the Kern region. Public utility partners include Pacific Gas & Electric, Southern California Edison, and Southern California Gas (Sempra Energy). The program is intended to:

- Organize and coordinate the activities of the Kern Energy Advisory Committee (KEAC), including preparation of meeting agendas, item supporting documentation, and minutes;
- Compose and circulate a Request for Proposals for professional services in designing a comprehensive and integrated Kern Regional Energy Plan;
- Conduct an inventory and needs assessment of local resources, information, and training activities of agencies in the Kern region;
- Design and implement a marketing program to provide program information to units of local government;
- Meet with each unit of local government and secure a formal commitment to join the Kern Energy Watch Program;
- Coordinate the conduct of energy assessments and audits;

- Conduct or coordinate the conduct of energy efficiency workshops & seminars; and
- Coordinate the provision of technical support and services for energy-efficient retrofit Projects.

As the largest jurisdictions in the region and the ones most likely to be impacted by the RTP, the applicable general plan policies for Kern County and the City of Bakersfield are identified below. Other cities in the region have similar applicable policies.

Kern County General Plan

The Kern County General Plan includes the following policies related to energy:

- The County will encourage development of alternative energy sources by tailoring its Zoning and Subdivision Ordinances and building standards to reflect Alternative Energy Guidelines published by the California State Energy Commission.
- Actively monitor the actions of local, state, and federal agencies related to energy development in Kern County and lobby and present its position on such matters as needed to protect County interests.
- Work with other agencies to define regulatory responsibility concerning energy-related issues.

Metropolitan Bakersfield General Plan

The Metropolitan Bakersfield General Plan includes the following policies related to energy:

- Locate new development where infrastructure is available or can be expanded to serve the proposed development.
- Ensure that land use and infrastructure development are coordinated.
- The developer shall be responsible for all on-site costs incurred as a result of the proposed project, in addition to a proportional share of off-site costs incurred in service extension or improvements. The availability of public or private services or resources shall be evaluated during discretionary project consideration. Availability may affect project approval or result in a reduction in size, density, or intensity otherwise indicated in the general plan's map provisions.
- Where possible, incorporate land encumbered with electrical transmission line easements with lines operating at 50,000 volts or above into development as a functional design component with the cooperation of the easement holder.

- Encourage the incorporation of land encumbered with electrical transmission line easements with lines operating at 50,000 volts or above into project design by providing incentives for the affected development.

- When planning for new development, coordinate with utility companies to designate future or potential electrical transmission line corridors as needed to serve the metropolitan area.

- Where possible, utilize land encumbered with electrical transmission line easements to provide open space linkages, the Kern River corridor, trail systems, and commercial/employment centers.

4.6.3 ENVIORNMENTAL IMPACTS

4.6.3.1 Thresholds of Significance

For the purposes of this EIR, Kern COG has determined that adoption and/or implementation of the 2026 RTP would result in significant energy impacts if any of the following would occur:

- Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.

- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

4.6.3.2 Methodology

Estimated energy consumption in 2049 is expected to represent the most conservative (i.e., highest energy consumption of any year in the Plan) because population and employment are projected to be higher in this year than in any earlier year, and changing conditions and future conservation efforts cannot be quantified at this time. No estimate is made of the impact of energy efficiency and conservation measures, which are likely to be adopted, resulting in energy consumption lower than that projected in this chapter.

Gasoline consumption in 2024 for Kern County was used as the existing use and was generated from the Kern COG travel model. Expected future transportation gasoline consumption for the year 2049 was determined from the Kern COG model, which provides estimated vehicular fuel consumption for the RTP.

The electricity and natural gas use for Kern County in 2024 was obtained from the CEC.[28,29] The combined electricity and natural gas use was estimated by Kern COG based on standard existing energy consumption factors, and not taking into account new regulations such as the residential and commercial building solar mandates.

Cumulative Analysis

The RTP addresses transportation projects and land use distribution patterns. These land use distribution patterns identify growth distribution and anticipated land use development to accommodate growth projections. The Kern Regional Travel Demand Model (RTDM) used for this analysis captures pass-through traffic that does not have an origin or destination in the region, but does impact the region, so that too is included in the project analysis. Although a similar level of development is anticipated even without the RTP, this Plan would influence growth, including distribution patterns, throughout Kern County. To address this, the analysis in the Program EIR covers the overall impacts of all transportation projects and land development described in the RTP. In addition, this Program EIR considers cumulative impacts from other regional plans (e.g., the Air Quality Management Plan and RTPs of adjacent jurisdictions), which could result in additional impacts inside and outside Kern County.

Determination of Significance

The methodology for determining the significance of energy impacts compares existing conditions to the expected future energy consumption with the Plan. The criteria above were applied to compare current energy usage to expected future (2049) Plan conditions.

Implementation of the 2026 RTP would affect the use of energy resources in Kern. The analysis of these impacts is programmatic at the regional level. The Plan would result in energy impacts as a result of the following: energy demands for construction of transportation projects and development; energy demands for operation of the regional transportation system, and the growing energy demand from growth associated with implementation of the 2026 RTP. Project-specific impacts vary and appropriate mitigation measures would need to be developed on a project-by-project basis, as appropriate.

---

28 California Energy Commission. 2024. *Electricity Consumption by County: Kern County.* https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/california-energy-consumption-dashboards-0 , accessed April 30, 2026.

29 California Energy Commission. 2024. *Electricity Consumption by County: Kern County.* https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/california-energy-consumption-dashboards-0 , accessed April 30, 2026.

Approach to Mitigation

As discussed in **Chapter 1.0, Introduction,** Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

4.6.3.3 Impact and Mitigation Measures

Each applicable threshold of significance is listed below, followed by analysis of the significance of any potential impacts and the identification of mitigation measures that would lessen or avoid potential impacts. Finally, the significance of potential impacts after implementation of all identified mitigation measures is presented.

Impact EN-1 **Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.**

Regional Impacts

Regional growth planned as part of the 2026 RTP would result in new development that would result in the consumption of energy to transport goods and people. Construction activities related to transportation improvements and population growth would require the use of diesel-powered heavy equipment and diesel generators. This would increase the use of diesel fuel in Kern County. Some activities would require the use of battery-powered equipment, and some would require connection to the electricity grid, which would increase the use of electricity produced from nonrenewable sources.

The population growth in the region would be expected to increase overall trips in the region. Although overall, the vehicle trips in Kern County would increase, future vehicles are expected to be more efficient as fleet mix changes and old less efficient cars are retired from the road. Many transit options included in the RTP are alternative fuel-based options, such as natural gas. In fact, in 2006, Golden Empire Transit (GET) became one of the first large transit fleets in the nation entirely fueled by natural gas and currently has a fleet of 90 compressed natural gas buses.[30] GET has also installed bike racks on all buses to facilitate intermodal trips. In addition, GET operates 21 compressed natural gas On-Demand buses and 10 Hydrogen Fuel cell buses. Kern Regional Transit (KRT) has implemented state and federal grants to acquire capital items such as the replacement of diesel buses, the replacement of CNG buses, a CNG fueling site, and bus shelters. The 2026 RTP aims to expand public transportation choices and transit usage by promoting compact, mixed-use development along major transit corridors. The RTP also includes funding for bicycle lanes and pedestrian facilities, especially to and from transit centers, to make transit accessibility safer and more convenient. It is important to note that while overall trips, specifically vehicle miles traveled, will increase, vehicle miles traveled per capita will decrease by 2049, indicating a more efficient transportation system. **Table 4.6-2, Gasoline and Diesel Consumption,** summarizes the expected gasoline consumption changes between 2024 and 2049 with the investments in the RTP and without (the No Project Alternative).

Table 4.6-2
Gasoline and Diesel Consumption

Scenario	Vehicle Miles Travelled (billions of miles per year)	Gasoline Consumption (million gallons per year)	Diesel Consumption (million gallons per year)
Existing (2024)	8.53	295.76	215.24
2026 RTP (2049)	9.29	204.29	247.84
No Project (2049)	9.79	215.82	261.16

Source: Kern COG 2026 Travel Demand Model

As indicated in **Table 4.6-2,** gasoline consumption would decrease by 29 percent by 2049 under the 2026 RTP and 27 percent under the No Project scenario. As discussed above, vehicle use is expected to reduce as transit options become more prevalent. In addition, vehicles in 2049 are expected to be more efficient and use less gasoline. However, as a result of an increase in goods movement activities (which typically rely on diesel-powered trucks), diesel consumption is expected to increase compared to existing conditions.

30 Golden Empire Transit, *About GET*, 2022. Available online at: https://www.getbus.org/about-get/, accessed on March 30, 2026.

The population in Kern County is expected to increase by 106,900 (or 12 percent) by 2049. Households are expected to increase from 290,800 to 351,900 in 2049. The anticipated housing associated with population growth would generate additional demand for energy (i.e., electricity and natural gas). As indicated in **Table 4.6-3**, **Residential Energy Use**, using current energy consumption factors, forecast urban development and growth that would occur as a result of the transportation investments and land use strategies in the RTP would result in increased overall use of energy resources in 2049 compared to 2024, although per household use would decrease. Part of this decrease would be due to implementation of aggressive policies aimed at upgrading heating/cooling systems and appliances in combination with low-carbon generation sources.[31]

Table 4.6-3
Residential Energy Use

Scenario	Total (Billion BTU) per year	Million BTU/Household per year
Existing (2024)	18,092	62.21
2026 RTP (2049)	21,718	61.72
No Project (2049)	22,007	62.54

Source: Kern COG 2026,
US Energy Information Administration (EIA) – 2020 Residential Energy Consumption Survey (hhld type factors), available online at: https://www.eia.gov/consumption/residential/data/2020/c&e/pdf/ce1.1.pdf. CA Energy Commission – Energy Consumption Reports by County 2024 (base year data) energy consumption dashboards for Residential Electricity and Natural Gas by county, available online at: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/california-energy-consumption-dashboards-0

Other sources of energy use include the commercial, agricultural, and industrial sectors. Similar to the analyses presented above, energy use associated with these sectors is expected to increase. However, as regulations (such as Title 24) continue to require more efficient development and overall awareness of the need for energy conservation increases, it is expected that energy consumption related to all sectors would not increase to the extent discussed in this EIR.

Over the course of the RTP's lifetime, higher efficiency development, along with solar panel requirements for new buildings, is anticipated to reduce the demand for energy. Sources of energy other than fossil fuels will need to be pursued to provide energy supplies to meet the growing demands. Kern County is the renewable energy center for California, producing more renewable energy than any other county in the state. There are more than 5,000 wind turbines in the Tehachapi-Mojave wind corridor, producing 1.3

31 Nature Communications. *Energy Efficiency to Reduce Residential Electricity and Natural Gas Use Under Climate Change*, May 15, 2017. Available online at: https://www.nature.com/articles/ncomms14916, accessed on March 30, 2026.

terawatt hours (1.3 million megawatts) each year. Wind energy is set to expand with the completion of the Wind Hub Substation and 500 KV transmission line that is being constructed by Southern California Edison. Solar investment is also on the rise within the state; as of March 2026, there are 272 solar projects in development in California that have a planned capacity of 58,663 MW. Kern County contains some of these planned solar projects, including the Boson solar project (1,173 MW) and the Buttonbush Solar Hybrid Energy Center (818 MW).[32] The County's dependence on energy and natural resource production as part of the economic structure is reflected in the fact that local oil and gas companies contributed more than $197 million in 2019 in property tax revenues in the 2018-2019 fiscal year, crucial funds used to support government services, special districts, and schools in Kern County.[33]

With the construction of higher efficiency buildings and an increase in renewable energy supplies in accordance with the California Renewables Portfolio Standard (RPS) Program, it is not anticipated that the energy requirements necessary to support population growth would be used in a wasteful manner. It is not reasonably foreseeable to determine exactly how increased energy demand will be met, but it is anticipated that public and private energy providers should continue their current long-range planning processes to ensure that there is no shortfall. A variety of energy sources are being pursued, and recent state actions (see Regulatory Setting) should help to meet the growth in energy demand while minimizing associated environmental impact and reducing dependence on fossil fuels. The 2026 RTP's emphasis on compact land use and growth patterns that facilitate transit and non-motorized transportation are anticipated to result in less energy consumption than if no plan were in place. Nonetheless, an increase in energy resources will be necessary to support the growing population.

The use of energy as a result of implementation of the RTP would significantly increase energy demand. However, with increased focus on conservation and energy-efficient appliances and equipment, it is anticipated that energy use would become more efficient. Nonetheless, energy use would increase substantially, and therefore, increased energy consumption would be potentially significant at the regional level for **Impact EN-1.** Mitigation is required. **Mitigation Measure MM EN-1** below would mitigate these potential impacts.

---

32 Cleanview, "Solar Projects in California." Available online at: https://cleanview.co/planned-solar-projects/california, accessed March 30, 2026.

33 As part of a study initiated by the Kern County Board of Supervisors following a public meeting to discuss California's new oil and gas initiatives and the economic importance of the industry. At the conclusion of the hearing attended by more than 1,000 local residents, the board of supervisors agreed to initiate a study to quantify the oil and gas industry's contribution in tax revenues to the County. KGET.com, *Study Finds Oil and Gas Industry Contributed to More Than $197 million in 2018-2019*, July 15, 2020. Available online at: https://www.kget.com/news/local-news/study-finds-oil-and-gas-industry-contributed-more-than-197-million-in-2018-2019-property-tax-revenues-in-kern-county/, accessed on March 30, 2026.

Transit Priority Areas

Implementation of the 2026 RTP would result in changes to land use patterns as it focuses on urban infill growth and walkable, mixed-use communities in existing and planned transit areas. In addition to a reduction in VMT, more mixed-use, walkable, and urban infill development would accommodate a higher proportion of growth in more energy-efficient housing types like townhomes, apartments, and smaller single-family homes, as well as more compact commercial building types. Forecasted urban development and growth that would be accommodated by the transportation investments and land use strategies in the 2026 RTP would result in more overall use of energy resources in 2049 than in 2024, but less than would occur without the Plan. Nonetheless, there is a potential that the transportation projects or land use strategies in urban areas could result in a significant impact on energy resources. As such, mitigation is required. **Mitigation Measure MM EN-1** below would mitigate these potential impacts.

Level of Significance Before Mitigation

The 2026 RTP would result in a more efficient land use pattern and would reduce per capita VMT and household energy use. Nonetheless, an increase in energy use is likely to occur, and therefore, this impact would be potentially significant at the regional and TPA level for **Impact EN-1.**

Mitigation Measure

MM EN-1: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to implement energy saving policies and projects that 1) reduce wasteful, inefficient and unnecessary consumption of energy during construction, operation, and maintenance; 2) consider siting, orientation, and design to minimize energy consumption, including transportation energy; 3) consider options for reducing peak energy demand; 4) consider recycling efforts to reduce energy demand; and 5) incorporate renewable and alternative energy to the maximum extent feasible.

Level of Significance After Mitigation

Mitigation Measure MM EN-1 would reduce the consumption of energy resources resulting from implementation of the 2026 RTP. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measure above, impacts could remain significant and unavoidable.

Impact EN-2 **Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.**

Regional and Transit Priority Area Impacts

The population growth and transportation improvements included in the RTP would result in an overall increase in electricity and natural gas demand due to the increased population (see **Impact EN-1** above). As a result, it is expected that new facilities would be required to produce and deliver energy to the Kern region.

These effects conflict with the federal, state, and local legislation and plans aimed at reducing carbon emissions and reliance on fossil fuels. On a federal level, PURPA was passed in the late 1970s to promote conservation of electric energy, while California State AB 2076 provides strategies to reduce petroleum dependence. State AB 1007 is a plan that promotes alternative fuels, and solar roofs for both residential (up to three stories) and commercial development are required as of 2020 and 2023, respectively. State CEQA Guidelines Appendix F outlines measures for energy conservation when planning and developing projects. Locally, Kern County's General Plan has a provision to encourage development of alternative energy sources by tailoring its Zoning and Subdivision Ordinances and building standards to reflect Alternative Energy Guidelines published by the California State Energy Commission. Consistency with energy efficiency plans is addressed in **Section 4.8, Greenhouse Gas Emissions**.

As discussed above, Kern County is the top oil and natural gas producer in California. Expansion of existing facilities and construction of new facilities to generate electricity may be required. In addition, construction of new transmission lines and substations may be necessary. The RPS Program recommends that utility-scale renewable energy represent 33 percent of the state's electricity mix by 2020, 50 percent by December 31, 2026, and 60 percent by December 31, 2030. Therefore, new generation facilities would include renewable and nonrenewable electricity production, and depending on the type of facility, size, and location, would result in different impacts. Construction of the facilities would have a variety of short-term impacts ranging from aesthetics, air quality, biological resources, GHG emissions, hazards and hazardous materials, hydrology and water quality, noise, and transportation. Operation of the facilities may also result in transportation, noise, and air quality impacts. The additional demand for energy may also require new supply and construction of conveyance and distribution infrastructure. The potential short-term impacts from construction of conveyance and distribution facilities for natural gas would be similar to construction of the electricity generation and transmission facilities described above. In addition, the operation of the facilities would have similar impacts described above.

Therefore, implementation of the RTP would result in potentially significant impacts related to construction of new facilities, transmission, and distribution of energy for **Impact EN-2**. As such, mitigation is required. **Mitigation Measure MM EN-2 – MM EN-4** below would mitigate these impacts.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

MM EN-2: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to streamline permitting and provide public information to facilitate accelerated construction of geothermal, solar and wind power generation facilities and transmission line improvements.

MM EN-3: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage utilities to increase capacity of existing transmission lines to meet forecast demand that supports sustainable growth, where feasible and appropriate in coordination with local planning agencies.

MM EN-4: Kern COG shall continue to consider energy uncertainty impacts prior to the development of the next RTP. Topics that shall be considered include:

- How the price and availability of transportation fuels affects revenues and demand;
- How increases in fuel efficiency could affect revenues and emissions;
- How the cost of commuting and personal travel affects mode choice and growth patterns;
- How the cost of goods movement affects international trade and employment; or
- How the escalation of fuel prices affects the cost of infrastructure construction, maintenance and operation.

Level of Significance After Mitigation

Mitigation Measures MM EN-2 through **MM EN-4** would reduce potential impacts related to the need for expanded or new facilities. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts could remain significant and unavoidable.

4.6.4 CUMULATIVE IMPACTS

The increase in energy demand that is anticipated to occur as the population increases in the Kern County area would contribute cumulatively to the worldwide increase in energy consumption. The world population is anticipated to continue to grow throughout the implementation period of the 2026 RTP. The areas of primary growth include most of Africa, excluding Southern Africa, and Asian countries. In general, the least developed countries will experience the fastest-growing population.[34] Many developing countries are adopting Western lifestyles, which include personal automobiles, the use of energy in the home, and the production of goods. Therefore, demand for petroleum has increased worldwide. Petroleum is a finite resource that requires extraction, refinement, conveyance, and distribution. The use of petroleum as fuel globally would result in significant impacts from extraction as well as from construction and operation of energy facilities. Although Kern County, in accordance with state law, will require the implementation of a variety of energy efficiency measures to decrease energy consumption as a means to reduce GHG emissions, implementation of the RTP would result in an increase in energy consumption that is considered significant, and that would add to cumulatively significant increases in energy consumption in California, the U.S., and worldwide**.**

34 United Nations. 2004. *Economic and Social Affairs: World Population to 2300.*

4.7 GEOLOGY & SOILS

This section of the PEIR describes the geological characteristics of the Kern COG region, identifies the regulatory framework with respect to laws and regulations that govern geology and soils, and analyzes the significance of the potential impacts that could result from development of the 2026 RTP. In addition, this PEIR provides regional-scale mitigation measures as well as a framework of mitigation measures for subsequent, site-specific environmental review documents.

4.7.1 ENVIRONMENTAL SETTING

4.7.1.1 Definitions

Alluvium: An unconsolidated accumulation of stream-deposited sediments, including sands, silts, clays, or gravels.

Extrusive Igneous Rocks: Rocks that crystallize from molten magma on Earth's surface.

Fault: A fracture or fracture zone in rock along which movement has occurred.

Formation: A laterally continuous rock unit with a distinctive set of characteristics that makes it possible to recognize and map from one outcrop or well to another. The basic rock unit of stratigraphy.

Holocene: An interval of time relating to, or denoting the present epoch, which is the second epoch in the Quaternary period, from approximately 11,000 years ago to the present time.

Liquefaction: The process by which water-saturated sandy soil materials lose strength and become susceptible to failure during strong ground shaking in an earthquake. The shaking causes the pore-water pressure in the soil to increase, thus transforming the soil from a stable solid to a more liquid form.

Oligocene: An interval of time relating to, or denoting the third epoch of the Tertiary period, between the Eocene and Miocene epochs, from approximately 34 to 23 million years ago.

Outcrop: A rock formation that is visible on Earth's surface.

Paleozoic: An interval of time relating to or denoting the era between the Precambrian eon and the Mesozoic era.

Pleistocene: An interval of time relating to, or denoting the first epoch of the Quaternary period, between the Pliocene and Holocene epochs, from approximately 2.6 million years ago to 11,000 years ago.

Pliocene: An interval of time relating to, or denoting the last epoch of the Tertiary period, between the Miocene and Pleistocene epochs, from approximately 5.5 to 2.6 million years ago.

Plutonic Igneous Rocks: Igneous rocks that have crystallized beneath the Earth's surface.

Pore water pressure: Refers to the pressure of groundwater held within a soil or rock, in gaps between particles (pores).

Quaternary: The most recent period in geological time; includes the Pleistocene and Holocene Epochs.

Unique geologic feature: An important and irreplaceable geological formation. Such features may have scientific and/or cultural values.

Unique paleontological resource: A fossil that meets one or more of the following criteria:

- It provides information on the evolutionary relationships and developmental trends among organisms, living or extinct.
- It provides data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein.
- It provides data regarding the development of biological communities or the interaction between plant and animal communities.
- It demonstrates unusual or spectacular circumstances in the history of life.
- The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.

4.7.1.2 Existing Conditions

Kern County Geological Provinces Kern County encompasses 8,171 square miles and is defined by distinct geological features, including the nearly level alluvial plains of the San Joaquin Valley, the arid valleys of the Mojave Desert, and the mountains of the southern Sierra Nevada and Transverse Ranges. Elevations in the County range widely from 206 feet above sea level near the City of Delano to the highest point at 8,755 feet at the summit of Sawmill Mountain on the south line of the County. The San Joaquin Valley lies mostly below 1,000 feet, and the Mojave Desert area lies primarily between 2,000 and 3,000 feet. Kern County covers portions of five of the 11 geologic provinces of California, as shown in **Figure 4.7-1, Kern County Geological Provinces**. These provinces include the southeastern Coast Ranges, the Great Valley of

California, the southern Sierra Nevada, the southwestern tip of the Basin Ranges, and the western end of the Mojave Desert. Each province differs from the others in the nature of its geologic history.

Coast Ranges

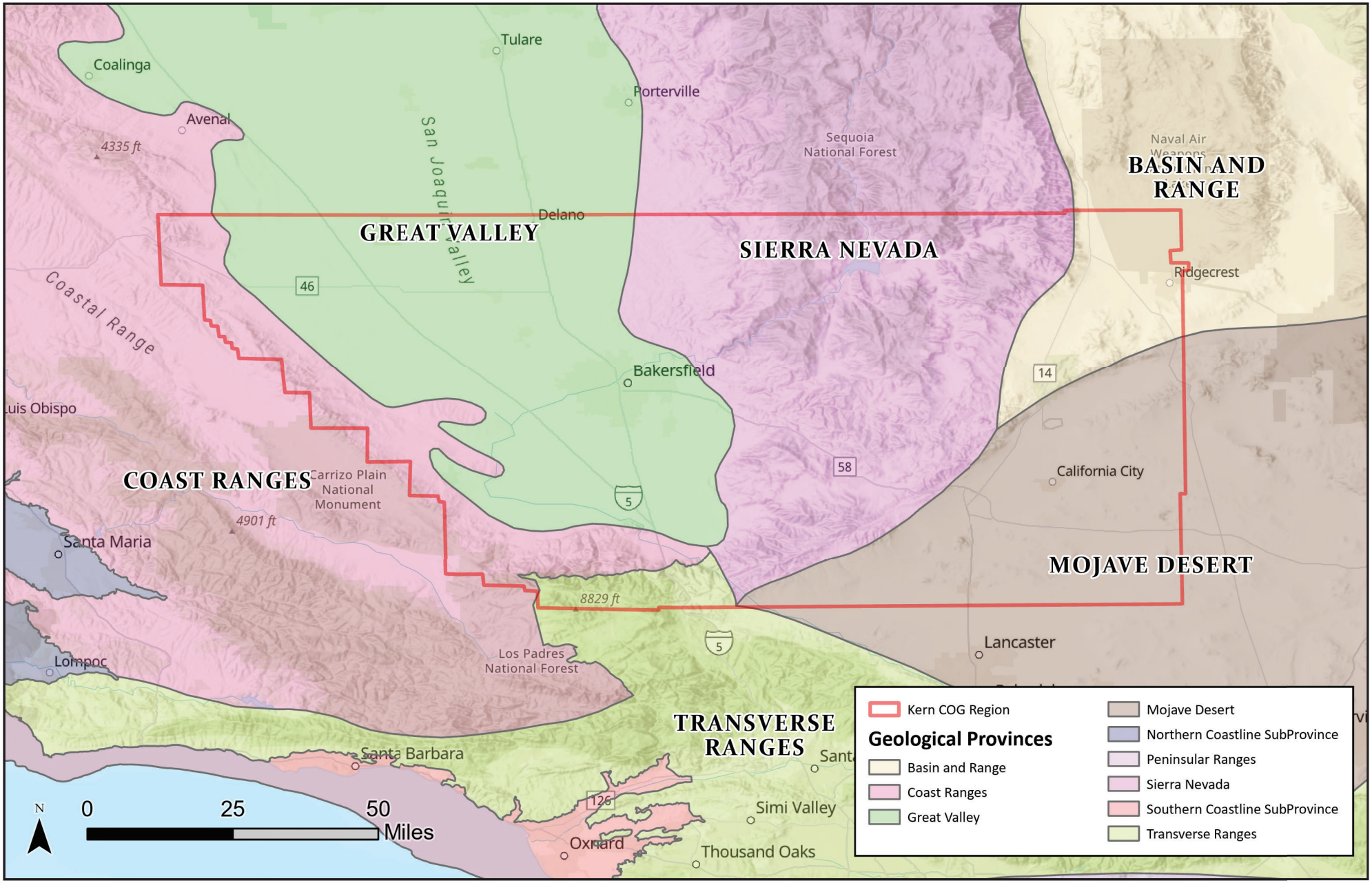
The segment of the Coast Ranges province that lies within Kern County is characterized by north-northwest trending mountain ranges of moderate relief. These ranges are underlain primarily by folded marine sedimentary rocks and are cut by the San Andreas Fault. Within the Coast Ranges province, sedimentary rocks trend mostly north-northwest and are moderately to mildly deformed along folds parallel to the mountain ranges.

Sierra Nevada

The southern Sierra Nevada province, comprising the southern Sierra Nevada and Tehachapi Mountains, contains most of the high mountains in Kern County. Granitic rocks underlie most of the southern part of the province and are part of the Sierra Nevada batholith. Basin Ranges Only the small southwestern tip of the Basin Ranges province, which includes several hundred thousand square miles in eastern California, southeastern Oregon, Nevada, and western Utah, lies in Kern County. This portion of the Basin Ranges consists of the El Paso Mountains, which form the southern boundary of the province. The El Paso Mountains contain Mesozoic granitic rocks (between 65 and 240 million years old), as well as the only Paleozoic rocks in the County (240-590 million years) that have yielded well-preserved fossils. Great Valley. The southern part of the Great Valley province is a nearly flat, north-trending trough bounded by the Coast Ranges, San Emigdio Mountains, and Sierra Nevada. Sedimentary rocks, largely of marine origin, underlie a relatively thin cover of alluvium.

Mojave Desert

The Mojave Desert geomorphic province occupies approximately 25,000 square miles. It is a broad interior region of isolated mountain ranges separated by expanses of desert. There are two important fault trends that control topography: a prominent northwest-southeast trend and a secondary east-west trend. The Mojave province is wedged in a sharp angle between the Garlock Fault to the north (southern boundary of the Sierra Nevada) and the San Andreas Fault to the west (where it bends east from its northwest trend). The Nevada state line defines its eastern boundary, and the San Bernardino/Riverside County line defines its southern boundary. Portions of Los Angeles and San Bernardino Counties lie within this province.



SOURCE: CGS, 2026; Esri, 2026

FIGURE **4.7-1**

IMPACT SCIENCES

Kern County Geological Provinces

1170.004•04/26

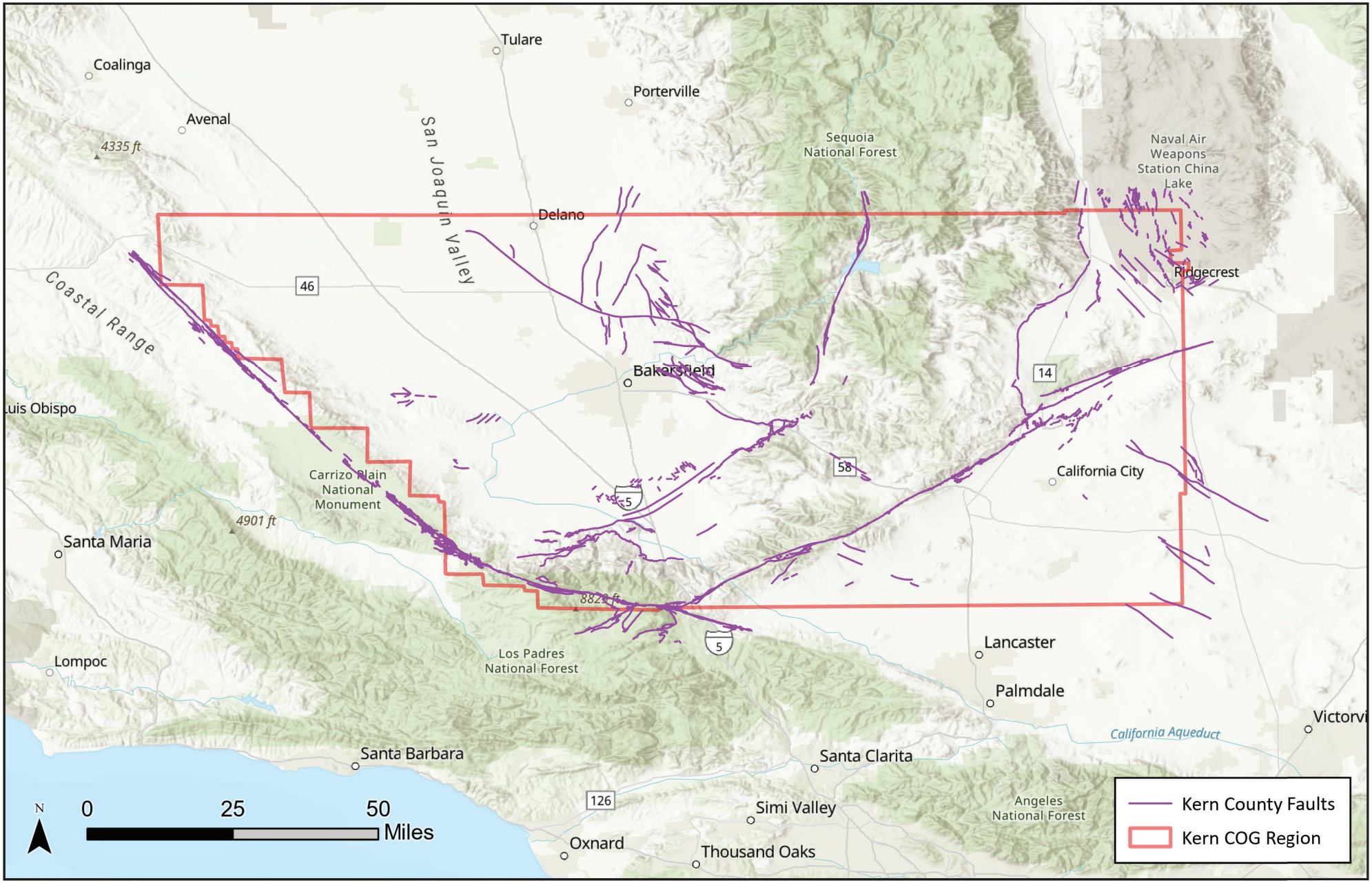
Faults

Three significant faults, the San Andreas, the Garlock, and the Sierra Nevada, transect Kern County as shown in **Figure 4.7-2, Significant Faults Located in Kern County**. The San Andreas Fault is at least 600 miles long and runs along the western edge of the County; it is considered the boundary between the North American Plate and the Pacific Plate. Although the geologic history of displacements (movement) along the San Andreas Fault is a difficult study area for scientists, it is clear that the San Andreas system holds the greatest energy potential in terms of the Richter scale, as shown in **Table 4.7-1, Major Potentially Active Faults in Kern County**.

Table 4.7-1
Major Potentially Active Faults in Kern County

Fault	Type/Dip Direction	Recent Faulting/Recurrence	Slip Rate (mm/year)	Maximum Moment Magnitude (Richter Scale)
Airport Lake Fault Zone	Normal, some right lateral strike slip	Historic (1995)	~1	5.5 to 6.5
Big Pine	Left lateral strike slip/South	Late/ pre Quaternary/ Unknown	1 to 4 (?)	Uncertain
Garlock	Left lateral strike slip	Historic, Holocene/200-3,000 years	6	6.5 to 7.1
Little Lake Fault Zone	Right lateral	Holocene/Unknown	~1	5.5 to 7.0
Lockhart	Right lateral strike slip	Late Quaternary (Kern County segment)/ 3,000-5,000 years (?)	.8	6.5 to 7.4
Pileto Thrust	Thrust/South	Holocene/Uncertain	1.4	6.3 to 7.3
San Andreas	Right lateral strike slip	Historic (1857)/Varies: 20-300 years	20 to 35	6.8 to 8.0
South Sierra Nevada	Normal	Holocene/Unknown	>1	6.0 to 7.1
Wheeler Ridge	Thrust/South	Historic (2005)/Unknown	unknown	6.0 to 7.1
White Wolf	Left lateral reverse/southeast	Historic/Unknown	2	7.2

Source:
Kern County Multi-Jurisdictional Hazard Mitigation Plan Comprehensive Update 2020.



SOURCE: CGS, 2026; Esri, 2026

FIGURE **4.7-2**

IMPACT SCIENCES

Significant Faults Located in Kern County

1170.004•04/26

The Garlock fault is 150 miles long and extends northeastward through the central part of the Tehachapi Mountains, extending along the southeast flank of the Tehachapi, Sierra Nevada, and El Paso mountains. The south end of the Garlock fault is terminated by the San Andreas Fault near Frazier Park. The fault is assumed to be active and capable of a very strong event (up to magnitude 8.0), although the last great earthquake on the Garlock Fault is not known, nor is the fault's occurrence interval known.

The Sierra Nevada fault system extends more than 300 miles along the entire eastern front of the Sierra Nevada Range. This fault is exposed near the mouth of Jawbone Canyon, where it terminates against the Garlock fault. Northward from this termination point, it follows a poorly exposed, irregular course.

Other faults of regional significance are located in the Kern Canyon-Breckenridge-White Wolf system, which cuts southwesterly through the central part of the Sierra Nevada. The White Wolf Fault has been studied intensively by seismologists and geologists since the Arvin-Tehachapi earthquake occurred along it in 1952. The Kern River Fault, a west-dipping fault exposed at the mouth of the Kern River, is one of the few faults exposed along the western front of the Sierra Nevada. **Table 4.7-1** provides the maximum Richter magnitude of these and other regional faults.

Other faults of minor significance located in Kern County include Lockhart, Little Lake, Wheeler Ridge, and the Airport Lake Fault zones. However, based on the identified location of faults and earthquake epicenters, the risk of surface fault rupture in the RTP plan area is minimal, as there are relatively few active faults in Kern County. Further, a majority of these faults are located in predominantly agricultural and open space areas where no development is planned.

The 2019 Ridgecrest earthquakes were a series of earthquakes that occurred on July 4 and 5, north and northeast of the town of Ridgecrest, California, located in Kern County, west of Searles Valley. They included three initial main shocks of magnitudes 6.4, 5.4, and 7.1 and many perceptible aftershocks, mainly within the area of the Naval Air Weapons Station China Lake. The earthquakes resulted in one death and 25 injuries, and more than a billion dollars in damages. The earthquakes were felt throughout most of southern California, Arizona, and Nevada, and even reverberated north to San Francisco. Approximately 30 million people felt the mainshock.[1]

Ground Shaking

Kern County is located in one of the more seismically active areas of California and is subject to moderate to severe ground shaking. Ground shaking may affect areas hundreds of miles distant from the

1 USGS. *2019 Ridgecrest, California Earthquake Sequence.* 2021. Available online at: https://earthquake.usgs.gov/storymap/index-ridgecrest.html, accessed on March 30, 2026.

earthquake's epicenter. Historic earthquakes have caused strong ground shaking and damage in many areas of Kern County. The composition of underlying soils in areas located relatively distant from faults can intensify ground shaking. Areas that are underlain by bedrock tend to experience less ground shaking than those underlain by unconsolidated sediments such as artificial fill.

Ground shaking is commonly described in terms of peak ground acceleration as a fraction of the acceleration of gravity (g), or by using the Modified Mercalli (MM) intensity scale, a common metric for characterizing intensity. The MM Intensity Scale is a more descriptive method involving 12 levels of intensity denoted by Roman numerals. As presented in **Table 4.7-2, Modified Mercalli Intensity Scale**, MM intensities range from level I (shaking that is not felt) to level XII (total damage). MM intensities ranging from IV to X could cause moderate to significant structural damage. The degree of structural damage, however, will not be uniform. Not all buildings perform identically in an earthquake. The age, material, type, method of construction, size, and shape of a building all affect its performance.

Table 4.7-2
Modified Mercalli Intensity Scale

Intensity	Description
I.	Not felt except by a very few under especially favorable conditions
II.	Felt only by a few persons at rest, especially on upper floor of buildings
III.	Felt quite noticeable by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck
IV.	Felt indoors by many, outdoors by a few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably
V.	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight
VI.	People move unsteadily, many objects fall from shelves. A few instances of fallen plaster, broken windows, and damaged chimneys within the community.
VII.	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken
VIII.	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX.	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X.	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.
XI.	Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.
XII.	Damage total. Lines of sight and level are distorted. Objects thrown into the air.

Source: US Geology Survey, https://www.usgs.gov/media/images/modified-mercalli-intensity-mmi-scale-assigns-intensities, 2026

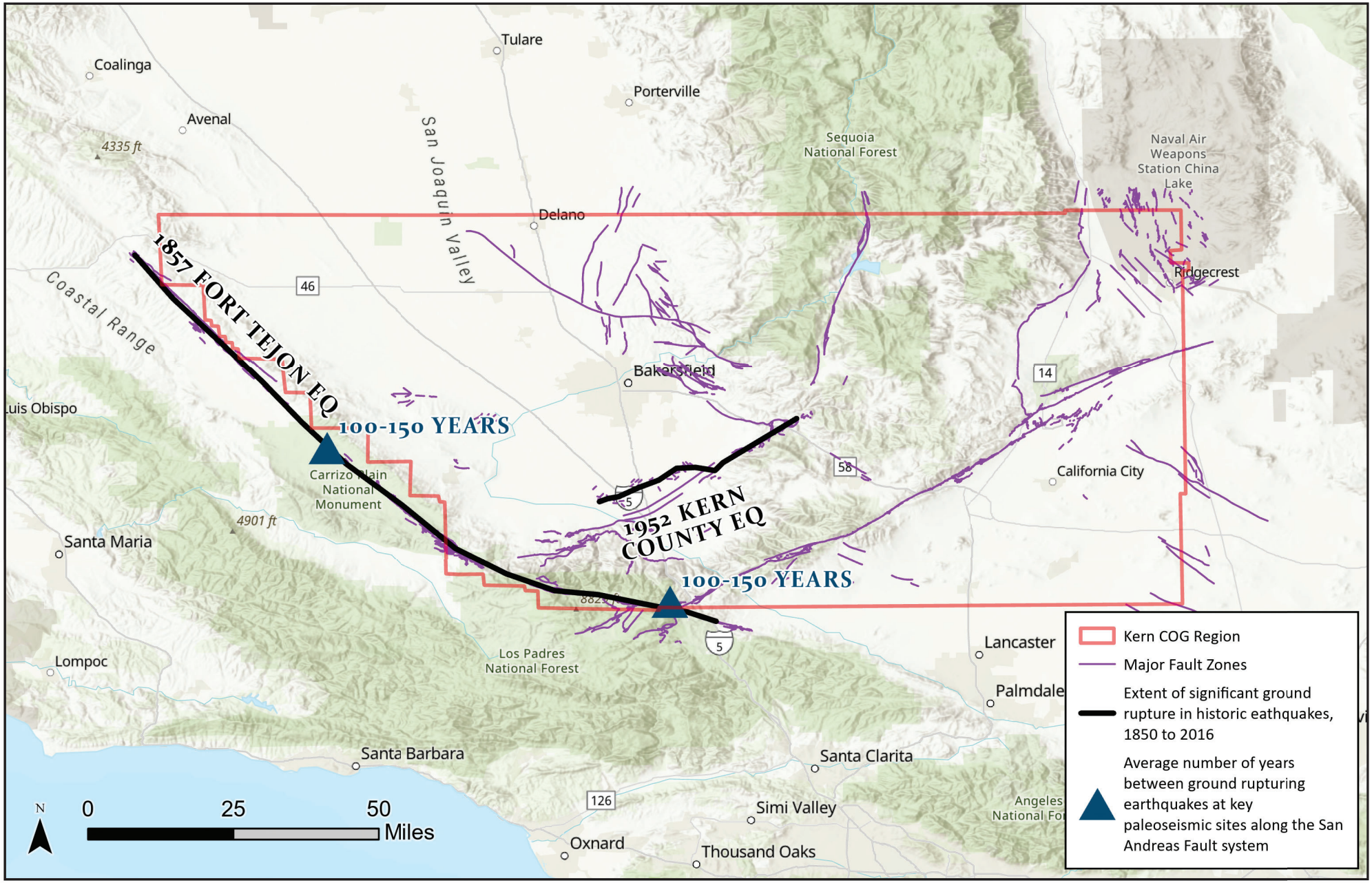
Earthquakes on the various and potentially active fault systems are expected to produce a wide range of ground shaking intensities. The estimated maximum moment magnitudes represent characteristic earthquakes on particular faults.[2] While the magnitude is a measure of the energy released in an earthquake, intensity is a measure of the ground shaking effects at a particular location. Shaking intensity can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and characteristics of geologic media. Generally, intensities are highest at the fault and decrease with distance from the fault. However, at any given location, the amount of the resulting shaking motion caused by the sudden movement depends, to a large extent, on local ground conditions (including the degree of water saturation) and may be as severe as 10 miles from the fault or immediately adjacent to it.

Figure 4.7-3, Kern County Historic Earthquake Activity, illustrates areas in the County that have experienced earthquakes with a magnitude of 5.5 or more on the Richter scale. When using the Richter scale, the magnitude of an earthquake is determined from the logarithm of the amplitude of waves recorded by seismographs. Adjustments are included for the variation in the distance between the various seismographs and the epicenter of the earthquakes. On the Richter scale, magnitude is expressed in whole numbers and decimal fractions. For example, a magnitude 5.3 might be computed for a moderate earthquake, and a strong earthquake might be rated as magnitude 6.3. Because of the logarithmic basis of the scale, each whole number increase in magnitude represents a tenfold increase in measured amplitude; as an estimate of energy, each whole number step in the magnitude scale corresponds to the release of about 31 times more energy than the amount associated with the preceding whole number value. It should be noted that the Richter scale is not used to express damage. An earthquake in a densely populated area that results in many deaths and considerable damage may have the same magnitude as a shock in a remote area that does nothing more than frighten the wildlife. Large-magnitude earthquakes that occur beneath the oceans may not even be felt by humans.

Identified faults must be considered in planning and land use activities, and faults identified as active should be considered when deciding on a project's location. No structure, including roadway bridges, should be built astride an active fault. Similarly, utilities that cross such faults must be designed to remain functional even after fault movement.

---

2 Moment magnitude is related to the physical size of a fault rupture and movement across a fault. Richter magnitude scale reflects the maximum amplitude of a particular type of seismic wave. Moment magnitude provides a physically meaningful measure of the size of a faulting event [California Geological Survey (CGS), 1997]. See **Table 4.7-1** for the moment magnitudes associated with particular faults.



SOURCE: CGS, 2026; Esri, 2026

FIGURE **4.7-3**

IMPACT SCIENCES

Kern County Historic Earthquake Activity

1170.004•04/26

Ground Failure

Kern County has diverse microenvironments and activities that have the potential for ground failure. Factors that cause or contribute to ground failure can include, but are not limited to, soil type and condition, bedrock condition, presence of moisture, presence or lack of vegetation, ground slope, seismic activities, and human activities. Specific types of ground failure are presented below.

Surface Fault Rupture

The surface expression of earthquake fault rupture typically occurs in the immediate vicinity of the originating fault. The magnitude and nature of the rupture may vary across different faults, or even along different segments of the same fault.[3] Rupture of the surface during earthquake events is generally limited to the narrow strip of land immediately adjacent to the fault on which the event is occurring. Surface ruptures associated with the 1992 Landers earthquake in San Bernardino County extended for a length of 50 miles, with displacements varying from 1 inch to 20 feet.

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the risk to human habitation of seismically induced ground-surface ruptures. This state law was a direct result of the 1971 San Fernando Earthquake, which was associated with extensive surface fault ruptures that damaged numerous homes, commercial buildings, and other structures. Surface rupture is the most easily avoided seismic hazard, provided regulatory stipulations embedded in this law are met. The law requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones) around the surface traces of active faults, and to issue appropriate maps.[4]

Detailed maps are distributed to all affected cities, counties, and state agencies for their use in planning new or renewed construction. Local agencies must regulate most development projects within the zones, including all land divisions and most structures intended for human habitation. Fault surface rupture almost always follows preexisting faults, which are zones of weakness. Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. Sudden displacements are more damaging to structures because they are accompanied by ground shaking. Fault creep is the slow rupture of the Earth's crust. Not all earthquakes result in surface rupture.

---

3 California Geological Survey (CGS), *Guidelines for evaluating the hazard of surface fault rupture, Note 49*, 2002. Available online at: https://www.conservation.ca.gov/cgs/Documents/Publications/CGS-Notes/CGS-Note-49.pdf, accessed March 28, 2026.

4 "Earthquake Fault Zones" were called "Special Studies Zones" prior to January 1, 1994.

Liquefaction

Liquefaction is the process by which water-saturated sandy soil materials lose strength and become susceptible to failure during strong ground shaking in an earthquake. The shaking causes the pore-water pressure in the soil to increase, thus transforming the soil from a stable solid to a more liquid form. Liquefaction has been responsible for ground failures during almost all of California's large earthquakes. The depth to groundwater can control the potential for liquefaction; the shallower the groundwater, the higher the potential for liquefaction. Earthquake-induced liquefaction most often occurs in low-lying areas with soils or sediments composed of unconsolidated, saturated, clay-free sands and silts, but can also occur in dry, granular soils or saturated soils with some clay content.

Four kinds of ground failure commonly result from liquefaction: lateral spread, flow failure, ground oscillation, and loss of bearing strength. A lateral spread is a horizontal displacement of surficial blocks of sediments resulting from liquefaction in a subsurface layer. Lateral spread occurs on slopes ranging between 0.3 and 3 percent and commonly displaces the surface by several meters to tens of meters. Flow failures occur on slopes greater than 3 degrees and are primarily liquefied soil or blocks of intact material riding on a liquefied subsurface zone. Ground oscillation occurs on gentle slopes when liquefaction occurs at depth, and no lateral displacement takes place. Soil units that are not liquefied may pull apart from each other and oscillate on the liquefied zone. Ground fissures can accompany ground oscillation and sand boils and damage underground structures and utilities. The loss of bearing pressure can occur beneath a structure when the underlying soil loses strength and liquefies. When this occurs, the structure can settle, tip, or even become buoyant and "float" upwards.

Liquefaction potential is a function of the potential level of ground shaking at a given location and depends on the geologic material at that location. Structural failure often occurs as sediments liquefy and cannot support structures that are built on them. Alluvial valleys and coastal regions are particularly susceptible to liquefaction. Unconsolidated alluvial deposits in desert region deposits are rarely saturated because of the depth to the water table and are thus less susceptible to liquefaction than unconsolidated alluvium adjacent to stream channels.

The California Department of Conservation has not identified any liquefaction zones within the County, although various areas of the County may be subject to liquefaction during seismic events due to high ground water levels. Liquefaction is found near Rosamond in Los Angeles County, but does not traverse into Kern County. Thus, the potential for substantial seismic-related ground failure is low.

Soils

Expansive soils possess a "shrink-swell" behavior. Shrink-swell is the cyclic change in volume (expansion

and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying. Structural damage may result over a long period of time, usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils. Typically, soils that exhibit expansive characteristics comprise the upper five feet of the surface. The effects of expansive soils could damage foundations of aboveground structures, paved roads and streets, and concrete slabs. Expansion and contraction of soils, depending on the season and the amount of surface water infiltration, could exert enough pressure on structures to result in cracking, settlement, and uplift. Locations of expansive soils are site-specific and can generally be remedied through standard engineering practices.

Settlement

Loose, soft soil material comprised of sand, silt, and clay, if not properly engineered, has the potential to settle after a building is placed on the surface. Settlement of the loose soils generally occurs slowly, but over time, it can amount to more than most structures can tolerate. Building settlement could lead to structural damage, such as cracked foundations, misaligned or cracked walls, and windows. Settlement problems are site-specific and can generally be remedied through standard engineering applications

Land Subsidence

Land subsidence occurs in the San Joaquin Valley and desert regions of Kern County, including Edward Air Force Base. This type of ground failure can be aggravated by ground shaking and is often caused by the withdrawal of large volumes of water from underground reservoirs. Other causes of subsidence include sinking tectonics, oil and gas extraction, and deficient alluvial deposits. Subsidence from any cause accelerates maintenance problems on roads, canals, and underground utilities, and contributes to drainage and flood problems. Seismic activities also aggravate subsidence areas. Maintenance or raising water tables can mitigate the effects of subsidence. According to the General Plan, there are four types of subsidence occurring in Kern County:

- Tectonic subsidence, a long-term, very slow sinking of the valley, which is significant only over a geologic period.

- Subsidence caused by the extraction of oil and gas. This type of subsidence is still too small to be of serious concern. The State Division of Oil, Gas, and Geothermal Resources monitors subsidence in oil and gas fields and regulates oil and gas withdrawal and repressurizing of the fields.

- Subsidence caused by withdrawal of groundwater in quantities much larger than replacement can occur, causing a decline of the water level. This practice has lowered the ground level over a large area south of Bakersfield and the desert Antelope Valley near Edwards Air Force Base.

- Subsidence caused by hydrocompaction of moisture – deficient alluvial deposits. This is a onetime densification from collapse of the soil structure in near-surface strata where the rainfall or other moisture has not penetrated during a long period of time. Parts of the California Aqueduct were constructed through and over hydrocompactable deposit after compaction has occurred through ponding.

Landslides

Landslides include slumps, debris flows, and rockfall. Small landslides are common in the County's mountain areas as loose material moves naturally down slope, or fires have caused loss of soil-stabilizing vegetative cover. In addition, many human activities tend to make the earth's materials less stable and, thus, increase the chance of ground failure. Some of the natural non-seismic causes of ground instability are steam and lakeshore erosion, heavy rainfall, and poor-quality natural materials. Human activities contribute to soil instability through grading of steep slopes (i.e., road cuts) or overloading slopes with artificial fill, by extensive irrigation, construction of impermeable surfaces, excessive groundwater withdrawal, and removal of stabilizing vegetation. Landslides are usually confined to areas of steep slopes that have an underlying geology that is susceptible to movement and are usually triggered by an event such as an earthquake, large rainfalls, human slope modification/loading activities, gravity, or a combination thereof. Southwestern Kern County has a high susceptibility to landslides. Rockfall areas include Kern River Canyon along Highway 178 and along County roads in the vicinity of Caliente Creek. Debris flow areas along I-5 near the southern border of the County have frequently closed this major north-south transportation corridor**. Figure 4.7-4**, **Kern County Landslide Susceptibility Map**, shows where landslides are most likely to occur in the County.

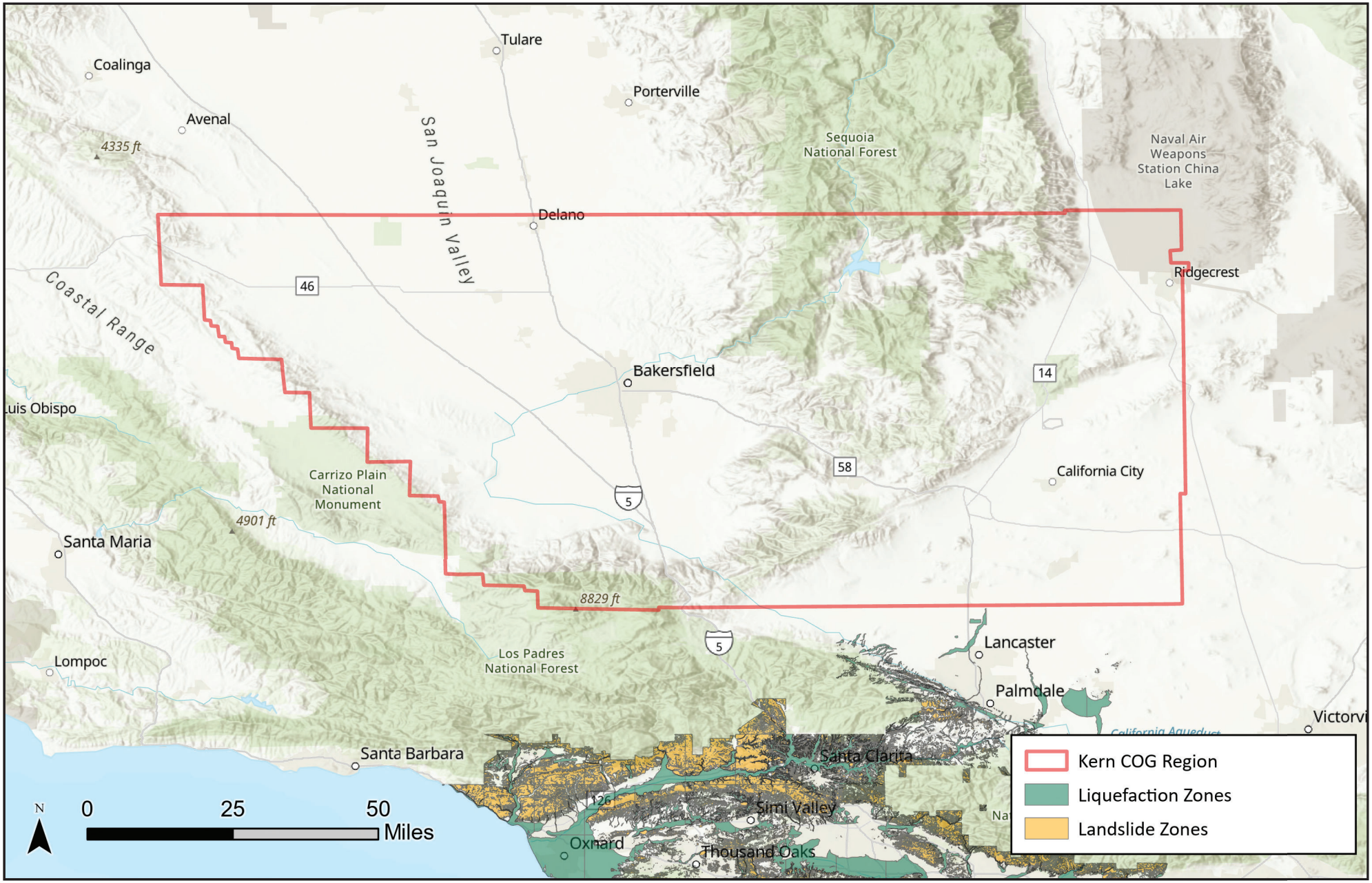
Soils and Septic Tanks or Alternative Wastewater Disposal Systems

The California State Water Resources Control Board has specific guidelines and requirements with regard to soil suitability for septic tanks and alternative waste water disposal systems.[5] Soils with poorly or excessively drained soils are generally not suitable for septic tanks or alternative waste water disposal systems.[6] According to the U.S. EPA, it is recommended that onsite wastewater disposal systems incorporate native soil knowledge into system design to prevent groundwater contamination and ensure long-term performance.

---

5 California State Water Resources Control Board. 3.2C – Construction Practices – Onsite Wastewater Treatment Systems (OWTS). Available online at: https://www.waterboards.ca.gov/water_issues/programs/nps/encyclopedia/3_2c_const_owts.html, accessed March 29, 2026.

6 Ibid.



SOURCE: CGS, 2026; Esri, 2026

FIGURE **4.7-4**

IMPACT SCIENCES

Kern County Landslide Susceptibility Map

1170.004•04/26

Most often, a percolation test is performed to assess the infiltration rate and soil texture, both of which determine the site suitability for a wastewater disposal system. As it is difficult to assess site suitability without on-site testing, suitability in the Kern COG region would be determined on a per-project basis according to all local, regional, and state requirements.[7]

Erosion

Soil erosion is a natural ongoing process that transports, erodes, and displaces soil particles through a transport mechanism such as flowing water or wind. In addition, erosion results from manmade activity when soil coverings are stripped, leaving the underlying soil exposed to the elements. Erosion is the physical detachment and movement of soil materials through natural processes or human activities. The determination of soil erosion potential is a complex process generally applied to site-specific areas using the soil erodibility K factor index. The K factor combines the detachability of soil, runoff potential of the soil, and transportability of the sediment eroded from the soil into one measure for soil erodibility. The K factor is just one element of the RUSLE (Revised Universal Soil Loss Equation), which is used by government agencies to make erosion predictions for regulatory and conservation planning uses. Determining areas of potential erosion is made more complex due to the substantial geomorphic diversity in the SCAG region. Generally, there is a high potential for erosion in mountainous areas and areas along the margins of mountainous areas, where there is a high intensity of rainfall and where the soils are considered erosive. Clay soils typically have low erodibility because the soil particles are resistant to detachment. Soils having a high silt content are the most erosive as the particles are easily detached, tend to crust, and produce high rates of runoff.[8]

Paleontological Resources

Paleontological resources are the recognizable remains, such as bones, shells, leaves, or other evidence, such as tracks, burrows, or impressions, of past life on Earth. Generally, scientifically significant paleontological resources are identified at sites or within geologic deposits containing individual fossils or assemblages of fossils that are unique or unusual, diagnostically or stratigraphically important, and add to the existing body of knowledge in specific areas, stratigraphically, taxonomically, or regionally. Particularly important are fossils found in situ (undisturbed) in primary context (e.g., fossils that have not been subjected to disturbance subsequent to their burial and fossilization). As such, they aid in stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphological

---

7 U.S. Environmental Protection Agency. Website. Available at: http://water.epa.gov/aboutow/owm/upload/2004_07_07_septics_septic_2002_osdm_all.pdf, accessed March 9, 2026.

8 Michigan State University, RUSLE Online Soil Erosion Assessment Tool. Available online at: http://www.iwr.msu.edu/rusle/kfactor.htm, accessed March 29, 2026.

evolution, paleoclimatology, the relationships between aquatic and terrestrial species, and evolution in general.

The discovery of in situ fossil-bearing deposits is rare for many species, especially vertebrates. Terrestrial vertebrate fossils are often assigned greater significance than other fossils because they are rare relative to other types of fossils. This is primarily due to the fact that the best conditions for fossil preservation include little or no disturbance after death and quick burial in oxygen-depleted, fine-grained sediments. While these conditions often exist in marine settings, they are relatively rare in terrestrial settings (e.g., as a result of pyroclastic flows and flash flood events). This has ramifications on the amount of scientific study needed to adequately characterize an individual species, and therefore, affects how relative sensitivities are assigned to formations and rock units.

Note that significance may also be stated for a particular rock unit, predicated on the research potential of fossils suspected to occur in that unit. Such significance is often stated as "sensitivity" or "potential." In most cases, decisions about how to manage paleontological resources must be based on this potential because the actual situation cannot be known until construction excavation for a project is underway. The following tripartite scale has been used by Caltrans in assessing resources in Kern County:

- **High Potential** - Rock units which, based on previous studies, contain or are likely to contain significant vertebrate, significant invertebrate, or significant plant fossils. These units include, but are not limited to, sedimentary formations that contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. These units may also include some volcanic and low-grade metamorphic rock units. Fossiliferous deposits with very limited geographic extent or an uncommon origin (e.g., tar pits and caves) are given special consideration and ranked as highly sensitive. High sensitivity includes the potential for containing: (1) abundant vertebrate fossils; (2) a few significant fossils (large or small vertebrate, invertebrate, or plant fossils) that may provide new and significant taxonomic, phylogenetic, ecologic, and/or stratigraphic data; (3) areas that may contain datable organic remains older than Recent, including Neotoma (sp.) middens; or (4) areas that may contain unique new vertebrate deposits, traces, and/or trackways. Areas with a high potential for containing significant paleontological resources require monitoring and mitigation.

- **Low Potential** - This category includes sedimentary rock units that: (1) are potentially fossiliferous, but have not yielded significant fossils in the past; (2) have not yet yielded fossils, but possess a potential for containing fossil remains; or (3) contain common and/or widespread invertebrate fossils if the taxonomy, phylogeny, and ecology of the species contained in the rock are well understood. Sedimentary rocks expected to contain vertebrate fossils are not placed in this category because

vertebrates are generally rare and found in more localized stratum. Rock units designated as low potential generally do not require monitoring and mitigation.

- **No Potential** - Rock units of intrusive igneous origin, most extrusive igneous rocks, and moderately to highly metamorphosed rocks are classified as having no potential for containing significant paleontological resources. For projects encountering only these types of rock units, paleontological resources can generally be eliminated as a concern.

Kern County is located in the Great Valley Geomorphic Province. The Great Valley Geomorphic Province is an alluvial plain about 50 miles wide and 450 miles long, bordered on the east by the Sierra Nevada and on the west by the Coast Ranges geomorphic provinces of central California. Beneath the geomorphic Great Valley is an elongate northwest-trending asymmetric structural trough that has received a thick sequence of sediments of Jurassic to Recent age. These sediments rest on the crystalline basement rocks of the westward tilted Sierran block. The southern part of the Great Valley is the San Joaquin Valley, beneath which is the San Joaquin sedimentary sub-basin. Over 9,000 meters of marine and non-marine sediments of upper Mesozoic and Cenozoic age fill the San Joaquin basin.[9] A westward plunging structural bowing on the east side of the San Joaquin Valley, known as the Bakersfield Arch, divides the San Joaquin basin into the Maricopa-Tejon subbasin to the south from the remainder of the basin to the north.[10]

4.7.2 REGULATORY FRAMEWORK

4.7.2.1 Federal

Uniform Building Code

The Uniform Building Code (UBC) is published by the International Conference of Building Officials and forms the basis for California's building code, as well as approximately half of the state building codes in the United States. It has been adopted by the California Legislature to address the specific building conditions and structural requirements for California, as well as provide guidance on foundation design and structural engineering for different soil types. The UBC defines and ranks the regions of the United States according to their seismic hazard potential. There are four types of regions defined by Seismic Zones 1 through 4, with Zone 1 having the least seismic potential and Zone 4 having the highest.

---

9 Barstow J. A., *Geologic maps of the Knob Hill, Pine Mountain, Oil Center and Bena quadrangles, California*. USGS Open File Report 86-188. 1986.

10 Sheehan, J. R., *Tectonic Evolution of the Bakersfield Arch, Kern County, California, in P. Bell, ed., Structure and Stratigraphy of the East Side San Joaquin Valley, Part II: Structure and Stratigraphy*, Pacific Section American Association of Petroleum Geologists Guidebook No. 56, pages 10-17. 1986.

Paleontological Resources Preservation Act

The primary legislation pertaining to fossils from the National Park Service and other federal lands is the Paleontological Resources Preservation Act of 2009 (PRPA) (16 U.S.C. § 470aaa 1-11), which was enacted on March 30, 2009, within the Omnibus Public Land Management Act of 2009. PRPA directs the Department of Agriculture (U.S. Forest Service) and the Department of the Interior (National Park Service, Bureau of Land Management, Bureau of Reclamation, and Fish and Wildlife Service) to manage and protect paleontological resources on Federal land using scientific principles and expertise. The Secretary shall develop appropriate plans for inventory, monitoring, and the scientific and educational use of paleontological resources, in accordance with applicable agency laws, regulations, and policies. These plans shall emphasize interagency coordination and collaborative efforts where possible with non-Federal partners, the scientific community, and the general public.

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act (FLPMA) is a United States federal law that governs the way in which the public lands administered by the Bureau of Land Management are managed. The law was enacted in 1976, and Congress phased out homesteading in the United States by repealing the pre-existing Homestead Acts.

Antiquities Act of 1906

In 1906, the Antiquities Act (54 U.S.C. § 320301–320303) was enacted to help protect any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States. The act further authorizes the President of the United States to declare national monuments by public proclamation of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal lands. The Antiquities Act was used to proclaim several national monuments based upon significant paleontological resources, including Petrified Forest National Park, Dinosaur National Monument, Fossil Cycad National Monument (now abolished), and, most recently, Waco Mammoth National Monument.

United States Department of Agriculture, Natural Resources Conservation Service

The Natural Resources Conservation Service (NRCS) maps soils and farmland uses to provide comprehensive information necessary for understanding, managing, conserving, and sustaining the nation's limited soil resources. In addition to many other natural resource conservation programs, the NRCS manages the Farmland Protection Program, which provides funds to help purchase development rights to keep productive farmland in agricultural uses. Working through existing programs, United States

Department of Agriculture (USDA) joins with state, tribal, and local governments to acquire conservation easements or other interests from landowners.

Earthquake Hazards Reduction Act of 1977

The Earthquake Hazards Reduction Act (EHRA) of 1977 (42 USC. § 7701 et. seq.) established the National Earthquake Hazards Reduction Program as a long-term earthquake risk reduction program for the United States which focuses on: developing effective measures to reduce earthquake hazards; promoting the adoption of earthquake hazard reduction activities by federal, state, and local governments, building standards and model building code organizations, engineers, architects, building owners, etc.; improving the understanding of earthquakes and their effects on people and infrastructure through interdisciplinary research involving engineering, natural sciences, and social, economic, and decision sciences; and developing and maintaining the Advanced National Seismic System, the George E. Brown Jr. Network for Earthquake Engineering Simulation, and the Global Seismic Network.

Disaster Mitigation Act (2000)

The federal Disaster Mitigation Act (DMA; Public Law 106-390) provides the legal basis for FEMA mitigation planning requirements for state, local, and Indian Tribal governments as a condition of mitigation grant assistance. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act by repealing the previous mitigation planning provisions and replacing them with a new set of requirements that emphasize the need for state, local, and Indian Tribal entities to closely coordinate mitigation planning and implementation efforts. The requirement for a state mitigation plan is continued as a condition of disaster assistance, adding incentives for increased coordination and integration of mitigation activities at the state level through the establishment of requirements for two different levels of state plans. DMA 2000 also established a new requirement for local mitigation plans and authorized up to 7 percent of Hazard Mitigation Grand Program funds available to a state for development of state, local, and Indian Tribal mitigation plans.

Clean Water Act Section 402

Section 402 of the Clean Water Act (33 U.S. Code Section 1251 et seq.) establishes a framework for regulating municipal and industrial stormwater discharges under the National Pollutant Discharge Elimination System (NPDES) program. The NPDES program controls water pollution by regulating point sources that discharge pollutants, including rock, sand, dirt, and agricultural, industrial, and municipal waste, into waters of the United States. The Environmental Protection Agency has delegated to the State Water Resources Control Board the authority for the NPDES program in California, which is implemented by the State's nine Regional Water Quality Control Boards. Under the NPDES Phase II Rule, construction activity

disturbing 1 or more acres must obtain coverage under the State's General Permit for Discharges of Storm Water Associated with Construction Activity (General Construction Permit). As described further in **Section 3.10, Hydrology and Water Quality,** the Construction General Permit requires that applicants develop and implement a Stormwater Pollution Prevention Plan (SWPPP), which specifies best management practices (BMPs) that reduce pollution in stormwater discharges to the Best Available Technology Economically Achievable/Best Conventional Pollutant Control Technology standards and perform inspections and maintenance of all BMPs.

U.S. Geological Survey Landslide Hazard Program

The USGS Landslide Hazard Program provides information on landslide hazards including information on current landslides, landslide reporting, real time monitoring of landslide areas, mapping of landslides through the National Landslide Hazards Map, local landslide information, landslide education, and research.

4.7.2.2 State

California Building Code

Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The California Building Code is another name for the body of regulations contained in Title 24, Part 2, of the California Code of Regulations, which is a portion of the California Building Standards Code.[11] Title 24 is assigned to the California Building Standards Commission which, by law, is responsible for coordinating all building standards. Published by the International Conference of Building Officials, the UBC is a widely adopted model building code in the United States. The California Building Code incorporates by reference the UBC with necessary California amendments. About one-third of the text within the California Building Code has been tailored for California earthquake conditions. Although widely accepted and implemented throughout the United States, local, city, and county jurisdictions can adopt the UBC either in whole or in part.

Alquist-Priolo Earthquake Fault Zoning Act

California's Alquist-Priolo Act, originally enacted in 1972 as the Alquist-Priolo Special Studies Zones Act and renamed in 1994, is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human

11 California Department of General Services, Building Standards *Commission. California Building Standards Code.* Available online at: https://www.dgs.ca.gov/BSC/Codes, accessed April 3, 2026.

occupancy across the traces of active faults and strictly regulates construction in the corridors along active faults (Earthquake Fault Zones). It also defines criteria for identifying active faults, giving legal weight to terms such as "active," and establishes a process for reviewing building proposals in and adjacent to Earthquake Fault Zones.

Under the Alquist-Priolo Act, faults are zoned, and construction along or across them is strictly regulated if they are "sufficiently active" and "well-defined." A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined for the purposes of the Act as within the last 11,000 years). A fault is considered well defined if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface, using standard professional techniques, criteria, and judgment.[12]

Seismic Hazards Mapping Act

The program and actions mandated by the Seismic Hazards Mapping Act closely resemble those of the Alquist-Priolo Earthquake Fault Zoning Act. The Seismic Hazards Mapping Act of 1990 addresses nonsurface fault rupture earthquake hazards, including liquefaction and seismically induced landslides. The purpose of the Act is to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and other hazards caused by earthquakes.

Surface Mining Area Reclamation Act

California's State and Surface Mining and Reclamation Act (SMARA) of 1975 (Pub. Resources Code §§ 2710-2796) was enacted in response to land use conflicts between urban growth and essential mineral production. The stated purpose of SMARA is to provide a comprehensive surface mining and reclamation policy that will encourage the production and conservation of mineral resources while ensuring that adverse environmental effects of mining are prevented or minimized; that mined lands are reclaimed and residual hazards to public health and safety are eliminated; and that consideration is given to recreation, watershed, wildlife, aesthetic, and other related values. Notice requirements of permitting a use that would preclude future extraction of identified mineral resources, defined as either the potential to extract minerals in Mineral Resource Zone (MRZ)-2 lands, or land designated in a lead agency's general plan as having important mineral resources, to be protected. In addition, these noticing requirements are subject to California Environmental Quality Act (CEQA) public review requirements.

MRZ classifications are based upon known or inferred presence and significance of a given mineral resource from available geologic information. SMARA requires all cities and counties to incorporate the

12 Hart and Bryant, 1997

mapped designations that are approved by the Division of Mines and Geology.

California Department of Transportation

The California Department of Transportation (Caltrans) provides Seismic Design Criteria (SDC), which is an encyclopedia of new and currently practiced seismic design and analysis methodologies for the design of new bridges in California. The SDC adopts a performance-based approach specifying minimum levels of structural system performance, component performance, analysis, and design practices for ordinary standard bridges. The SDC has been developed with input from the Caltrans Offices of Structure Design, Earthquake Engineering and Design Support, and Materials and Foundations. Memo 20-1 outlines the bridge category and classification, seismic performance criteria, seismic design philosophy and approach, seismic demands and capacities on structural components and seismic design practices that collectively make up Caltrans' seismic design methodology.

Southern California Catastrophic Earthquake Preparedness Plan

The Southern California Catastrophic Earthquake Preparedness Plan, adopted in 2008, examines the initial impacts, inventories resources, provides for the wounded and homeless, and develops a long-term recovery process. The process of Long-Term Regional Recovery (LTRR) provides a mechanism for coordinating federal support to state, tribal, regional, and local governments, nongovernmental organizations (NGOs), and the private sector to enable recovery from long-term consequences of extraordinary disasters. The LTRR process accomplishes this by identifying and facilitating the availability and use of recovery funding sources and providing technical assistance (such as impact analysis) for recovery and recovery planning support. "Long term" refers to the need to re-establish a healthy, functioning region that will sustain itself over time. Long-term recovery is not debris removal and restoration of utilities, which are considered immediate or short-term recovery actions. The LTRR's three main focus areas are housing, infrastructure (including transportation), and economic development.

CGS Special Publication 117A

The California Geological Survey (CGS) Special Publication 117A provides statewide guidance for evaluating and mitigating seismic hazards in accordance with the Seismic Hazards Mapping Act. The guidelines require that projects located within designated seismic hazard zones conduct site-specific geotechnical investigations to identify potential hazards, such as liquefaction and earthquake-induced landslides, and incorporate appropriate mitigation measures into project design. Local agencies are responsible for reviewing these investigations and ensuring that identified hazards are reduced to an acceptable level of risk prior to project approval.

4.7.2.3 Local

General Plans and Seismic Safety Elements

Local governments may provide policies and develop ordinances to ensure acceptable protection of people and structures from risks associated with these hazards. City and county governments typically develop as part of their General Plans, safety and seismic elements that identify goals, objectives, and implementing actions to minimize the loss of life, property damage, and disruption of goods and services from man-made and natural disasters including floods, fires, non-seismic geologic hazards, and earthquakes. Ordinances may include those addressing unreinforced masonry construction, erosion or grading.

Kern County General Plan

Applicable policies from the Kern County General Plan are as follows:

- Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained ((Map Code 2.1 (Seismic Hazard), Map Code 2.2 (Landslide), Map Code 2.3 (Shallow Groundwater), Map Code 2.5 (Flood Hazard), Map Codes from 2.6 – 2.9, Map Code 2.10 (Nearby Waste Facility), and Map Code 2.11 (Burn Dump Hazard)) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.

- In order to minimize risk to Kern County residents and their property, new development will not be permitted in hazard areas in the absence of implementing ordinances and programs. These ordinances will establish conditions, criteria, and standards for the approval of development in hazard areas.

- Zoning and other land use controls will be used to regulate and, in some instances, to prohibit development in hazardous areas.

- Special requirements will be applied to new housing within recently active fault zones.

- New residential uses in fault zones should be limited to single-family housing units.

- Regardless of percentage of slope, development on hillsides will be sited in the least obtrusive fashion, thereby, minimizing the extent of topographic alteration required and reducing soil erosion while maintaining soil stability.

- Emphasize conservation and development of identified mineral deposits.

- Agriculture and other resource uses will be considered a consistent use in areas designated for Mineral and Petroleum Resource uses on the General Plan.
- Lands classified as MRZ-2, as designated by the State of California, should be protected from encroachment of incompatible land uses.
- Discourage incompatible land use adjacent to Mineral and Petroleum areas.

Bakersfield General Plan

Applicable policies from the Bakersfield General Plan are as follows:

- Encourage and support the exchange of information on mineral and energy resources between private industry, City of Bakersfield and Kern County.
- Land use decisions shall recognize the importance of identified mineral resources and need for conservation of resources identified by the State Mining and Geology Board.
- Protect significant mineral and petroleum resource areas, including potential sand and gravel extraction areas.
- Document the location, status, and long-term viability of sand and gravel quarries and petroleum drilling sites for purposes of avoiding near and long-term land use conflicts and provide a basis for compliance monitoring.
- Promote development of compatible uses adjacent to mineral extraction areas.
- Allow development of resource extraction sites subject to the conditional use permit procedure in zones where such uses are not permitted by right and where it can be shown that proposed extraction uses are compatible with surrounding uses.
- Encourage preservation of any known deposits of gemstones and fossils.
- Implement, as appropriate, the California Environmental Quality Act to minimize land use conflicts and reduce environmental impacts of all proposed resource extraction operations.
- Prohibit incompatible development in areas which have a significant potential for harm to public health, safety and welfare due to mineral and petroleum extraction and processing.

- Design resource extraction operations subject to discretionary permits to maintain the integrity of areas of "high environmental quality" and unique scenic value.
- Review all discretionary mineral or petroleum development including renewal of existing authorizations, under the policies and procedures of the California Environmental Quality Act.
- Encourage coordination between the Soil Conservation Service and local planning agencies.
- Continue implementing land grading ordinances that reduce soil erosion/siltation commonly associated with land development.
- Land use patterns, grading, and landscaping practices shall be designed to prevent soil erosion while retaining natural watercourses when possible.
- Encourage property owners to improve or preserve soil conditions.
- Prohibit premature removal of ground cover in advance of development and require measures to prevent soil erosion during and immediately after construction.

4.7.3 ENVIRONMENTAL IMPACTS

4.7.3.1 Thresholds of Significance

For the purposes of this PEIR, Kern COG has determined that adoption and/or implementation of the Plan could result in significant adverse impacts related to geology and soils if the Plan would result in any of the following:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

   i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

   ii) Strong seismic ground shaking?

   iii) Seismic-related ground failure, including liquefaction?

   iv) Landslides?

b) Result in substantial soil erosion or the loss of topsoil?

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

4.7.3.2 Methodology

The analysis assesses the potential impacts to geological features that could result from implementation of the proposed 2026 RTP. For each potential impact, implementation of the proposed RTP is analyzed at the regional level. Implementation of the proposed 2026 RTP is also analyzed in terms of its impacts to the region's TPAs. TPAs are areas of the region that are within 0.5 mile of a major transit stop or high-quality transit corridor. For a full description of TPAs in the region, refer to **Section 3.0, Project Description**.

Impacts are assessed in terms of both land use and transportation impacts. By 2049, implementation of the proposed RTP will result in a land use pattern and transportation network that is different from existing conditions. Unless otherwise stated, "existing conditions" in the proposed RTP refer to conditions in the year 2019.

In 2015, the California Supreme Court in *California Building Industry Association v. Bay Area Air Quality Management District (CBIA v. BAAQMD* (2015) 62 Cal.4th 369), held that CEQA generally does not require a lead agency to consider the impacts of existing environmental conditions on the future residents or users of a project. However, if a project risks exacerbating preexisting environmental hazards or conditions, the lead agency is required to analyze the impact of that exacerbated condition on the environment, which may include future residents and users within the project area. Generally, transportation and land use projects under the Plan would not exacerbate existing environmental hazards related to geological and soil conditions, nonetheless, consistent with past practice, information is presented on geologic hazards at the regional level that may be of use to local jurisdictions or other readers of the Plan or PEIR.

Cumulative Analysis

The RTP addresses transportation projects and land use distribution patterns. These land use distribution patterns identify growth distribution and anticipated land use development to accommodate growth

projections. The Kern Regional Travel Demand Model (RTDM) used for this analysis captures pass through traffic that does not have an origin or destination in the region, but does impact the region, so that too is included in the project analysis. Although a similar level of development is anticipated even without the RTP, this Plan would influence growth, including distribution patterns, throughout Kern County. To address this, the analysis in the EIR covers overall impacts of all transportation projects and land development described in the RTP. In addition, this Program EIR considers cumulative impacts from other regional plans (e.g., Air Quality Management Plans [AQMPs] as well as RTPs and AQMPs of adjacent jurisdictions), which could result in additional impacts inside and outside Kern County.

Determination of Significance

The methodology for determining the significance of geological and soil impacts compares the existing conditions to the 2026 RTP conditions, as required by *CEQA Guidelines* Section 15126.2(a). The known geological resources located within the region were evaluated using the criteria set forth by the California Department of Conservation (CDC) and the *CEQA Guidelines*.

The region contains a number of geological hazards; therefore, the potential for impacts to result from specific RTP projects and development could be substantial. Improvements within existing rights-of-way are less likely to be affected by geological hazards; however, new highway segments near geological hazards could constitute a significant impact because regional connectivity could be affected in the event of seismic activity. As discussed above, construction of new transportation and development is a heavily regulated issue area in California, and most of the potential hazards of developing in a seismically active area are addressed by these detailed regulations that specify geotechnical evaluation and construction methods for a variety of soil conditions. This document analyzes impacts of the proposed 2026 RTP at a programmatic level. Project-level analysis of geologic impacts must be undertaken as appropriate.

Approach to Mitigation

As discussed in **Section 1.0, Introduction,** Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to

supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

4.7.3.3 Impacts and Mitigation Measures

Impact GEO-1 **Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving:**

- **A rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;**
- **Strong seismic ground shaking;**
- **Seismic-related ground failure, including liquefaction;**
- **Landslides.**

Regional Impacts

Seismic activity can cause damage to existing structures designed with substandard construction. However, new and recently seismically retrofitted structures designed with current engineering knowledge can reduce potential damage and harm to and within these structures. These earthquake resistant structures can minimize the impact to public safety from seismic events. Nevertheless, new transportation infrastructure and facilities associated with implementation of the 2026 RTP would expose additional people and infrastructure to the effects of seismic activity.

In addition to increased development and changes in land use, a variety of transportation improvements are included in the RTP such as new HOV lanes, auxiliary lanes, roadway widening, bicycle and pedestrian infrastructure improvements, transit facilities, increased transit service, and roadway maintenance and rehabilitation projects. The RTP projects involve the expansion or extension of the transportation system, which may expose people or structures to seismic activity.

Seismic activity has the potential to compromise the structural integrity of new facilities proposed in the RTP. The CDC has identified several fault zones throughout the County. Inferred fault traces, located fault

traces, approximate fault traces, and concealed fault traces are located within the boundaries of the proposed RTP, as shown in **Figure 4.7-2**, **Significant Faults Located in Kern County,** above.

Some projects would be located near fault traces. Projects would be located in areas known to experience severe ground acceleration during earthquakes making these areas susceptible to severe ground shaking and earth movement. **Figure 4.7-5, Proposed RTP Transportation Projects Located Near Active Faults**, illustrates the location of projects and existing faults. Further, as noted above, earthquakes can occur within previously undetected fault zones. For example, the July 2019 Ridgecrest earthquakes occurred within previously undetected fault zones and caused an excess of one billion dollars in damages.[13] A catastrophic earthquake on the San Andreas Fault would have the potential to cause 1,800 fatalities, displace 9 million people, and cause more than $200 billion in damages.[14]

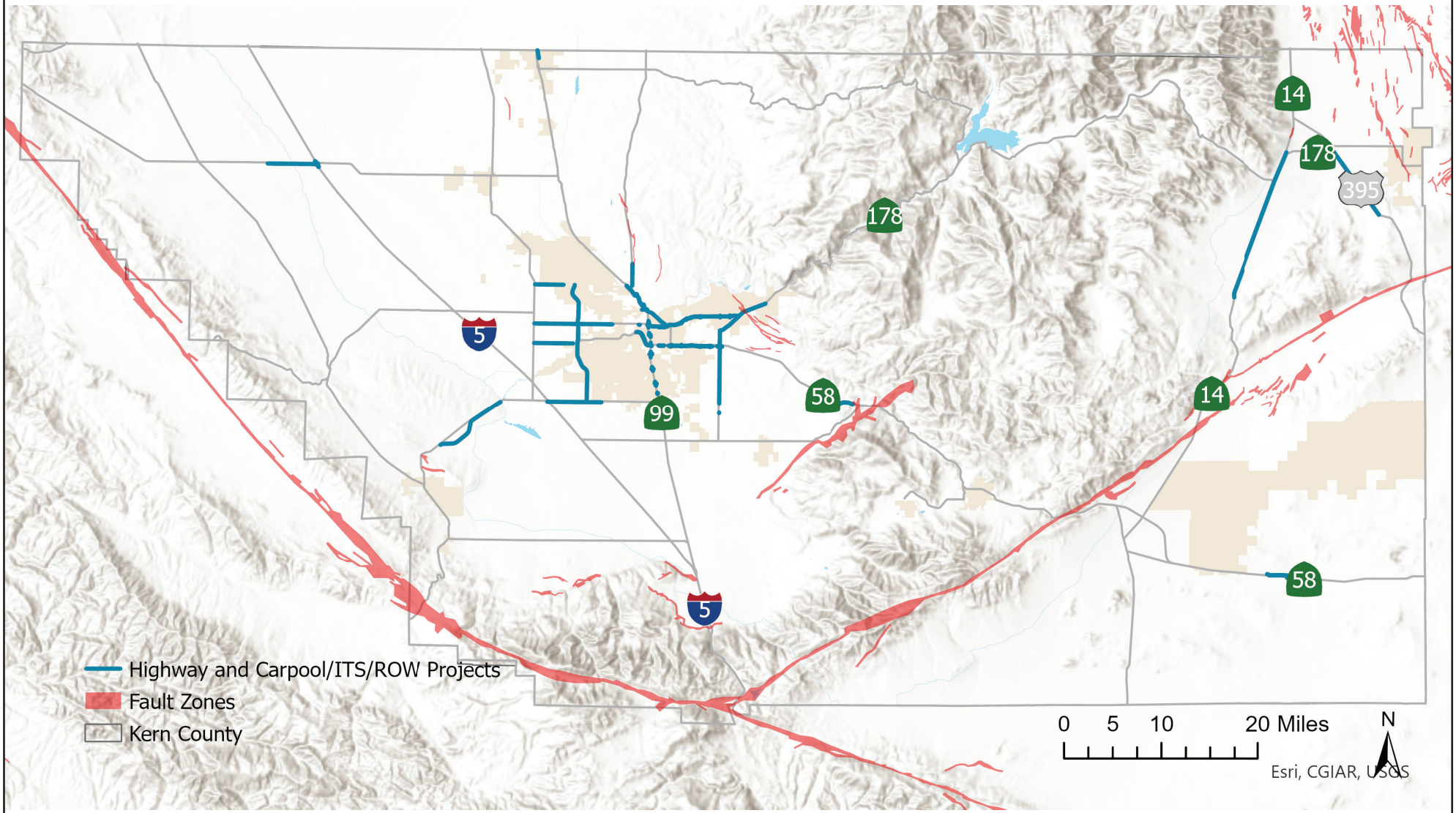
Increased density could increase the number of people and structures exposed to potential fault rupture at a given location. For example, if a fault were to rupture adjacent to an urban center more people would be affected than if fault rupture were to occur in a remote area of the region with few people (as was the case with the Ridgecrest earthquake). Strength of a particular earthquake and proximity to the fault would also be factors in how many people are affected by an earthquake. Implementation of the Plan would result in projects exposed to both direct and indirect effects of seismic activities compared to existing conditions. However, the Plan would neither cause nor exacerbate existing geologic hazards, including the likelihood of fault rupture.

Based on available knowledge of fault locations and locations of earthquake epicenters, the risk of surface fault rupture in the RTP plan area is generally low because there are relatively few active faults in Kern County. Further, a majority of these faults are located in predominately agricultural and open space areas where no development is planned. RTP transportation projects contained in the 2026 RTP as well as anticipated development would be expected to be exposed to both direct and indirect effects of earthquakes over their lifetimes. Potential direct impacts from surface rupture and severe ground shaking could cause catastrophic damage to transportation infrastructure, particularly overpasses and underground structures. Indirect impacts from seismic events could damage ancillary facilities such as traffic control equipment, and train stations.

---

13 CBS News, *Recent California Earthquakes a Stark Warning for Los Angeles. July 8, 2019.* Available online at: https://www.cbsnews.com/news/california-earthquakes-a-stark-warning-for-los-angeles-ridgecrest-trona/, accessed April 2, 2026.

14 United States Geological Survey. *The Shake Out Scenario*. 2008. Available online at: http://pubs.usgs.gov/of/2008/1150/of2008-1150.pdf, accessed April 2, 2026



SOURCE: Kern COG, 2026

FIGURE **4.7-5**

IMPACT SCIENCES

Proposed RTP Transportation Projects Located Near Active Faults

1170.004•04/26

Ground rupture usually is restricted to earthquakes of more than 5.5 magnitude on the Richter scale. Although the County has experienced earthquakes of this magnitude in the past, there is no known occurrence of local ground rupture.

The impacts from ground failure, including liquefaction, from development of the proposed land uses and implementation of transportation improvements would be addressed through site-specific geotechnical studies prepared in accordance with standard industry practices and state-provided guidance, such as CGS Special Publication 117A, and the County's General Plan which specifically address liquefaction. In addition, development would conform to the current seismic design provisions of the UBC and California Building Code (CBC) to mitigate losses from ground failure as a result of an earthquake. Proposed developments would also adhere to the local general plans and local building code requirements that contain seismic safety requirements to resist ground failure through modern construction techniques.

Development of the proposed land uses would be required to conform to the current seismic design provisions of the UBC and CBC through Title 24 of the California Code of Regulations (CCR), to provide for the latest in earthquake safety and mitigate losses from an earthquake. The County is located in Seismic Zone 4; proposed developments would adhere to the local building code requirements that contain seismic safety requirements to resist ground shaking through modern construction techniques. In addition, development would comply with local general plans, and in accordance with standard industry practices and state-provided guidance, such as the CGS Special Publication 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California, which provides guidance for the evaluation and mitigation of earthquake-related hazards.

The implementation of roadway improvements would be required to follow design provisions through the UBC and CBC, and local building standards, to employ design standards that consider seismically active areas in order to safeguard against major structural failures or loss of life. Similarly, bridge design would be required to comply with Caltrans design criteria. Caltrans provides Seismic Design Criteria (SDC) for the design of new bridges in California, specifying minimum levels of structural system performance, component performance, analysis, and design practices for bridges.

Small landslides are common in the County's mountain areas as loose material moves naturally down existing slopes, or fires have caused loss of soil-stabilizing vegetative cover. In addition, many human activities tend to make the earth's materials less stable and, thus, increase the chance of ground failure. Some of the natural non-seismic causes of ground instability are steam and lakeshore erosion, heavy rainfall, and poor-quality natural materials. Human activities contribute to soil instability through grading of steep slopes or overloading them with artificial fill, by extensive irrigation, construction of impermeable surfaces, excessive groundwater withdrawal, and removal of stabilizing vegetation.

As discussed above, implementation of the Plan would not exacerbate existing geologic hazards including fault rupture because the region is a seismically active area, and this condition exists throughout the region. Furthermore, there are numerous regulations in place to reduce such risks to any planned development or transportation project, and therefore, the potential impacts of the Plan with regard to fault rupture are less than significant. No mitigation measures are necessary.

Transit Priority Areas

The TPA impacts associated with implementation of the proposed RTP are the same as the regional impacts discussed above for **Impact GEO-1**. Land use and transportation projects in the TPAs would not exacerbate an existing geologic condition. Therefore, impacts would be less than significant. No mitigation measures are necessary.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less than significant.

Impact GEO-2 Result in substantial soil erosion or the loss of topsoil.

Regional Impacts

New land uses and transportation development included in the RTP could result in soil erosion or the loss of topsoil because of new exposed graded surfaces, excavation, stock piling, or boring which are necessary during development. Development may disturb previously undisturbed soils, and new development may increase water runoff, causing erosion problems, and potentially, slope failure.

Kern County is susceptible to severe thunderstorms and heavy rains, which can lead to high flood peaks, and cause flash flooding and erosion, especially in the mountain watersheds. Further, the Valley-region of Kern County is affected by wind erosion and is at risk for dust storms.[15] The UBC and CBC regulate slope instability and conditions that can lead to erosion and requires foundation engineering and investigation of soils on sites proposed for development in geologic hazard areas. The reports from these investigations

15 2020 Kern County Multi-Hazard Mitigation Plan, https://mitigatehazards.com/county-of-kern/kern-hmp-docs/, April 3, 2026.

must demonstrate the hazard from the project will be eliminated or there is no danger for the intended use of the site. All major earthwork requires a grading permit, to minimize erosion, and local grading ordinances ensure that development in geologic hazard areas does not pose a threat to human life and property.

In addition, development may be subject to compliance with a NPDES permit, including the implementation of BMPs, some of which are specifically implemented to reduce soil erosion or loss of topsoil, and the implementation of a SWPPP through the local jurisdiction. However, preventing soil erosion or the loss of topsoil through local grading ordinances and other local controls are under the implementing agency's jurisdiction. In light of the regional nature of the RTP it is unknown whether the implementation of state and local controls and measures will eliminate soil erosion or the loss of topsoil to a less than significant level.

Further, transportation improvements in the proposed RTP include new HOV lanes, auxiliary lanes, roadway widening, bicycle and pedestrian infrastructure improvements, transit facilities, increased transit service, and roadway maintenance and rehabilitation projects. Soil erosion and loss of topsoil could result from implementation of the proposed RTP projects that involve the expansion or extension of the transportation system into previously undeveloped land.

Soil erosion and loss of topsoil could be impacted through transportation network improvements, since these usually involve grading or earthwork, and increased impervious surfaces and removal of vegetative cover. As with land use projects discussed above, the transportation network improvements would be subject to a variety of state and local regulations, including the UBC, CBC, NPDES requirements and local ordinances and regulations, which are designed to avoid potential hazards associated with soil erosion. However, it is unknown at the programmatic level whether the implementation of these regulatory controls will reduce the impacts to a less than significant level for individual projects. Therefore, the potential for adverse soil impacts related to transportation improvements and land use changes from implementation of the proposed RTP is considered potentially significant for **Impact GEO-2**. Mitigation is required. **Mitigation Measure GEO-1** below would mitigate these impacts.

Transit Priority Area

The regional impact section describes potential impacts caused by the substantial soil erosion and the loss of topsoil. As with the regional impacts discussed above, the TPA impacts associated with implementation of the proposed RTP are the same for **Impact GEO-2**. Land use and transportation projects in the TPAs have the potential to result in substantial soil erosion and/or the loss of topsoil.

As the regional level, it is unknown whether the implementation of regulatory controls will reduce impacts

to a less than significant level for individual projects. Therefore, the potential for adverse soil impacts related to the land use changes and transportation improvements from implementation of the proposed RTP in the TPAs is considered potentially significant for **Impact GEO-2**. Mitigation is required. **Mitigation Measure GEO-1** is described below.

Level of Significance Before Mitigation

Potentially significant.

Mitigation Measure

GEO-1: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to require the development and implementation of detailed erosion control measures, consistent with the CBC and UBC regulations and guidelines and/or local NPDES, to address erosion control specific to the project site; revegetate sites to minimize soil loss and prevent significant soil erosion; avoid construction on unstable slopes and other areas subject to soil erosion where possible; require management techniques that minimize soil loss and erosion; manage grading to maximize the capture and retention of water runoff through ditches, trenches, siltation ponds, or similar measures; and minimize erosion through adopted protocols and standards in the industry. The implementing and local agencies should also require land use and transportation projects to comply with locally adopted grading, erosion, and/or sediment control ordinances beginning when any preconstruction or construction-related grading or soil storage first occurs, until all final improvements are completed.

Level of Significance After Mitigation

Because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, even with implementation of **Mitigation Measure GEO-2**, impacts remain potentially significant and unavoidable.

Impact GEO-3 **Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading subsidence, liquefaction, or collapse.**

Regional Impacts and Transit Priority Areas

The development forecast in the proposed RTP could be located on land that is unstable, or that could

become unstable from a project and result in geologic hazards. Structures, including residential units and commercial buildings, and transportation infrastructure could be damaged because of landslide or mudslides from unstable soils or geology. In addition, slope failure can occur naturally through rainfall or seismic activity, or through earthwork and grading related activities.

Excavation related to construction projects or as needed to construct anticipated development could result in unstable soils. Soils with high percentages of clay can expand when wet, causing structural damage to surface improvements. These clay soils occur throughout Kern County, making it necessary to survey project areas extensively prior to construction. A number of projects would have the potential to contain expansive soils, although they are more likely to be encountered in lower drainage basin areas.

Soil types within Kern County are diverse. Soils with a large percentage of clay, soils that have slow to moderately slow permeability soils, and soils with coarse to moderately fine texture, present the greatest constraints to development or construction because of severe shrink-swell potential and the high corrosiveness of associated soils. Very shallow soils, rock and/or very coarse textured soils also tend to result in potential for flooding and erosion. A number of projects included in the proposed RTP could be located in areas including these soil groups.

Expansive soils are generally removed during foundation work to avoid structural damage. Expansive soils are addressed through the integration of geotechnical information in the planning and design process for individual projects. Local soil suitability is assessed for specific projects in accordance with standard industry practices and state-provided guidance, such as CGS Special Publication 117A, used to minimize the risk associated with unstable soils. Compliance with UBC and CBC requirements, as well as local building codes and ordinances reduces hazards relating to unstable soils and slope failure.

However, at the programmatic level of analysis, the risk related to slope failure and unstable soils would remain, impacts and the regional and TPA levels would be potentially significant for **Impact GEO-3**. As such, mitigation is required. **Mitigation Measure GEO-2** below would reduce these impacts.

Level of Significance Before Mitigation

Potentially significant.

Mitigation Measure

GEO-2: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to conduct site-specific, design level geotechnical investigation for individual projects. Investigations

should include an analysis of expected ground motions from known active faults. The analyses should be in accordance with applicable regulations and consistent with the most recent version of the California Building Code, which requires structural design that can accommodate ground accelerations expected from known active faults. In addition, investigations should determine final design parameters for walls, foundations, foundation slabs, and surrounding related improvements (utilities, roadways, parking lots and sidewalks). Investigations should be conducted by a registered geotechnical engineer. All recommendations by project engineers and geotechnical engineers should be included in final designs. Final seismic considerations should be submitted to and approved by the appropriate local jurisdiction prior to the commencement of a project.

Level of Significance After Mitigation

Because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, even with implementation of **Mitigation Measure GEO-2**, impacts remain potentially significant and unavoidable.

Impact GEO-4 **Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.**

Regional Impacts and Transit Priority Areas

As mentioned above, various soil groups exist within the County, including groups of expansive soils. Expansive soils have the potential to compromise the structural integrity of proposed new structures including foundations and pavement. This type of damage can also occur over an extended period.

As discussed under **Impact GEO-3**, this impact is addressed largely through the integration of geotechnical information in the planning and design process for development projects to determine the local soil suitability for specific projects in accordance with standard industry practices and state provided guidance, such as CGS Special Publication 117A, used to minimize the risk associated with these hazards. These measures generally are enforced through compliance with the UBC and CBC requirements, and local building codes and ordinances, including the County's General Plan to avoid or reduce hazards relating to unstable soils and slope failure.

However, at the programmatic level, the potential for hazards related to unstable soils and slope failure would remain and impacts at the regional and TPA levels would be potentially significant for **Impact GEO-4**. As such, mitigation is required. **Mitigation Measure GEO-2** above would reduce these impacts.

Level of Significance Before Mitigation

Potentially significant.

Mitigation Measure

As described above, land use and transportation projects would be required to comply with the CBC and UBC. **Mitigation Measure GEO-2** would also be required. Because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, even with implementation of **Mitigation Measure GEO-2**, impacts could remain significant and unavoidable. The characteristics of any individual project and/or resource will affect the level of significance after mitigation, as well as the feasibility of mitigation that must be assessed on a project-by-project basis based on project specific details.

Level of Significance After Mitigation

Because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, even with implementation of **Mitigation Measure GEO-2** impacts remain significant and unavoidable.

Impact GEO-5 **Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water.**

Regional Impacts

To the extent septic tanks and alternative wastewater disposal systems may be required in more rural areas, septic tanks and alternative wastewater disposal systems are heavily regulated at the state, regional, and local level. Local jurisdictions also have general plans that contain policies and implementation measures, including BMPs relevant to the use of septic tanks or alternative water disposal system. County environmental health departments regulate septic tanks through measures such as requiring a Sewage Disposal Permit for construction, reconstruction, repair, or abandonment of septic tanks. Therefore, impacts from having soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater would be less than significant, and no mitigation measures are required.

Transit Priority Area

The Plan includes transportation investments and the regional land use strategies that are intended to produce more dense development in well-served transit areas. These land use strategies encourage

development in TPAs and more walkable, mixed-use communities to accommodate the anticipated growth of 106,900 people by 2049. The Plan does not encourage or anticipate residential development in areas where sewers are not available for the disposal of wastewater or where densities would not support the provision of sanitary sewers. the Plan's transportation projects would not require septic tanks or alternative wastewater disposal systems. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant with no mitigation required.

Impact GEO-6 **Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.**

Regional Impacts and Transit Priority Area

As noted above, areas within the region contain archaeological localities that are rich with fossil bearing sedimentary formations. All areas within the region have the potential for yielding undiscovered paleontological resources. Each known site is documented at the Southern San Joaquin Valley Information Center (California State University, Bakersfield), which holds location information on archaeological sites in Kern County. Paleontological sites are numerous in Kern County. The development of new transportation facilities as well as new development consistent with the RTP could affect paleontological resources, primarily through the disturbance or vandalism of buried resources. Frequently, these resources are previously unidentified. Therefore, any excavation in previously undisturbed soil or geologic formation has the potential to impact archaeological, paleontological and tribal resources. Improvements within existing rights-of-way and that only affect previously disturbed soils are less likely to affect resources.

Potential impacts to paleontological resources would be more likely to occur from ground-disturbing activities associated with transportation projects and development projects anticipated to occur under the Plan rather than during ongoing operations. Direct permanent impacts to paleontological resources as a result of the Plan may result from ground disturbance associated with construction. Ground-disturbing activities such as excavation for building foundations and bridges, trenching for utility lines, tunneling, and grading, could damage or destroy sensitive paleontological resources on or near the surface or at depth. Construction in previously undisturbed areas and deep excavation activities would have the greatest probability to impact intact buried paleontological resources. The potential for direct impacts to paleontological resources may be comparatively less for improvements to existing facilities and modifications to existing rights-of-way since these areas have been previously disturbed. However, any construction in geologic units sensitive for paleontological resources could result in potentially significant damage to or destruction of unique paleontological resources.

Direct permanent impacts may arise if paleontological resources cannot be completely avoided by project design. Substantial damage to or destruction of significant paleontological resources would represent a significant impact. Excavation of the sediments and any significant fossils could destroy or degrade the condition of the fossils; additionally, the nature of project excavation would cause any fossils to be removed from their stratigraphic context, thereby reducing the scientific usefulness of the fossil. The extensive distribution and presence of rock units below the ground surface that may contain significant fossilized remains makes it difficult to predict the location of paleontological resources during the project planning phase, and thus increases the likelihood of inadvertent discovery of significant paleontological resources during construction and ground-disturbing activities.

Therefore, the potential direct impacts on paleontological resources related to implementation of transportation projects and development projects anticipated to occur under the Plan, could result in substantial alteration or removal of a significant paleontological resource from construction activities, and is considered significant at the regional and TPA levels. As such, mitigation is required. Mitigation Measures GEO-3 and GEO-4 below will reduce these impacts, as well as adherence to existing federal and state regulations.

Mitigation Measures

GEO-3: Kern COG shall consult with resource agencies such as the National Park Service, United States Forest Service, and Bureau of Land Management to identify opportunities for early and effective consultation to identify unique paleontological resources and unique geological features to avoid such resources wherever practicable and feasible and reduce or mitigation for conflicts in compatible land use to the maximum extent practicable.

GEO-4: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing to ensure compliance with the Paleontological Resources Preservation Act, the Federal Land Policy and Management Act, the Antiquities Act, Section 5097.5 of the Public Resources Code (PRC), adopted county and city general plans, and other federal, state and local regulations, as applicable and feasible, by adhering to and incorporating the performance standards and practices from the 2010 Society for Vertebrate Paleontology (SVP) standard procedures for the assessment and mitigation of adverse impacts to paleontological resources.

Level of Significance after Mitigation

As described above, land use and transportation projects would be required to comply with existing regulations regarding discovery of paleontological resources. **Mitigation Measures GEO-3** and **GEO-4**

would also be required as applicable and appropriate. Because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, even with implementation of **Mitigation Measure GEO-3** and **GEO-4**, impacts could remain significant and unavoidable. The characteristics of any individual project and/or resource will affect the level of significance after mitigation, as well as the feasibility of mitigation that must be assessed on a project-by-project basis based on project-specific details.

4.7.4 CUMULATIVE IMPACTS

Potentially hazardous geological and seismic factors, along with planetological resources, are found throughout California and are generally site-specific. The proposed RTP encompasses all development (both transportation and land use changes) that would occur in the region through 2049. The impacts of anticipated development are discussed above; the RTP would not contribute to a cumulatively considerable increase in risk associated with geologic hazards. However, development under the RTP would add significant impacts to existing paleontological resources. Implementation of **Mitigation Measures GEO-1** and **GEO-2** would reduce impacts related to geologic hazards, while **Mitigation Measures GEO-3** and **GEO-4** would offset impacts to paleontological resources. However, as discussed above, risks to both geological/seismic factors and paleo resources would remain, and impacts would be potentially significant. Given the site-specific nature of geologic impacts, it is not anticipated that the RTP would contribute to cumulative impacts outside of the region, while due to the shared nature of paleo resources, impacts would remain significant throughout the state.

4.8 GREENHOUSE GASES

This section discusses the existing conditions related to greenhouse gases (GHG) and global climate change and evaluates the potential impacts from implementation of the 2026 RTP. The section also provides a discussion of the applicable federal, state, regional, and local agencies that regulate, monitor, and control GHG emissions. In addition, this Program EIR provides regional-scale mitigation measures as well as a framework of mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies to reduce identified impacts as appropriate and feasible.

4.8.1 ENVIRONMENTAL SETTING

Global climate change refers to any significant change in climate measurements, such as temperature, precipitation, or wind, lasting for an extended period (i.e., decades or longer).[1] Climate change may result from:

- natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- natural processes within the climate system (e.g., changes in ocean circulation, reduction in sunlight from the addition of GHGs and other gases to the atmosphere from volcanic eruptions); and
- human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, desertification).

According to scientists, human activities have resulted in a change in the global climate. The primary manifestation of global climate change has been a rise in the average global tropospheric temperature of 0.2 degrees Celsius (°C) per decade, determined from meteorological measurements worldwide between 1990 and 2005.

The natural process through which heat is retained in the troposphere[2] is called the greenhouse effect. The greenhouse effect traps heat in the troposphere through a threefold process: (1) short-wave radiation in the form of visible light emitted by the Sun is absorbed by the Earth as heat; (2) long-wave radiation is re-emitted by the Earth; and (3) GHGs in the upper atmosphere absorb or trap the long-wave radiation and

1 U.S. Environmental Protection Agency, "Glossary of Climate Change Terms." Available online at https://19january2017snapshot.epa.gov/climatechange/glossary-climate-change-terms_.html, accessed April 1, 2026.

2 The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface from 6 to 7 miles.

re-emit it back towards the Earth and into space. This third process is the focus of current climate change policy because increased quantities of GHGs in the Earth's atmosphere result in more of the long-wave radiation being trapped in the atmosphere.

While water vapor and carbon dioxide (CO_2) are the most abundant GHGs, other trace GHGs have a greater ability to absorb and re-radiate long-wave radiation. To gauge the potency of GHGs, scientists have established a Global Warming Potential (GWP) for each GHG based on its ability to absorb and re-emit long-wave radiation over a specific period. The GWP of a gas is determined using CO_2 as the reference gas, which has a GWP of 1 over 100 years.[3] For example, a gas with a GWP of 10 is 10 times more potent than CO_2 over 100 years. The use of GWP allows GHG emissions to be reported using CO_2 as a baseline. The sum of each GHG multiplied by its associated GWP is referred to as "carbon dioxide equivalents" (CO_2e). This essentially means that 1 metric ton of a GHG with a GWP of 10 has the same climate change impacts as 10 metric tons of CO_2.

The impacts of climate change have been documented by the Office of Environmental Health Hazard Assessment (OEHHA), which includes the following changes that are already occurring:[4,]

- A recorded increase in annual average temperatures as well as increases in daily minimum and maximum temperatures.
- An increase in the occurrence of extreme events, including wildfires and heat waves.
- A reduction in spring runoff volumes, as a result of declining snowpack.
- A decrease in winter chill hours is necessary for the production of high-value fruit and nut crops.
- Changes in the timing and location of species sightings, including migration upslope of flora and fauna, and earlier appearance of Central Valley butterflies.

In addition to this, California's 2014 drought incited land subsidence, pest invasions that killed over 100 million trees, and water shortages. The total statewide economic cost of the 2014 drought was estimated at $2.2 billion, with a total loss of 17,100 jobs.[5] An analysis of water usage between 1990 and 2012 showed that

---

3 All GWPs are given as 100-year GWP. Unless noted otherwise, all GWPs were obtained from the Intergovernmental Panel on Climate Change. *Climate Change 1995: The Science of Climate Change – Contribution of Working Group I to the Second Assessment Report of the IPCC*. Cambridge (UK): Cambridge University Press, 1996

4 OEHHA, *Indicators of Climate Change in California*. Available online at: https://oehha.ca.gov/climate-change/document/indicators-climate-change-california, accessed April 1, 2026.

5 Howitt, R., Medellin-Azuara, J., MacEwan, D., Lund, J., and Summer, D. *Economic Analysis of 2014 Drought for California Agriculture*. 2014.

while California's energy policies have supported climate mitigation efforts, the performance of these policies has increased vulnerability to climate impacts.[6]

According to the U.S. Forest Service National Insect and Disease Forest Risk Assessment,[7] California is at risk of losing 12 percent of the total area of forests and woodlands in the State due to insects and disease, or over 5.7 million acres. While future climate change is not modeled within the risk assessment, and drought conditions are not accounted for in these estimates, the projected climate changes over a 15-year period (2013-2027) are expected to significantly increase the number of acres at risk and will increase the risk from already highly destructive pests such as the western pine beetle.

The warming climate also causes sea level rise by warming the oceans, which causes water to expand, and by melting land ice, which transfers water to the ocean. Sea level rise is expected to magnify the adverse impact of any storm surge and high waves on the California coast. As temperatures warm and GHG concentrations increase, more carbon dioxide dissolves in the ocean, making it more acidic. More acidic ocean water affects a wide variety of marine species, including species that people rely on for food.[8]

While more intense dry periods are anticipated under warmer conditions, increased extreme wet conditions are also expected to increase due to more frequent warm, wet atmospheric river events and a higher proportion of precipitation falling as rain instead of snow. In recent years, atmospheric rivers have also been recognized as the cause of the large majority of major floods in rivers all along the U.S. West Coast and as the source of 30-50 percent of all precipitation in the same region.[9] These extreme precipitation events, together with the rising snowline, often cause devastating floods in major river basins (e.g., California's Russian River). Looking ahead, the frequency and severity of atmospheric rivers on the U.S. West Coast will increase due to higher atmospheric water vapor that occurs with rising temperatures, leading to more frequent flooding.[10,11]

As GHG emissions continue to accumulate and climate disruption grows, such destructive events will become more frequent. Several recent studies project increased precipitation within hurricanes over ocean

---

6 Fulton, J., and Cooley, H., *The Water Footprint of California's Energy System, 1990-2012.* 2015.

7 U.S. Department of Agriculture Forest Service, *2013-2027 National Insect and Disease Forest Risk Assessment.* January 2014, available online at: https://research.fs.usda.gov/treesearch/57824, accessed, April 1, 2026.

8 California Air Resources Board, *California's 2017 Climate Change Scoping Plan.* November 2017.

9 American Meteorological Society, *Atmospheric Rivers as Drought Busters on the U.S. West Coast,* April 2013.

10 Hagos, S., Leung, L.R., Yoon, JH., Lu, J., and Gao, Y., *A projection of changes in landfalling atmospheric river frequency and extreme precipitation over western North America from the Large Ensemble CESM simulations.* January 2016.

11 Payne, Ashley and Magnusdottir, Gudrun, *An Evaluation of Atmospheric Rivers over the North Pacific in CMIP5 and their response to warming under RCP 8.5.* November 2015.

regions.[12,13] The primary physical mechanism for this increase is higher water vapor in the warmer atmosphere, which enhances moisture convergence in a storm for a given circulation strength. Since hurricanes are responsible for many of the most extreme precipitation events, such events are likely to become more extreme. Anthropogenic warming by the end of the 21st century will likely cause tropical cyclones globally to become more intense on average. This change implies an even larger percentage increase in the destructive potential per storm, assuming no changes in storm size.[14,15] Thus, the historical record, which once set our expectations for the traditional range of weather and other natural events, is becoming an increasingly unreliable predictor of the conditions we will face in the future. Consequently, the best available science must drive effective climate policy.[16]

Together, historical data, current conditions, and future projections provide a picture of California's changing climate, with two important messages:

- Change is already being experienced and documented across California, and some of these changes have been directly linked to changing climatic conditions.
- Even with the uncertainty in future climate conditions, every scenario estimates further change in future conditions.

It is critical that California continue to take steps to reduce GHG emissions in order to avoid the worst of the projected impacts of climate change. At the same time, the State is taking steps to make the State more resilient to ongoing and projected climate impacts as laid out by the Safeguarding California Plan.[17] The Safeguarding California Plan was updated in 2018 to present new policy recommendations and provide a roadmap of all the actions and next steps that state government is taking to adapt to the ongoing and inevitable effects of climate change. California's continuing efforts are vital steps toward minimizing the

---

12 Easterling, D.R., Kunkel, K.E., Wehner, M.F., and Sun, L., *Detection and Attribution of Climate Extremes in the Observed Record*. March 2016.

13 National Academies of Sciences, Engineering, and Medicine, *Attribution of Extreme Weather Events in the Context of Climate Change.* 2016.

14 Sobel, A.H., Camargo, S.J., Hall, T.M., Lee, C-Y., Tippett, M.K., and Wing, A.A., *Human Influence on Tropical Cyclone Intensity.* 2016.

15 Kossin, James P., NOAA/National Centers for Environmental Information, *Past and Projected Changes in Western North Pacific Tropical Cyclone Exposure*. July 2016.

16 California Air Resources Board, *California's 2017 Climate Change Scoping Plan.* November 2017.

17 California Natural Resources Agency, *Safeguarding California Plan: 2018 Update*, January 2018. Available online at: https://resources.ca.gov/-/media/CNRA-Website/Files/Initiatives/Climate/safeguarding-california-plan-2018-update.pdf, accessed April 1, 2026.

impact of GHG emissions and a three-pronged approach of reducing emissions, preparing for impacts, and conducting cutting-edge research can serve as a model for action.[18]

Kern County has received U.S. EPA permits for the first carbon capture project in the State which could sequester more than 1 million metric tons of carbon dioxide annually, the equivalent of removing 200,000 passenger vehicles off the road. The project, called Carbon TerraVault I will bury carbon dioxide from various industrial sources and bury it in depleted oil reservoirs in the Lost Hills Oil Field.[19]

4.8.1.1 Greenhouse Gases

GHGs of most concern include the following compounds:

- Carbon Dioxide (CO_2). Anthropogenic CO_2 emissions are primarily generated by fossil fuel combustion from stationary and mobile sources. Over the past 200 years, the burning of fossil fuels such as coal and oil, deforestation, land-use changes, and other activities have caused the concentrations of heat-trapping GHGs to increase significantly in our atmosphere.[20] Carbon dioxide is also generated by natural sources such as cellular respiration, volcanic activity, decomposition of organisms, and forest fires. Carbon dioxide is the most widely emitted GHG and is the reference gas (GWP of 1) for determining the GWP of other GHGs.

- Methane (CH_4). Methane is emitted from biogenic sources (i.e., resulting from the activity of living organisms), incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the US, the sources of CH_4 are production and transport of fossil fuels, livestock, agricultural practices, and anaerobic decay of organic waste in landfills.[21] Methane is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of CH_4 is 21.

- Nitrous Oxide (N_2O). Nitrous oxide is produced by natural and human-related sources. Primary human-related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of N_2O is 310.

---

18 California Air Resources Board, *California's 2022 Climate Change Scoping Plan.* November 2022.

19 California Resources Corporation, Carbon TerraVault. Available online at: https://www.crc.com/static-files/8de6ae5b-0744-44b9-a912-a4380b5d03e1, accessed April 1, 2026.

20 US Environmental Protection Agency, *Overview of Greenhouse Gases.* Available online at: https://www.epa.gov/climateimpacts, accessed April 1, 2026.

21 Ibid.

- Chlorofluorocarbons (CFCs). CFCs are typically used in the manufacture of aerosol sprays, blowing agents for foams and packing materials, as solvents, and as refrigerants. In the upper atmosphere and stratosphere, CFCs can decompose and release inorganic chlorine that lead to ozone depletion.[22]

- Hydrofluorocarbons (HFCs). HFCs typically are used as refrigerants in both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is growing, particularly as the continued phase-out of chlorofluorocarbons (CFCs) due their ozone depleting qualities, and hydrochlorofluorocarbons (HCFCs) gains momentum. HCFs also contribute to the depletion of ozone, although less than CFCs. The GWP of HFCs ranges from 140 for HFC-152a to 6,300 for HFC-236fa.[23]

- Perfluorocarbons (PFCs). Perfluorocarbons are compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor manufacturing. Perfluorocarbons are potent GHGs with a GWP several thousand times that of carbon dioxide, depending on the specific PFC. Another area of concern regarding PFCs is their long atmospheric lifetime of up to 50,000 years.[24] The global warming potentials (GWPs) of PFCs range from 5,700 to 11,900.

- Sulfur Hexafluoride (SF_6). Sulfur hexafluoride is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. Sulfur hexafluoride is the most potent GHG that has been evaluated by the Intergovernmental Panel on Climate Change with a GWP of 23,900.[25]

4.8.1.2 Global Ambient CO_2 Concentrations

Observed increases in well-mixed GHG concentrations since around 1750 are generally agreed by leading scientists to be caused by human activities. Since 2011 (measurements reported in AR5), concentrations have continued to increase in the atmosphere, reaching annual averages of 410 ppm for CO_2, 1866 ppb for CH_4, and 332 ppb for N_2O in 2019. Land and ocean have taken up a near-constant proportion (globally

---

22 NOAA Global Monitoring Laboratory. Chlorofluorocarbons (CFCs). Available online at: https://gml.noaa.gov/hats/publictn/elkins/cfcs.html, accessed April 1, 2026.

23 U.S. EPA. Protecting Our Environment by Reducing Use of HFCs. Available online at: https://www.epa.gov/climate-hfcs-reduction, accessed April 1, 2026.

24 U.S. Department of Energy, Energy Information Administration, "Emissions of Greenhouse Gases in The U.S., 2011. Available online at: https://www.eia.gov/environment/emissions/ghg_report/ghg_gwp.php, accessed April 1, 2026/.

25 U.S. Environmental Protection Agency (U.S. EPA), Sulfur Hexafluoride (SF_6) Basics. Available online at: https://www.epa.gov/eps-partnership/sulfur-hexafluoride-sf6-basics, accessed April 1, 2026.

about 56 percent per year) of CO_2 emissions from human activities over the past six decades, with regional differences.[26] See **Table 4.8-1, Comparison of Global Pre-Industrial and 2021 GHG Concentrations**.

Table 4.8-1
Comparison of Global Pre-Industrial and 2021 GHG Concentrations

Greenhouse Gas	Early Industrial Period Concentrations[1]	Natural Range for Last 650,000 Years[1]	2021 Concentrations[2]
Carbon Dioxide (CO_2)	280 ppm	180 to 300 ppm	415 ppm
Methane (CH_4)	715 ppb	320 to 790 ppb	1,896 ppb
Nitrous Oxide (N_2O)	270 ppb	NA	335 ppb

Source: [1] Intergovernmental Panel on Climate Change (IPCC), Climate Change 2013: The Physical Science Basis, Summary for Policymakers 2013. [2] IPCC, Climate Change 2021: The Physical Science Basis, Summary for Policymakers 2021. IPCC, Climate Change 2023: Synthesis Report, 2023.
ppm=parts per million; ppb=parts per billion.

4.8.1.3 Contributions to Greenhouse Gas Emissions

Global

Worldwide anthropogenic GHG emissions for industrialized nations (referred to as Annex I) and developing nations (referred to as Non-Annex I) are tracked through the year 2023. The sum of the top five GHG producing nations (plus the European Union) totaled approximately 30,520 million metric tons of CO_2 equivalents ($MMTCO_2e$).[27,28] The top five countries and the European Union accounted for approximately 61 percent of the total global GHG emissions according to the most recently available data (see **Table 4.8-2, Top Five GHG Producer Countries and the European Union [Annual]**). The GHG emissions in more recent years may differ from the inventories presented in **Table 4.8-2**; however, the data is representative of currently available global inventory data.

26 IPCC, *Climate Change 2021 The Physical Science Basis*. 2021. Available online at: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_FullReport.pdf, accessed April 1, 2026.

27 World Resources Institute, Historical GHG Emissions, 2023. Available online at: https://www.climatewatchdata.org/ghg-emissions?end_year=2023&regions=WORLD&sectors=total-excluding-lulucf&start_year=1990, accessed April 1, 2026. Excludes emissions and removals from land use, land-use change, and forestry (LULUCF).

28 The CO_2 equivalent emissions commonly are expressed as "million metric tons of carbon dioxide equivalent ($MMTCO_2e$)." The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP, such that $MMTCO_2e$ = (million metric tons of a GHG) x (GWP of the GHG). For example, the GWP for methane is 21. This means that the emission of one million metric tons of methane is equivalent to the emission of 21 million metric tons of CO_2.

United States

As noted in **Table 4.8-2**, the US was the number two producer of global GHG emissions in 2023. The primary GHG emitted by human activities in the US was CO_2; in 2023, CO_2 represented approximately 75 percent of the United States' total GHG emissions.[29]

Table 4.8-2
Top Five GHG Producer Countries and the European Union (Annual)

Top Emitting Countries	2023 GHG Emissions ($MMTCO_2e$)
China	13,986
United States	5,771
India	4,118
European Union (EU), 27 Member States	3,002
Russia	2,412
Brazil	1,209

Source: World Resources Institute, Historical GHG Emissions, https://www.climatewatchdata.org/ghg-emissions?end_year=2023&regions=TOP&sectors=total-excluding-lulucf&source=Climate%20Watch&start_year=1990, accessed April 2026. Excludes emissions and removals from land use, land-use change, and forestry (LULUCF).

State of California

Based on the GHG inventories compiled by the World Resources Institute,[30] California's total statewide GHG emissions rank second in the US (Texas is number one with 856.62 $MMTCO_2e$) with emissions of 390 $MMTCO_2e$ in 2022.[31] The California Air Resources Board (CARB) compiles GHG inventories for the State of California. Based on the 2023 GHG inventory data (i.e., the latest year for which data are available), California emitted 360 $MMTCO_2e$.[32]

29 World Resources Institute, Historical GHG Emissions, 2023. Available online at: https://www.climatewatchdata.org/ghg-emissions?end_year=2023&regions=WORLD&sectors=total-excluding-lulucf&start_year=1990, accessed April 1, 2026. Excludes emissions and removals from land use, land-use change, and forestry (LULUCF).

30 World Resources Institute, *U.S. State Inventory*, 2022 data, https://www.climatewatchdata.org/ghg-emissions?source=US, accessed April 1, 2026.

31 Ibid.

32 California Air Resources Board, Current California GHG Emission Inventory Data, 2000-2023 GHG Inventory (2021 Edition), https://ww2.arb.ca.gov/ghg-inventory-data. Accessed April 2022.

The primary contributors to GHG emissions in California are transportation, electric power production from both in-state and out-of-state sources, industry, agriculture and forestry, and other sources, which include commercial and residential activities. **Table 4.8-3, GHG Emissions in California**, provides a summary of GHG emissions reported by CARB for California in 2000 and 2023.

Table 4.8-3
GHG Emissions in California

Source Category	2000 ($MMTCO_2e$)	Percent of Total	2023 ($MMTCO_2e$)	Percent of Total
TRANSPORTATION	178.4	38.19%	133.7	**37.1%**
Passenger Vehicles	125.2	--	101.9	--
Heavy Duty Vehicles	39.5	--	23.0	--
Aviation + Rail + Ships	9.0	--	9.8	--
Unspecified	4.6	--	0.8	--
INDUSTRIAL PROCESSES & PRODUCT USE	96.2	20.59%	66.9	**18.6%**
Refineries and Hydrogen Production	28.5	--	25.2	--
Oil & Gas: Production & Processing	19.1	--	8.3	--
General Fuel Use	20.2	--	13.1	--
Cogen (thermal)	11.7	--	5.6	--
Cement	9.5	--	7.0	--
Pipelines	--	--	4.3	--
Other	7.3	--	3.5	--
ELECTRIC POWER	104.7	22%	57.2	**15.9%**
In-State	58.8	--	41.3	--
Specified Imports	45.9	--	8.0	--
Unspecified Imports	--	--	7.9	--
COMMERCIAL & RESIDENTIAL	43.9	9%	43.3	**12.0%**
Residential	30.2	--	28.4	--
Commercial	13.8	--	15.9	--
AGRICULTURE, FORESTRY, & OTHER LAND USE	31.0	7%	29.2	**8.1%**
Livestock	19.2	--	22.6	--
Crops	8.0	--	6.6	--
General Fuel Use	--	--	1.6	--
HIGH GWP	6.3	1%	21.4	**5.9%**
RECYCLING & WASTE	7.4	2%	8.6	**2.4%**
EMISSIONS SUMMARY				
Gross California Emissions	467.19		360.40	

Sources:

1 *California Air Resources Board, "California Greenhouse Gas Emissions from 2000-2023: Trends of Emissions and Other Indictors," https://ww2.arb.ca.gov/ghg-inventory-data, accessed April 1, 2026.*

Between 2000 and 2024, the population of California grew by approximately 4.5 million, from 33.9 to 39.4 million.[33] This represents an increase of approximately 16 percent from 2000 population levels. In addition, the California economy, measured as gross state product, grew from $1.4 trillion in 2000 to $3.9 trillion in 2023, over doubling the 2000 gross state product.[34] Despite the population and economic growth, California's net GHG emissions decreased by approximately 23 percent. The California Energy Commission (CEC) attributes the decrease to the success of California's renewable energy programs and its commitment to clean air and clean energy.

Kern County

The *Communitywide Greenhouse Gas Emission Inventory, 2005 Baseline Year – 2020 Forecast*[35] was prepared for Kern County and published in May 2012. The GHG emissions inventories were estimated for nine primary sectors (Electricity Production and Consumption, Residential/Commercial/Industrial Combustion, Transportation, Fossil Fuels Industry, Industrial Processes, Waste Management, Agriculture, Forestry and Land Use, and Other Sources). A baseline year of 2005 was chosen, and 2020 chosen as a forecast year. The inventory was developed by the San Joaquin Air Pollution Control District under a memorandum of understanding with Kern County.

The 2005 base year GHG emissions inventory was estimated to be 27 million metric tons of CO_2 equivalent (CO_2e) of which the Fossil Fuel Industry sector represents 40 percent followed by the Electricity Consumption sector at 22 percent. The 2020 forecasted GHG emissions inventory was estimated to be 27 million metric tons of CO_2e of which the Electricity Consumption sector represents 31 percent followed by the Fossil Fuel Industry sector at 26 percent.

4.8.2 REGULATORY FRAMEWORK

4.8.2.1 International

Intergovernmental Panel on Climate Change

The World Meteorological Organization (WMO) and United Nations Environmental Program (UNEP) established the IPCC in 1988. The goal of the IPCC is to evaluate the risk of climate change caused by human

---

33 California Department of Finance, "E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2025." Available online at: https://dof.ca.gov/Forecasting/Demographics/Estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2025/, accessed April 1, 2026.

34 California Department of Finance, "Gross Domestic Product." Available online at: https://dof.ca.gov/Forecasting/Economics/economic-indicators/gross-state-product/, accessed April 1, 2026.

35 Kern COG, Communitywide Greenhouse Gas Emission Inventory 2005 Baseline Year - 2020 Forecast. 2012. https://www.kerncog.org/wp-content/uploads/2011/09/kc_ghg_final_report_052012.pdf, accessed April 1, 2026.

activities. Rather than performing research or monitoring climate, the IPCC relies on peer-reviewed and published scientific literature to make its assessment. While not a regulatory body, the IPCC assesses information (i.e., scientific literature) regarding human-induced climate change and the impacts of human-induced climate change and recommends options to policy makers for the adaptation and mitigation of climate change. The IPCC reports its evaluations in special reports called assessment reports. The latest assessment report (i.e., AR6 Climate Change 2022: Mitigation of Climate Change, the third part of the Sixth Assessment Report) was published in April 2022. In the 2022 report, the IPCC stated net anthropogenic GHG emissions have increased since 2010 across all major sectors globally and warming will likely exceed 1.5 degrees Celsius during the 21st century.[36]

Paris Accord

The most recent international climate change agreement was adopted at the United Nations Framework Convention on Climate Change in Paris in December 2015 (the "Paris Accord").[37] In the Paris Accord, the United States set its intended nationally determined contribution to reduce its GHG emissions by 26 to 28 percent below its 2005 level in 2025 and to make best efforts to reduce its emissions by 28 percent. These targets were set with the goal of limiting global temperature rise to below 2 degrees Celsius and getting to the 80 percent emission reduction by 2050. The U.S. withdrew from the Accord in November 2020, rejoined on February 19, 2021,[38] and again withdrew in January 2026 during President Trump's second term.[39]

4.8.2.2 Federal

U.S. Supreme Court Ruling in Massachusetts v. Environmental Protection Agency and U.S. EPA Endangerment Finding

The US Supreme Court ruled in *Massachusetts v. Environmental Protection Agency*, *127 S.Ct. 1438 (2007)*, that carbon dioxide and other greenhouse gases are pollutants under the Federal Clean Air Act (CCA), which

---

36 IPCC, *Climate Change 2022: Mitigation of Climate Change*. 2022. Available online at: https://www.ipcc.ch/report/ar6/wg3/, accessed April 1, 2026.

37 United Nations, Paris Agreement, 2015. Available: http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf, accessed April 17, 2018

38 Natural Resources Defense Council, *Paris Climate Agreement: Everything You Need to Know*, January 23, 2025. Available online at: https://www.nrdc.org/stories/paris-climate-agreement-everything-you-need-know, accessed April 1, 2026.

39 Politico, "So long, Paris: US officially leaves landmark climate pact," January 1, 2026. Available online at: https://www.politico.com/news/2026/01/27/so-long-paris-u-s-officially-leaves-landmark-climate-pact-00746628, accessed April 1, 2026.

the US Environmental Protection Agency (U.S. EPA) must regulate if it determines they pose an endangerment to public health or welfare.

On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act (42 USC Section 7521):

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) in the atmosphere threaten the public health and welfare of current and future generations.

- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare

On February 12, 2026, the U.S. EPA finalized its rescission of the 2009 Greenhouse Gas Endangerment Finding. Absent this finding, the EPA lacks statutory authority under Section 202(a) of the Clean Air Act to prescribe standards for GHG emissions. Therefore, the EPA also finalized the repeal of all subsequent GHG emission standards from its regulations for light-, medium-, and heavy-duty on-highway vehicles and engines.[40] The U.S. EPA states that it is the "single largest deregulatory action in U.S. history" and that it will "save Americans over $1.3 trillion." While the EPA calculated preliminary monetary savings for Americans, the rescission of the Endangerment Finding has generated substantial legal, scientific, and policy concern regarding the politicization of scientific data and long-term impacts related to greenhouse gas emissions, climate change, public health, and future federal regulatory authority. [41]

Energy Policy Act of 1992 (EPAct)

The Energy Policy Act of 1992 (EPAct)[42] was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of

---

40 U.S. Environmental Protection Agency, Final Rule: Rescission of the Greenhouse Gas Endangerment Finding and Motor Vehicle Greenhouse Gas Emission Standards Under the Clean Air Act, March 4, 2026. Available online at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-rescission-greenhouse-gas-endangerment, accessed April 1, 2026.

41 U.S. Environmental Protection Agency. Final Rule: Rescission of the Greenhouse Gas Endangerment Finding and Motor Vehicle Greenhouse Gas Emission Standards Under the Clean Air Act. Available online at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-rescission-greenhouse-gas-endangerment

42 U.S. Environmental Protection Agency, Summary of the Energy Policy Act. Available online at: https://www.epa.gov/laws-regulations/summary-energy-policy-act, accessed April 1, 2026.

alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are also included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005

The Energy Policy Act of 2005[43] provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Energy Independence and Security Act

The Energy Independence and Security Act of 2007 includes several key provisions that will increase energy efficiency and the availability of renewable energy, which will reduce greenhouse gas emissions as a result. First, the Act sets a Renewable Fuel Standard that requires fuel producers to use at least 36 billion gallons of biofuel by 2022. Second, it increased Corporate Average Fuel Economy (CAFE) Standards to require a minimum average fuel economy of 35 miles per gallon for the combined fleet of cars and light trucks by 2020. Third, the adopted bill includes a variety of new standards for lighting and for residential and commercial appliance equipment. The equipment includes residential refrigerators, freezers, refrigerator-freezers, metal halide lamps, and commercial walk-in coolers and freezers.

EPA Reporting Rule

The US Environmental Protection Agency (U.S. EPA) adopted a mandatory GHG reporting rule in September 2009. The rule would require suppliers of fossil fuels or entities that emit industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to the U.S. EPA beginning in 2011 (covering the 2010 calendar year emission). Vehicle and engine manufacturers were required to begin reporting GHG emissions for model year 2011. The Greenhouse Gas Reporting Program (GHGRP) remains in effect and currently applies to approximately 8,000 facilities nationwide. However, in September 2025, the EPA proposed reconsideration of portions of the GHGRP, including proposed elimination or suspension of reporting requirements for numerous source categories. In 2026, the EPA also extended the reporting deadline for

---

43 Energy Policy Act of 2005. Available online at: https://www.energy.gov/sites/prod/files/edg/media/HR6PP%281%29.pdf, accessed April 27, 2022.

Reporting Year 2025 while broader revisions to the program continue to be evaluated through ongoing rulemaking.[44]

Fuel Economy Standards

On September 15, 2009, the National Highway Traffic Safety Administration (NHTSA) and EPA announced a proposed joint rule that would explicitly tie fuel economy to GHG emissions reduction requirements. The proposed new CAFE Standards would cover automobiles for model years 2012 through 2016 and would require passenger cars and light trucks to meet a combined, per-mile carbon dioxide emissions level. It was estimated that by 2016, this GHG emissions limit could equate to an overall light-duty vehicle fleet average fuel economy of as much as 35.5 miles per gallon. The proposed standards would require model year 2016 vehicles to meet an estimated combined average emission level of 250 grams of carbon dioxide per mile under EPA's GHG program.

On November 16, 2011, EPA and NHTSA issued a joint proposal to extend the national program of harmonized GHG and fuel economy standards to model year (MY) 2017 through 2025 passenger vehicles. In August 2012, President Obama finalized standards that will increase fuel economy to the equivalent of 54.5 mpg for cars and light-duty trucks by MY 2025.

On January 12, 2017, EPA Administrator Gina McCarthy signed her determination to maintain the GHG emissions standards for model year MY 2022-2025 vehicles. Her final determination found that automakers are well positioned to meet the standards at lower costs than previously estimated.

On March 15, 2017, the new EPA Administrator Scott Pruitt and Department of Transportation Secretary Elaine Chao announced that EPA intended to reconsider the final determination, issued on January 12, 2017, that recommended no change to the greenhouse gas standards for light duty vehicles for model years 2022- 2025.

On April 2, 2018, the Administrator signed the Mid-term Evaluation Final Determination, which finds that the model year 2022-2025 greenhouse gas standards are not appropriate in light of the record before EPA and, therefore, should be revised.

On September 19, 2019, under the Safer, Affordable, Fuel-Efficient (SAFE) Vehicles Rule, the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHSTA) and the U.S.

---

44 U.S. Environmental Protection Agency. Rulemaking Notices for GHG Reporting. Available online at: https://www.epa.gov/ghgreporting/rulemaking-notices-ghg-reporting

EPA issued the final "One National Program Rule." The rule states that federal law preempts state and local laws regarding tailpipe GHG emissions standards, zero emissions vehicle mandates, and fuel economy for automobiles and light-duty trucks. The rule revokes California's Clean Air Act waiver and preempts California's Advanced Clean Car Regulations.

On September 20, 2019, a lawsuit was filed by California and a coalition of 22 other states, and the cities of Los Angeles, New York, and Washington, D.C., in the United States District Court for the District of Columbia (Case 1:19-cv-02826) challenging the SAFE Rule and arguing that EPA lacks the legal authority to withdraw the California waiver. On March 9th, 2022, the EPA reinstated California's authority under the Clean Air Act to implement its own greenhouse gas emission standards for cars and light trucks, which other states can also adopt and enforce.[45] In 2025, Congress passed resolutions under the Congressional Review Act seeking to overturn California's Advanced Clean Cars II waiver and related vehicle emissions waivers previously granted by the EPA. California and multiple other states subsequently filed legal challenges in response to these federal actions.

In accordance with the President's January 2025 "Unleashing American Energy" Executive Order and the Secretary's 2025"Fixing the CAFE Program" Memorandum, NHTSA published a Notice of Proposed Rulemaking, The Safer Affordable Fuel-Efficient (SAFE) Vehicle Rule III for Model Years 2022 through 2031 Passenger Cars and Light Trucks on June 6, 2025. The rule would revise federal Corporate Average Fuel Economy (CAFE) standards under the authority of the Energy Policy and Conservation Act of 1975, the Energy Independence and Security Act of 2007, and other applicable laws. The NHTSA is proposing to eliminate the inter-manufacturer credit trading system and to amend the light-duty vehicle fleet classification system to allocate vehicles into passenger and non-passenger automobile fleets, based on their attributes and capabilities, starting in MY 2028. NHTSA indicates that the amended standards would correspond to the industry fleetwide average for all light-duty vehicles of roughly 34.5 miles per gallon (mpg) in MY 2031.[46]

Heavy-Duty Vehicle Program

In May 2010, President Barack Obama issued a Presidential Memorandum Regarding Fuel Efficiency Standards, requesting that the U.S. EPA and National Highway Traffic Safety Administration (NHTSA) take additional coordinated steps to produce a new generation of clean vehicles. In response, U.S. EPA and

---

45 U.S. Environmental Protection Agency, EPA Restoration of California Waiver Will Support State Climate Action, Improve Air Quality, and Advance our Electric Vehicle Future. Available Online at: https://www.epa.gov/newsreleases/what-they-are-saying-epa-restoration-california-waiver-will-support-state-climate, accessed April 1, 2026.

46 National Highway Traffic Safety Administration, Corporate Average Fuel Economy, 2025. Available online at: https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy#75896, accessed April 1, 2026.

NHTSA adopted regulations governing Medium- and Heavy-Duty Greenhouse Gas Emissions and Fuel Efficiency (title 40, Code of Federal Regulations, Chapter I) on September 15, 2011 (most recently amended on August 16, 2013) to establish the first fuel efficiency requirements for medium- and heavy-duty vehicles beginning with the model year 2014 through model year 2018. On February 18, 2014, the President directed the U.S. EPA and NHTSA to set the next round of fuel efficiency standards for medium- and heavy-duty vehicles (beyond model year 2018) that will build on the existing standards to further reduce fuel consumption through the application of advanced cost-effective technologies and continue to improve the efficiency of moving goods across the United States. In October 2016, U.S. EPA and NHTSA adopted Phase 2 GHG and fuel efficiency standards for medium- and heavy-duty engines and vehicles. In March 2024, the EPA finalized a new set of multi-pollutant emissions standards for model year 2027 and later heavy-duty vehicles intended to further reduce criteria pollutant and greenhouse gas emissions from the trucking sector. However, federal greenhouse gas and fuel efficiency regulations for medium- and heavy-duty vehicles continue to evolve through administrative actions, litigation, and subsequent rulemaking efforts, which may affect future emissions forecasts and transportation conformity analyses.[47]

Clean Power Plan

In 2015, the U.S. EPA published the Clean Power Plan (80 Fed. Reg. 64661, October 23, 2015). The Clean Power Plan sets achievable standards to reduce CO_2 emissions by 32 percent from 2005 levels by 2030. This Plan establishes final emissions guidelines for states to follow in developing plans to reduce GHG emissions from existing fossil fuel-fired electric generating units (EGUs). Specifically, U.S. EPA is establishing: (1) CO_2 emission performance rates representing the best system of emission reduction (BSER) for two subcategories of existing fossil-fuel-fired EGUs, fossil-fuel-fired electric utility steam generating units and stationary combustion turbines; (2) state-specific CO_2 goals reflecting the CO_2 emission performance rates; and (3) guidelines for the development, submittal and implementation of state plans that establish emission standards or other measures to implement the CO_2 emission performance rates, which may be accomplished by meeting the state goals. This final rule would continue progress already underway in the United States to reduce CO_2 emissions from the utility power sector. On February 9, 2016, the Supreme Court (Order No. 15A773) stayed implementation of the Clean Power Plan pending judicial review.

---

47 U.S. Environmental Protection Agency, Final Rule: Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles. Available: https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-multi-pollutant-emissions-standards-model , accessed April 14, 2026.

As directed by Executive Order on Energy Independence, the U.S. EPA officially repealed the Clean Power Plan in June 2019 and issued the final Affordable Clean Energy rule in its place.[48]

Executive Order on Energy Independence

On March 28, 2017, President Donald Trump signed Executive Order 13783, "Promoting Energy Independence and Economic Growth," which called for:

- Review of the Clean Power Plan
- Review of the 2016 Oil and Gas New Source Performance Standards for New, Reconstructed, and Modified Sources
- Review of the Standards of Performance for GHG Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Generating Units
- Withdrawal of Proposed Rules: Federal Plan Requirements for GHG Emissions From Electric Utility Generating Units Constructed on or Before January 8, 2014; Model Trading Rules; Amendments to Framework Regulations; and Clean Energy Incentive Program Design Details

Affordable Clean Energy Rule

The U.S. EPA issued the Affordable Clean Energy (ACE) rule on June 19, 2019, in order to replace the Clean Power Plan. The ACE rule establishes emissions guidelines for states to use when developing plans to limit carbon dioxide at coal-fired power plants. Specifically, the ACE rule aims at improving the heat rate as the best system of emissions reductions for carbon dioxide at coal-fired power plants, and these improvements can be made at individual facilities. States will have three years to submit plans. The EPA estimates that the ACE rules will result in a reduction of CO2 emissions from the electricity sector by as much as 35% below 2005 levels by 2030.[49] On January 19, 2021, the D.C. Circuit vacated the Affordable Clean Energy rule and remanded it to the U.S. EPA for further proceedings consistent with its opinion. Because the ACE Rule's July 8, 2022, deadline passed while the rule was vacated by the D.C. Circuit, and because states had no reason to continue to work on their plans during the period when the ACE Rule was vacated, it was

---

48 U.S. Environmental Protection Agency, EPA Finalizes Affordable Clean Energy Rule, Ensuring Reliable, Diversified Energy Resources while Protecting the Environment, 2019. Available online at: https://www.bing.com/search?q=EPA+Finalizes+Affordable+Clean+Energy+Rule%2C+Ensuring+Reliable%2C+Diversified+Energy+Resources+while+Protecting+the+Environment&cvid=715e95acf42040369695afd4dc151b63&gs_lcrp=EgRlZGdlKgYIABBFGDkyBggAEEUYOTIGCAEQRRhAMggIAhDpBxj8VTIHCAMQ6wcYQNIBBzczNmowajSoAgiwAgE&FORM=ANAB01&PC=HCTS, accessed April 1, 2026.

49 U.S. Environmental Protection Agency, Affordable Clean Energy Rule. Available online at: https://www.epa.gov/stationary-sources-air-pollution/affordable-clean-energy-rule, accessed April 28, 2026.

necessary for the deadline for state plan submittal to be extended until April 15, 2024. By extending the deadline, this action made clear the U.S. EPA did not expect states to take immediate action to develop and submit plans under Clean Air Act section 111(d) with respect to greenhouse gas emissions from power plants at this time. In April 2024, the EPA finalized new greenhouse gas standards for fossil fuel-fired power plants, replacing the prior ACE framework with updated carbon pollution standards for certain existing coal-fired and new natural gas-fired power plants. In 2025, the EPA proposed repealing these greenhouse gas emissions standards, and federal regulation of greenhouse gas emissions from power plants continues to evolve through ongoing rulemaking and litigation.[50]

Federal Highway Administration's Climate Change and Extreme Weather Vulnerability Assessment Framework

Published in December 2012, the Climate Change and Extreme Weather Vulnerability Assessment Framework is a guidance document for transportation agencies to assess their vulnerability to climate change and extreme weather events. Objectives for a vulnerability assessment may include siting new assets in areas less vulnerable to climate change, educating staff regarding overall climate risks to the agency's transportation system, or informing the development of adaptation strategies. Based on these objectives, an agency can then select and characterize relevant assets and identify climate variables for study. The vulnerability assessment is an iterative process; information gathered on assets may inform climate information needs and vice versa.[51]

4.8.2.3 State

In response to growing scientific and political concern with global climate change, California adopted a series of laws to reduce emissions of GHGs into the atmosphere. As noted above, in response to recent federal actions seeking to rescind or weaken greenhouse gas regulations and California's Clean Air Act waiver authority, California and multiple other states have also filed legal challenges to preserve the State's authority to regulate vehicle emissions and implement climate policies. California has also continued implementation of State climate programs through CARB Scoping Plan updates, zero-emission vehicle requirements, low-carbon fuel standards, and coordination agreements with automakers and manufacturers to support continued reductions in vehicle-related GHG emissions. Given the evolving

---

50 U.S. Environmental Protection Agency. Greenhouse Gas Standards and Guidelines for Fossil Fuel-Fired Power Plants. Available online at: https://www.epa.gov/stationary-sources-air-pollution/greenhouse-gas-standards-and-guidelines-fossil-fuel-fired-power , accessed April 30, 2026.

51 U.S. Department of Transportation, The Federal Highway Administration's Climate Change & Extreme Weather Vulnerability Assessment Framework, December 2012. Available online at: https://rosap.ntl.bts.gov/view/dot/27118, accessed April 28, 2026

regulatory environment, future federal and state climate regulations and associated implementation measures may continue to change over time through administrative actions, legislation, and litigation.[52]

Coastal Act

The California Coastal Act of 1976 directs the California Coastal Commission (Coastal Commission) to protect and enhance the State's coastal resources. The Coastal Commission has planning, regulatory, and permitting authority over all development within the coastal zone, whose landward boundary varies with location. The Act governs coastal hazards for new development, mandating that it minimize risks to life and property in areas of high flood. New development must be located such that it will not be subject to erosion or stability hazard over the course of its design life, and construction of protective devices (e.g., seawalls, revetment) that substantially alter natural land forms along bluffs and cliffs are not permitted (Section 30253). The Coastal Commission's mandate extends to climate change, including sea level rise; however, the agency is currently assessing how best to address sea level rise and other challenges resulting from climate change. The Coastal Commission partners with local governments to form Local Coastal Programs (LCPs), transferring the power to regulate development within the coastal zone to cities and counties. Within the Bay Area, all of San Mateo, San Francisco, Marin, and Sonoma counties, along with the cities of Daly City, Pacifica and Half Moon Bay have certified LCPs. Any changes in the Coastal Commission's policies and/or regulations with respect to sea level rise may ultimately require revisions to LCPs.

Assembly Bill 1493 (AB 1493) (Pavley Regulations) - Vehicular Emissions Greenhouse Gas Emission Standards

In September 2002, AB 1493 (Chapter 200, Statutes of 2002) (referred to as Pavley I) was enacted, requiring the development and adoption of regulations to achieve "the maximum feasible reduction of greenhouse gases" emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the state by January 1, 2005. Pavley I took effect for model years starting in 2009 to 2016 and Pavley II, which is now referred to as "LEV (Low Emission Vehicle) III GHG" will cover 2017 to 2025 (13 Cal. Code Regs. Section 1900 *et seq.*). Fleet average emission standards were to reach a 22 percent reduction by 2012 and 30 percent by 2016.

---

52 California Air Resources Board (CARB). Current Litigation. Available online at: https://ww2.arb.ca.gov/current-litigation, accessed April 30, 2026.

Executive Order (EO) S-3-05

On June 1, 2005, EO S-3-05 set the following GHG emission reduction goals: reduce GHG emissions to 2000 levels by 2010; reduce GHG emissions to 1990 levels by 2020; and reduce GHG emissions to 80 percent below 1990 levels by 2050.[53] EO S-3-05 also calls for the Secretary of California Environmental Protection Agency (Cal/EPA) to be responsible for coordination of state agencies and progress reporting.

In response to the Executive Order, the Secretary of the Cal/EPA created the Climate Action Team (CAT). California's CAT originated as a coordinating council organized by the Secretary for Environmental Protection. It included the Secretaries of the Natural Resources Agency, and the Department of Food and Agriculture, and the Chairs of the Air Resources Board, Energy Commission, and Public Utilities Commission. The original council was an informal collaboration between the agencies to develop potential mechanisms for reductions in GHG emissions in the state. The council was given formal recognition in Executive Order S-3-05 and became the CAT.

The original mandate for the CAT was to develop proposed measures to meet the emission reduction targets set forth in the executive order. The CAT has since expanded and currently has members from 18 state agencies and departments.

The CAT is responsible for preparing reports that summarize the state's progress in reducing GHG emissions. The most recent CAT State Agency Greenhouse Gas Reduction Report Card was published in 2020. The Report Card documents the effectiveness of measures to reduce GHG emissions in California and GHG emissions from State agencies' operations.

Assembly Bill 32 (AB 32)

The California Global Warming Solutions Act of 2006 (AB 32) was signed into law in September 2006 after considerable study and expert testimony before the Legislature. The law instructs CARB to develop and enforce regulations for the reporting and verifying of statewide GHG emissions. AB 32 directed CARB to set a GHG emission limit based on 1990 levels, to be achieved by 2020. AB 32 set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.[54] See the **2022 Scoping Plan for Achieving Carbon Neutrality** subsection below.

---

53 While EO S-3-05 sets a goal that Statewide GHG emissions be reduced to 80 percent below 1990 levels by 2050, the EO does not constitute a "plan" for GHG reduction, and no State plan has been adopted to achieve the 2050 goal.

54 Office of Legislative Counsel of California, *The California Global Warming Solutions Act of 2006 (AB 32)*, 2006.

The heart of AB 32 is the requirement to reduce statewide GHG emissions to 1990 levels by 2020. AB 32 required CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. CARB accomplished the key milestones set forth in AB 32, including the following:

- **June 30, 2007**. Identification of discrete early action GHG emissions reduction measures. On June 21, 2007, CARB satisfied this requirement by approving three early action measures.[55] These were later supplemented by adding six other discrete early action measures.[56]

- **January 1, 2008**. Identification of the 1990 baseline GHG emissions level, approval of a statewide limit equivalent to that level, and adoption of reporting and verification requirements concerning GHG emissions. On December 6, 2007, CARB approved a statewide limit on GHG emissions levels for the year 2020 consistent with the determined 1990 baseline.[57]

- **January 1, 2009**. Adoption of a scoping plan for achieving GHG emission reductions. On December 11, 2008, CARB adopted Climate Change Scoping Plan: A Framework for Change (Scoping Plan).[58]

- **January 1, 2010.** Adoption and enforcement of regulations to implement the "discrete" actions. Several early action measures have been adopted and became effective on January 1, 2010. [59,60]

- **January 1, 2011**. Adoption of GHG emissions limits and reduction measures by regulation. On October 28, 2010, CARB released its proposed cap-and-trade regulations, which would cover sources of approximately 85 percent of California's GHG emissions.[61] CARB's Board ordered its Executive Director to prepare a final regulatory package for cap-and-trade on December 16, 2010.[62]

- **January 1, 2012.** GHG emissions limits and reduction measures adopted in 2011 became enforceable.

---

55 CARB, *Consideration of Recommendations for Discrete Early Actions for Climate Change Mitigation in California*, 2007.

56 CARB, *Public Meeting to Consider Approval of Additions to the List of Early Action Measures to Reduce Greenhouse Gas Emissions under the California Global Warming Solutions Act of 2006 and to Discuss Concepts for Promoting and Recognizing Voluntary Early Actions*, 2007.

57 CARB, *California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit*, 2007.

58 CARB, *Climate Change Scoping Plan*, 2008.

59 CARB, *Consideration of Recommendations for Discrete Early Actions for Climate Change Mitigation in California*, 2007.

60 CARB, *Public Meeting to Consider Approval of Additions to the List of Early Action Measures to Reduce Greenhouse Gas Emissions under the California Global Warming Solutions Act of 2006 and to Discuss Concepts for Promoting and Recognizing Voluntary Early Actions*, 2007.

61 CARB, *Cap and Trade 2010*, 2011.

62 CARB, *California Cap-and-Trade Program, Resolution 10-42*, 2010.

CARB Early Action Measures

CARB is responsible for carrying out and developing the programs and requirements necessary to achieve the goals of AB 32—the reduction of California's GHG emissions to 1990 levels by 2020. The first action under AB 32 resulted in CARB's adoption of three early action greenhouse gas emission reduction measures on June 21, 2007. On October 25, 2007, CARB approved an additional six early action GHG reduction measures under AB 32. CARB has adopted regulations for all early action measures. The early action measures are divided into three categories:

- Group 1 - GHG rules for immediate adoption and implementation;
- Group 2 - Several additional GHG measures under development; and
- Group 3 - Air pollution controls with potential climate co-benefits.

The original three adopted early action regulations meeting the narrow legal definition of "discrete early action GHG reduction measures" include:

- A low-carbon fuel standard to reduce the "carbon intensity" of California fuels;
- The reduction of refrigerant losses from motor vehicle air conditioning system maintenance to restrict the sale of "do-it-yourself" automotive refrigerants; and
- Increased methane capture from landfills to require broader use of state-of-the-art methane capture technologies.

The additional six early action regulations adopted on October 25, 2007, also meeting the narrow legal definition of "discrete early action GHG reduction measures," include:

- The reduction of aerodynamic drag, and thereby fuel consumption, from existing trucks and trailers through retrofit technology;
- The reduction of auxiliary engine emissions of docked ships by requiring port electrification;
- The reduction of perfluorocarbons from the semiconductor industry;
- The reduction of propellants in consumer products (e.g., aerosols, tire inflators, and dust removal products);
- The requirement that all tune-up, smog check and oil change mechanics ensure proper tire inflation as part of overall service in order to maintain fuel efficiency; and

- The restriction on the use of sulfur hexafluoride from non-electricity sectors if viable alternatives are available.

Scoping Plan Updates

The Scoping Plan is the most recent GHG reduction roadmap developed and updated by CARB at least once every five years, as initially required by AB 32. It lays out the transformations needed across various sectors to reduce GHG emissions and reach the State's climate targets. CARB adopted the Final 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan Update) in December 2022 as the third update to the initial plan that was adopted in 2008. The initial 2008 Scoping Plan laid out a path to achieve the AB 32 target of returning to 1990 levels of GHG emissions by 2020, a reduction of approximately 15 percent below business-as-usual activities.[63] The 2008 Scoping Plan included a mix of incentives, regulations, and carbon pricing, laying out the portfolio approach to addressing climate change and clearly making the case for using multiple tools to meet California's GHG targets. The 2013 Scoping Plan Update (adopted in 2014) assessed progress toward achieving the 2020 target and made the case for addressing short-lived climate pollutants (SLCPs).[64] The 2017 Scoping Plan Update,[65] shifted focus to the newer SB 32 goal of a 40 percent reduction below 1990 levels by 2030 by laying out a detailed, cost-effective, and technologically feasible path to this target, and also assessed progress towards achieving the AB 32 goal of returning to 1990 GHG levels by 2020. The 2020 goal was ultimately reached in 2016, four years ahead of the schedule called for under AB 32.

The 2022 Scoping Plan Update is the most comprehensive and far-reaching Scoping Plan developed to date. It identifies a technologically feasible, cost-effective, and equity-focused path to achieve new targets for carbon neutrality by 2045 and to reduce anthropogenic GHG emissions to at least 85 percent below 1990 levels, while also assessing the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan. The 2030 target is an interim but important stepping stone along the critical path to the broader goal of deep decarbonization by 2045. The relatively longer path assessed in the 2022 Scoping Plan Update incorporates, coordinates, and leverages many existing and ongoing efforts to reduce GHGs and air pollution, while identifying new clean technologies and energy. The 2022 Scoping Plan Update is set apart from previous iterations due to the focus on the accelerated deployment of clean technology and energy within every sector. Unlike previous Scoping Plans that separated out individual economic sectors, the 2022 Scoping Plan Update approaches decarbonization from two perspectives: (1) managing a phasedown of existing

63 CARB, Climate Change Scoping Plan, 2008.
64 CARB, First Update to the Climate Change Scoping Plan, 2014.
65 CARB, California's 2017 Climate Change Scoping Plan, 2017. Available online at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf, accessed April 1, 2026.

energy sources and technology and (2) ramping up, developing, and deploying alternative clean energy sources and technology over time through transportation sustainability and a reduction in vehicle miles traveled, a clean electricity grid that encourages the electrification of fleet vehicles, and sustainable manufacturing and buildings through decarbonization.[66] Given the focus on carbon neutrality, the 2022 Scoping Plan Update also includes discussion for the first time of the natural and working lands sectors as sources for both sequestration and carbon storage, and as sources of emissions as a result of wildfires.

Aligning local jurisdiction action with state-level priorities to tackle climate change and the outcomes called for in the 2022 Scoping Plan Update is identified as critical to achieving the statutory targets for 2030 and 2045. The 2022 Scoping Plan Update discusses the role of local governments in meeting the State's GHG reduction goals.[67] Local governments have the primary authority to plan, zone, approve, and permit how and where land is developed to accommodate population growth, economic growth, and the changing needs of their jurisdictions. They also make critical decisions on how and when to deploy transportation infrastructure, and can choose to support transit, walking, bicycling, and neighborhoods that do not force people into cars. Local governments also have the option to adopt building ordinances that exceed statewide building code requirements and play a critical role in facilitating the rollout of zero-emission vehicle (ZEV) infrastructure. As a result, local government decisions play a critical role in supporting state-level measures to contain the growth of GHG emissions associated with the transportation system and the built environment—the two largest GHG emissions sectors over which local governments have authority.

The 2022 Scoping Plan Update also identifies multiple legal tools open to local jurisdictions to support statewide priorities, including development of a climate action plan (CAP), sustainability plan, or inclusion of a plan for reduction of GHG emissions and climate actions within a jurisdiction's general plan.

Senate Bill 1 (SB 1)

SB 1 (2006) (Chapter 132, Statutes of 2006) set a goal to install 3,000 megawatts of new solar capacity by 2017, moving the state toward a cleaner energy future and helping lower the cost of solar systems for consumers. The "Million Solar Roofs" Program is a ratepayer-financed incentive program aimed at transforming the market for rooftop solar systems by driving down costs over time. It provides up to $3.3 billion in financial incentives that decline over time.

---

66 CARB, *2022 Scoping Plan for Achieving Carbon Neutrality*, 2022. Available online at: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf, accessed April 1, 2026.

67 CARB, *2022 Scoping Plan for Achieving Carbon Neutrality*, 2022. Available online at: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf, accessed July 5, 2024.

California Cap-and-Trade Program

Authorized by the California Global Warming Solutions Act of 2006 (AB 32), the Cap-and-Trade Program is a core strategy that California is using to meet its statewide GHG reduction targets for 2020 and 2030, and ultimately achieve an 80 percent reduction from 1990 levels by 2050. Pursuant to its authority under AB 32, CARB has designed and adopted a California Cap-and-Trade Program to reduce GHG emissions from major sources (deemed "covered entities") by setting a firm cap on statewide GHG emissions and employing market mechanisms to achieve AB 32's emission-reduction mandate of returning to 1990 levels of emissions by 2020 (17 CCR Sections 95800 to 96023).

In September 2012, CARB adopted a California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms, which established the cap-and-trade program to manage GHG emissions in California. The cap-and-trade program is a market-based approach wherein the government determines an overall emission target, or "cap," for a particular set of facilities. The cap is the total amount of emissions that all of the facilities can produce. Tradable emissions allowances totaling the overall emissions cap are distributed by auction or given out amongst a particular set of facilities. The emissions allowances can be traded among the facilities.

Under the Cap-and-Trade Program, an overall limit is established for GHG emissions from capped sectors (e.g., electricity generation, petroleum refining, cement production, and large industrial facilities that emit more than 25,000 metric tons CO_2e per year) and declines over time, and facilities subject to the cap-and-trade permits to emit GHGs. The statewide cap for GHG emissions from the capped sectors commenced in 2013 and declines over time, achieving GHG emission reductions throughout the program's duration (see generally 17 CCR Sections 95811, 95812). On July 17, 2017, the California Legislature passed Assembly Bill 398, extending the Cap-and-Trade Program through 2030.

The cap-and-trade regulation provides a firm cap, helping to ensure that the 2020 and 2030 statewide emission limits will not be exceeded. An inherent feature of the Cap-and-Trade Program is that it does not direct GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are ensured on a state-wide basis.

Executive Order B-16-12

On March 23, 2012, Governor Brown issued Executive Order B-16-2012 to encourage zero-emission vehicles (ZEVs) and related infrastructure. It orders CARB, CEC, CPUC, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks concerning ZEVs. By 2020, the state's ZEV infrastructure should support up to one million vehicles. By 2025, Executive Order B-16-2012 aims to put over 1.5 million ZEVs on California roads and displace at least

1.5 billion gallons of petroleum. The Executive Order also directs state governments to begin purchasing ZEVs. In 2015, 10 percent of state departments' light-duty fleet purchases must be ZEVs, climbing to 25 percent of light-duty fleet purchases by 2020. Executive Order B-16-2012 sets a target for 2050 to reduce GHG emissions in the transportation sector by 80 percent below 1990 levels.

Senate Bill 32 (SB 32)

In 2016, the Legislature passed Senate Bill (SB) 32 with the companion bill AB 197, which further requires California to reduce GHG emissions to 40 percent below 1990 levels by 2030. The bill targets reductions from the leading GHG emitters in the state. Transportation is the largest sector of GHG emissions in California and will be a primary subject for reductions. Through advances in technology and improved public transportation, the State plans to reduce GHG emissions from transportation sources to assist in meeting the 2030 reduction goal. AB 197, signed September 8, 2016, is a bill linked to SB 32 and signed on September 8, 2016, that prioritizes efforts to cut GHG emissions in low-income or minority communities. AB 197 requires CARB to make available, and update at least annually, on its website the emissions of GHGs, criteria pollutants, and toxic air contaminants for each facility that reports to CARB and air districts. In addition, AB 197 adds two Members of the Legislature to the CARB board as ex officio, non- voting members and creates the Joint Legislative Committee on Climate Change Policies to ascertain facts and make recommendations to the Legislature and the houses of the Legislature concerning the State's programs, policies, and investments related to climate change.

Assembly Bill (AB) 1279

AB 1279 establishes the policy of the State to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045, statewide anthropogenic GHG emissions are reduced at least 85 percent below 1990 levels. The bill requires CARB to ensure that Scoping Plan updates identify and recommend measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable CO_2 removal solutions and carbon capture, utilization, and storage (CCUS) technologies. This bill is reflected directly in the 2022 Scoping Plan described previously.

California Environmental Quality Act Guidelines Amendments

California Senate Bill (SB) 97 (Chapter 185, Statutes of 2007) required the Governor's Office of Planning and Research (OPR) to develop California Environmental Quality Act (CEQA) Guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions." The *CEQA Guidelines* amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The significance of GHG emissions is specifically addressed in *State CEQA Guidelines*

Section 15064.4. Section 15064.4 calls for a lead agency to make a "good-faith effort" to "describe, calculate or estimate" GHG emissions in CEQA environmental documents. Section 15064.4 further states that the analysis of GHG impacts should include consideration of (1) the extent to which the project may increase or reduce GHG emissions; (2) whether the project emissions would exceed a locally applicable threshold of significance; and (3) the extent to which the project would comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions." The guidelines also state that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of GHG emissions) that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (*State CEQA Guidelines* Section 15064(h)(3)).

Senate Bill 375 (SB 375)

SB 375, adopted in 2008, builds on AB 32, as SB 375 (Chapter 728, Statutes of 2008) seeks to coordinate land use planning, housing planning, regional transportation planning, and GHG reductions. By coordinating these efforts, it is envisioned that vehicle congestion and travel can be reduced, resulting in a corresponding reduction in emissions. SB 375 directed CARB to set regional targets to reduce emissions; regional transportation plans are required to identify how they will meet these targets.

SB 375 has three major components:

- Using the regional transportation planning process to achieve reductions in emissions consistent with AB 32's goals.
- Offering California Environmental Quality Act (CEQA) incentives to encourage projects that are consistent with a regional plan that achieves emissions reductions.
- Coordinating the Regional Housing Needs Assessment (RHNA) process with the regional transportation process while maintaining local authority over land use decisions.

A Sustainable Communities Strategy (SCS) is a required component of the RTP. The SCS is a land use pattern for the region that, in combination with transportation policies and programs, strives to reduce emissions and help meet CARB's targets for the region. An alternative planning strategy (APS) must be prepared if the SCS is unable to reduce emissions and achieve the emissions reduction targets established by CARB.

Certain transportation planning and programming activities must be consistent with the SCS; however, SB 375 expressly provides that the SCS does not regulate the use of land, and further provides that local land use plans and policies (e.g., general plans) are not required to be consistent with either the RTP or SCS. Beginning October 1, 2018, CARB set reduction targets for Kern COG at 9 percent for 2020 and 15 percent for 2035.[68]

Senate Bill 1078, Senate Bill 107, SB 100, Executive Order S-14-08, and Executive Order S-21-09 (Renewables Portfolio Standard) and Executive Order B-55-18 (to Achieve Carbon Neutrality)

On September 12, 2002, Governor Gray Davis signed SB 1078 (Chapter 516, Statutes of 2002) requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 (Chapter 464, Statutes of 2006), signed by the Governor on September 26, 2006, changed the due date for this goal from 2017 to 2010. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewables Portfolio Standard goal for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Increased use of renewable energy sources will decrease California's reliance on fossil fuels, reducing emissions of GHGs from the energy sector. In April 2011, SB X1-2 required that all electricity retailers adopt the new RPS goals providing 20 percent renewable sources by the end of 2013, 25 percent by the end of 2016, and 33 percent by the end of 2020. Senate Bill SB 350 of 2015 (Chapter 547, Statutes of 2015) increased the renewable portfolio standard to 50 percent by the year 2030.

Executive Order S-21-09 directs CARB to adopt regulations to increase California's Renewables Portfolio Standard (RPS) to 33 percent by 2020. The target was signed into law as SB 2 by Governor Brown in April 2011. This builds upon SB 1078 (2002), which established the California RPS program, requiring 20 percent renewable energy by 2017, and SB 107 (2006), which advanced the 20 percent deadline to 2010.

On September 10, 2018, SB 100, the 100 Percent Clean Energy Act of 2018, was signed by Governor Jerry, the same day he issued EO B-55-18. SB 100 accelerates the goals of RPS and sets a state policy that eligible renewable energy and zero-carbon resources supply 100 percent of all retail sales of electricity by 2045. Likewise, EO B-55-18 established a statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Furthermore:

> *The goal of the [RPS] program is to achieve that 50% renewable resources target by December 31, 2026, and to achieve a 60% target by December 31, 2030. The bill would require that retail sellers*

---

68 CARB, SB 375 Regional Plan Climate Targets. Available online at: https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets, accessed April 2, 2026.

and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieve 44% of retail sales by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030.[69]

Executive Order (EO) S-01-07, the Low Carbon Fuel Standard

On January 18, 2007, EO S-01-07 was issued, establishing a statewide goal to reduce at least 10 percent in the carbon intensity of California's transportation fuels by 2020. Regulatory proceedings and implementation of the Low Carbon Fuel Standard have been directed to the California Air Resources Board (CARB). CARB identified the Low Carbon Fuel Standard (LCFS) as a Discrete Early Action item under AB 32, and the final resolution (09-31) was issued on April 23, 2009.[70] In 2009, CARB approved for adoption the LCFS regulation, which became fully effective in April 2010 and is codified at Title 17, California Code of Regulations (CCR), Sections 95480-95490. The LCFS reduced GHG emissions by reducing the carbon intensity of transportation fuels used in California by 10% between 2011 and 2020. In 2018, CARB approved amendments to LCFS regulations, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero-emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

Executive Order S-13-08

Executive Order S-13-08, signed on November 14, 2008, directs California to develop methods for adapting to climate change impacts through preparation of a statewide plan. In response to this order, the California Natural Resources Agency coordinated with 10 state agencies, multiple scientists, a consulting team, and stakeholders to develop the first statewide, multi-sector adaptation strategy in the country. The resulting report, *2009 California Climate Adaptation Strategy*[71,72] summarizes the best-known science to assess the vulnerability of the state to climate change impacts, and outlines possible solutions that can be

---

69 California Legislative Information, Senate Bill No. 100. Available online at: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB100, accessed April 15, 2022.

70 CARB, *Initial Statement of Reasons for Proposed Regulation for the Management of High Global Warming Potential Refrigerants for Stationary Sources*, 2009.

71 California Natural Resources Agency, *2009 California Climate Adaption Strategy.* 2009.

72 This report has been updated thrice, once in 2014, once in 2018, and once in 2024 to reflect current adaption strategies and incorporate a "Climate Justice" chapter highlighting how equity is woven throughout the entire plan.

implemented within and across state agencies to promote resiliency. This strategy is the first step in an evolving process to reduce California's vulnerability to climate change impacts.

Adaptation refers to efforts that prepare the state to respond to the impacts of climate change – adjustments in natural or human systems to actual or expected climate changes to minimize harm or take advantage of beneficial opportunities. California's ability to manage its climate risks through adaptation depends on a number of critical factors. These include its baseline and projected economic resources, technology, infrastructure, institutional support, effective governance, public awareness, access to the best available scientific information, sustainably managed natural resources, and equity in access to these resources.

California's Energy Efficiency Standards for Residential and Nonresidential Buildings

California established statewide building energy standards following legislative action. The legislation required the standards to:

- Be cost effective;
- Be based on the building life cycle; and
- Include both prescriptive and performance-based approaches.

The standards have been periodically updated as technology and design have evolved. Generally, the standards are updated every three years. As a result of AB 970, passed in the fall of 2000 in response to the state's electricity crisis, an emergency update of the Standards went into effect in June 2001. The Commission then initiated an immediate follow-on proceeding to consider and adopt updated Standards that could not be completed during the emergency proceeding. The 2005 Building Energy Efficiency Standards were adopted in November 2003 and took effect on October 1, 2005. The latest amendments were made in June 2015 and went into effect on January 1, 2017.

Title 24 of the California Code of Regulations comprises the state Building Standards Code. Part 6 of Title 24 is the California Energy Code, which includes the building energy efficiency standards. The standards include provisions applicable to all buildings, residential and non-residential, which describe requirements for documentation and certificates that the building meets the standards. These provisions include mandatory requirements for efficiency and design of the following types of systems, equipment, and appliances:

- Air conditioning systems
- Heat pumps
- Water chillers
- Gas- and oil-fired boilers

- Cooling equipment
- Water heaters and equipment
- Pool and spa heaters and equipment
- Gas-fired equipment including furnaces and stoves/ovens
- Windows and exterior doors
- Joints and other building structure openings (envelope)
- Insulation and cool roofs
- Lighting control devices.

The standards include additional mandatory requirements for space conditioning (cooling and heating), water heating, and indoor and outdoor lighting systems and equipment in non-residential, high-rise residential, and hotel or motel buildings.

In May 2018, the California Energy Commission voted unanimously, 5-0, to recommend energy efficiency standards to be added to state building regulations later in 2018, affecting all construction after Jan. 1, 2020. The rules will make California the first state in the nation to require solar panels on new homes.

California Green Building Code

The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the California Department of Housing and Community Development in 2008. The purpose of this code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices, including recycling of construction (diversion of 50 percent) and other waste streams.

The California Energy Code (California Code of Regulations, Title 24, Section 6) was created as part of the California Building Standards Code (Title 24 of the California Code of Regulations) by the California Building Standards Commission in 1978 to establish statewide building energy-efficiency standards to reduce California's energy consumption. These standards include provisions applicable to all buildings, residential and nonresidential, which describe requirements for documentation and certificates that the building meets the standards. These provisions include mandatory requirements for efficiency and design of energy systems, including space conditioning (cooling and heating), water heating, indoor and outdoor lighting systems and equipment, and appliances. California's Building Energy Efficiency Standards are updated on an approximately 3-year cycle as technology and methods have evolved. The 2025 Standards,

effective January 1, 2026, focus on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings, and include requirements that will enable both demand reductions during critical peak periods and future solar electric and thermal system installations.

Assembly Bill 811 (AB 811)

AB 811 (2008) (Chapter 811, Statutes of 2008) authorizes California cities and counties to designate districts within which willing property owners may enter into contractual assessments to finance the installation of renewable energy generation and energy efficiency improvements that are permanently fixed to the property. These financing arrangements would allow property owners to finance renewable generation and energy efficiency improvements through low-interest loans that would be repaid as an item on the property owner's property tax bill.

Senate Bill 350

Known as the Clean Energy and Pollution Reduction Act of 2015, SB 350 (Chapter 547, Statutes of 2015) was approved by Governor Brown on October 7, 2015. SB 350 will: (1) increase the standards of the California RPS program by requiring that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030; (2) require the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030; and (3) provide for the evolution of the Independent System Operator (ISO) into a regional organization;. Among other objectives, the Legislature intends to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

SB 1383 - Short Lived Climate Pollutants

Short-lived climate pollutants (SLCP) SLCPs include black carbon (soot), methane, and fluorinated gases (F-gases). SB 1383 of 2016 (Chapter 395, Statutes of 2016) sets forth legislative direction for control of SLCPs. It requires CARB, no later than January 1, 2018, to approve and begin implementing its SLCP strategy to achieve the following reductions in emissions by 2030 compared to 2013 levels: methane by 40 percent, hydrofluorocarbons by 40 percent, and black carbon (non-forest) by 50 percent. The bill also specifies targets for reducing organic waste in landfills. SB 1383 also requires CARB to adopt regulations to be implemented on or after January 1, 2024, specific to the dairy and livestock industry, requiring a 40 percent reduction in methane emissions below 2013 levels by 2030, if certain conditions are met. Lastly, the bill

requires CalRecycle to adopt regulations to take effect on or after January 1, 2022, to achieve specified targets for reducing organic waste in landfills. In March of 2017, the Short-Lived Climate Pollutant Reduction Strategy was approved by the CARB; the Strategy was incorporated into the 2017 Climate Change Scoping Plan.[73] The Strategy places emphasis on early actions, often supported by public investments and strong policy incentives to achieve the proposed reductions in SLCPs.

California Department of Public Health Guidance on Integrating Public Health into Climate Action Planning

In February of 2012, the California Department of Public Health released a guidance document, Climate Action for Health: Integrating Public Health into Climate Action Planning.[74] This document introduces key health connections to climate change mitigation strategies and suggestions for where these fit into a local climate action plan or general plan. The guidance document also provides a number of examples of strategies taken from actual climate action plans that integrate public health objectives, with policy efforts to improve community health and reduce GHG emissions. The information provided is advisory, voluntary, and educational. The document includes specific policy recommendations for transportation and land use planning, including incorporation of green space and tree canopy to mitigate urban heat islands, and healthy siting of housing, schools, and health care facilities to avoid major air quality impacts.

4.8.2.4 Regional and Local

San Joaquin Valley Air Pollution Control District

To assist Lead Agencies, project proponents, permit applicants, and interested parties in assessing and reducing project-specific GHG impacts on global climate change, the San Joaquin Valley Air Pollution Control District (SJVAPCD) has adopted the guidance: *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* and the policy: *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. The guidance and policy rely on the use of performance-based standards, otherwise known as Best Performance Standards (BPS), to assess the significance of project-specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA. Use of BPS is a method of streamlining the CEQA

---

73 California Environmental Protection Agency, California Air Resources Board, Short-Lived Climate Pollutant Reduction Strategy, March 2017. Available online at: https://ww2.arb.ca.gov/sites/default/files/2020-07/final_SLCP_strategy.pdf, accessed April 2, 2026.

74 California Department of Public Health. 2012. Climate Action for Health: Integrating Public Health into Climate Action Planning. Available online at: https://www.cdph.ca.gov/Programs/OHE/CDPH%20Document%20Library/CCHEP-General/CDPH-2012-Climate-Action-for-Health_accessible.pdf, accessed April 2, 2026.

process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual, is required to determine that a project would have a less than cumulatively significant impact. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining the significance of project-related impacts on global climate change.

Eastern Kern Air Pollution Control District

The Eastern Kern Air Pollution Control District (EKAPCD) has also adopted guidance for assessing GHG emissions under CEQA, titled *Addendum to CEQA Guidelines Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency.* The addendum essentially incorporates the guidelines produced by the SJVAPCD as guidance for the EKAPCD. EKAPCD also has general CEQA guidelines, but they were last updated in 1999 and do not provide guidance for GHG emissions. The guidelines for stationary projects describe how the EKAPCD does not anticipate being the lead agency for GHG review for projects other than stationary sources. It goes on to state that EKAPCD should follow an approach to GHG emissions similar to the SJVAPCD guidelines.

As the two largest jurisdictions and the ones likely to experience the greatest impacts, general plan policies from the Kern County General Plan and the Bakersfield General Plan are discussed below. Other cities have similar policies.

RTP Congestion Management Program

Federal law requires MPOs to take into consideration congestion's impact on system performance while considering alternative transportation strategies to alleviate those impacts. Kern COG has integrated the Congestion Management Program Action Element in Chapter 5, Strategic Investments, of the 2026 RTP. The program provides an innovative mechanism to address congestion through corridor planning when congestion levels exceed the adopted standard. The corridor planning includes alternative strategies such as complete streets and multi-modal level of service to address congestion impacts.

Kern COG Project Delivery Policy and Procedures

In 2023, Kern COG updated the Performance-Based Project Delivery Policy and Procedures.[75] The document provides guidance to local government agencies in Kern County for obtaining transportation

---

75 Kern Council of Governments Project Delivery Policies and Procedures, Updated May 2023. Available online at: https://www.kerncog.org/wp-content/uploads/2012/12/Draft_2023_PIP.pdf, accessed April 2, 2026.

program funds administered by the Kern Council of Governments (KCOG) in partnership with state and federal agencies.

Kern County General Plan

The goals and implementation measures in the Kern County General Plan that are applicable to GHG emissions are as follows:

- Satisfy the trip reduction and travel demand requirements of the Kern Council of Governments' Congestion Management Program.
- Coordinate congestion management and air quality requirements and avoid multiple and conflicting requirements.
- The elements within the Kern Congestion Management Program are to be implemented by each incorporated city and the County of Kern. Specifically, the land use analysis program, including the preparation and adoption of deficiency plans, is required. Additionally, the adoption of trip reduction and travel demand strategies is required in the Congestion Management Program.

Bakersfield General Plan

The policies included in the Bakersfield General Plan that are applicable to GHG emissions are as follows:

- Participate in alternative fuel programs.
- Participate in regional air quality studies and comprehensive programs for air pollution reduction.
- Promote public education regarding air quality issues and alternative transportation (I-4).
- Implement the Transportation System Management Program (July 1984) for Metropolitan Bakersfield to improve traffic flow, reduce vehicle trips, and increase street capacity.
- Encourage the use of mass transit, carpooling, and other transportation options to reduce vehicle miles traveled.
- Consider establishing priority parking areas for carpoolers in projects with relatively large numbers of employees to reduce vehicle miles traveled and improve air quality.
- Establish park and ride facilities to encourage carpooling and the use of mass transit.

- Promote the use of bicycles by providing attractive bicycle paths and requiring provision of storage facilities in commercial and industrial projects.

- Cooperate with Golden Empire Transit and Kern Regional Transit to provide a comprehensive mass transit system for Bakersfield; require large-scale new development to provide related improvements, such as bus stop shelters and turnouts.

- Encourage walking for short distance trips through the creation of pedestrian-friendly sidewalks and street crossings.

- Promote a pattern of land uses which locates residential uses in close proximity to employment and commercial services to minimize vehicular travel.

- Provide the opportunity for the development of residential units in concert with commercial uses.

- Disperse urban service centers (libraries, post offices, social services, etc.) to minimize vehicle trips and trip miles traveled and concomitant air pollutants.

Taft Climate Action Plan

The GHG reduction measures included in the Taft Climate Action Plan[76] are as follows:

- Upgrade and expand the City's pedestrian network to encourage residents and visitors to walk and bike to and from School and work, and along major corridors. This may involve increasing the number of bike paths, widening sidewalks, or resurfacing existing bike lanes to make it safer for bicyclists.

- Encourage infill development in the existing urban areas to reduce vehicle miles traveled and promote active transportation, including through the use of incentives as appropriate. Developing areas in and near downtown on existing underdeveloped or undeveloped sites, including those on the Adequate Sites list in the 2015 Housing Element, prevents sprawl and can reduce transportation-related emissions.

- Develop a network of complete streets that supports all transportation modes and users. All residents and visitors should be able to walk and bike in Taft. Developers should integrate complete streets into their designs to ensure that sidewalks, landscaping, and the safety of users are top priorities.

---

76 City of Taft, *2017 Climate Action Plan*. March 2017.

- Encourage mixed-use development that promotes live/work and pedestrian and bike trips in the downtown, especially on sites identified as adequate for increased housing development in the 2015 Housing Element.

- Increase bicycle ridership for commuting and recreational activities throughout the community by providing adequate bike parking and safe bike routes. The bike ridership commute rate in Taft is currently between 0.4 percent and 0.7 percent.

- Use shared parking strategies to maximize development potential while providing a sufficient supply of 24-hour parking. This approach ensures a more efficient use of private and City-owned parking lots and street parking, especially around the downtown area. Shared parking can lead to a reduction in vehicle miles traveled if visitors and residents are encouraged to carpool or take other forms of transportation because parking is more limited.

- Increase transit ridership to minimize congestion, improve air quality, and promote increased mobility. The City can implement, and partner with regional organizations to implement, programs that encourage residents and businesses to use public transportation. The public transit commute rate in Taft is currently 2.4 percent.

- Promote carshare options to Taft employers to reduce commute-related greenhouse gas emissions. Carsharing can lead to fewer vehicles on the road.

- Transportation demand management (TDM) is a suite of strategies intended to reduce the amount of single-occupancy vehicle trips generated and vehicle miles traveled, particularly during peak commute times. TDM can include increased use of public transit, non-motorized transportation, carpools and ridesharing, and telecommuting, among other strategies. The City can work with major employers, including the Taft Federal Correctional Institution, to minimize vehicle miles traveled, reduce commute-related trips, and replace gasoline-powered vehicles with alternative fuel vehicles.

- Investigate opportunities to synchronize traffic signals along major roadways to reduce traffic idling. This may involve signal timing that favors public transit (e.g., buses) while increasing the safety of pedestrians and bicyclists.

- Increasing electric vehicle (EV) adoption in Taft can reduce GHG emissions, increase public health, and save drivers money. Taft can improve the adoption of EVs and plug-in electric vehicles (PHEVs) among city residents by promoting these vehicles through media and in-person events and by using EVs and PHEVs in the City fleet.

- Increase the use of alternative fuel-powered vehicles in the community, including identifying the need and opportunity to create a facility that generates biofuel from used cooking oil, which can help increase the percentage of alternative fuel vehicles driven by Taft residents and businesses. Taft can also promote alternative fuel vehicles by incorporating them into its fleet, installing refueling stations, and educating business owners about financial and environmental benefits.

- Enable autonomous vehicle operation in Taft to improve mobility and increase traffic efficiency. As semiautonomous and fully autonomous vehicles become more common, monitor their performance and explore ways to modify street and parking infrastructure to improve effectiveness.

- Expand the number of solar energy systems on new and existing single-family homes and multifamily developments. The addition of small-scale renewable energy systems to existing and new single- and multifamily residences can often meet (and even exceed) the energy needs for the home. Extra energy can be sold back to the grid, which helps reduce the amount of energy needed from nonrenewable sources and can help the homeowner finance the project. New developments that are constructed to easily facilitate the inclusion or addition of renewable systems can save the homeowner money on related infrastructure.

- Expand the number of solar energy systems on new and existing nonresidential buildings. The addition of distributed-generation renewable energy systems to nonresidential buildings may help reduce the amount of energy from nonrenewable sources that the building requires, and in some cases may exceed the amount of electricity needed. New construction that is built to include such systems helps reduce greenhouse gas emissions and may save businesses money on utility costs.

- Establish community-shared solar operations in Taft to support the increased use of renewable energy and evaluate the feasibility of launching or joining an existing Community Choice Energy (CCE) program. Taft residents and businesses who are unable or unwilling to install renewable electricity systems at their property, or wish to purchase more renewable electricity than they can generate on-site, can enroll in community solar or green tariff programs. These programs allow participants to purchase shares in renewable energy facilities and receive credits for the power generated by the system, or to voluntarily pay increased electricity costs that go toward generating renewable power. This power can also be sold to a CCE program if one is launched. These programs often credit customers for excess generation at a more attractive financial rate than do investor-owned utility companies.

- Enforce state mandate for zero net energy (ZNE) buildings for all new construction. California has set goals that all new residential buildings will be ZNE by 2020 and new commercial buildings will be

ZNE by 2030. To facilitate the transition to ZNE buildings and demonstrate the City's commitment to meeting state requirements, the City can proactively educate and inform staff, including building inspectors, residents, property owners, and developers, about the state mandates and how they will be impacted.

- Encourage development of renewable energy projects for the production of wind, solar, cogeneration, geothermal resources, and other alternative energies. These projects can generate excess revenue for business owners who would otherwise have vacant land. The power could be part of a community-shared solar project and sold to either a Community Choice Energy program or an investor-owned utility.

- Older homes, especially those built before the incorporation of energy efficiency and green building standards in local and state building codes (generally before 1980), are less energy efficient than newer buildings. Home retrofit programs address a variety of improvements in existing houses, such as upgrades to insulation, windows, heating, ventilating, and air conditioning (HVAC) systems, lighting, and appliances, and may reduce energy use by as much as 45 percent.

- Improve energy efficiency in residential rental units by promoting existing incentive programs and educating renters about opportunities to reduce energy use. Identify opportunities to work with landlords and property owners to make upgrades and develop a shared-savings model between owner and occupant(s).

- Energy-efficient retrofits can help the City reduce greenhouse gas emissions and save businesses money. Retrofits to these structures can reduce energy use by approximately 30 percent to 50 percent. Most of the commercial spaces in the City were built before 1990 and therefore were not required to comply with the latest energy efficiency and conservation building code requirements.

- Increasing the energy efficiency of industrial buildings is a key strategy to reduce greenhouse gas emissions as well as operational and maintenance costs for business owners. There are likely many opportunities to increase the efficiency of lighting and equipment while maintaining production levels and improving working conditions. Additionally, the City can continue working with the Taft Federal Correctional Institution to reduce energy use.

- Commercial and industrial facility energy efficiency upgrades should also include retrofitting of outdoor lighting to reduce energy use. Additional opportunities for reducing energy use exist through educating City staff on retrofitting streetlights and traffic signals to more efficient models.

- Low-income renters and homeowners may need assistance to reduce energy use. The City can help these individuals improve the energy efficiency in their housing units through weatherization measures and energy efficiency retrofits. The City should encourage property owners to disclose the benefits of weatherization to existing and future owners and renters.

- As the utility company's power mix gets cleaner, using electric appliances instead of natural gas will reduce greenhouse gas emissions. The City can work with developers and existing property owners to identify opportunities to replace natural gas appliances with electric models in new and significantly renovated homes and businesses.

- It is possible to reduce energy consumption through certain design techniques. For example, white roofs can reduce the temperature of a building and the related air conditioning needs. The City should continue to promote passive solar strategies to reduce heating and cooling costs. This may involve educating developers and property owners about the benefits of passive solar strategies.

- By requiring new buildings to achieve CALGreen Tier 1 energy efficiency standards, the City can ensure new buildings are efficient, saving property owners and renters money. Property owners and renters can work with energy providers to identify the most cost-effective measures to achieve these standards and also identify opportunities to integrate innovative financing and rebates to reduce the costs associated with making retrofits.

- Work with local businesses and educate them about the benefits of transitioning to hybrid and alternative fuel models as a way of reducing greenhouse gas emissions and improving local air quality.

- The City should encourage local oil drill operators to replace older, less efficient, oil well-related equipment with energy-efficient models. This may involve educating operators about the benefits of switching equipment, including GHG emission reductions and cost savings.

- Replacing diesel- or gasoline-operated equipment can improve local air quality and landscaper working conditions. It may also encourage residents and businesses to use similar equipment. The City could promote the use of alternative fuel equipment by providing information to the community about the costs and benefits of its actions.

- There may be opportunities to capture methane gas generated by agricultural operations and reuse it as fuel for heating or other purposes. The City can work with local businesses to understand potential projects and environmental and financial benefits.

- Reduce indoor water use, including through retrofitting old water fixtures with more efficient models and offering various incentives, such as rebates, to property owners. For each gallon of water that is reduced, the City saves energy and related greenhouse gas emissions needed to pump, treat, and deliver the water.

- Over half of water use is used outdoors. Reducing water use is possible through water-efficient landscaping and controls, and the use of greywater.

- The City can work with farmers to ensure that they are efficiently using water in agricultural operations. This may involve educational events with farmers explaining the environmental and financial benefits of changing practices and making operations more efficient.

- Alleviating storm-related flooding can reduce the overall impact on the stormwater system and may lead to fewer emergency pumps being used during a storm event. The City can work with developers and property owners to minimize runoff and integrate green infrastructure.

- The City should assess opportunities to reduce treated water use by increasing the amount of recycled water used by the community. Using more recycled water saves the City and Water District energy needed to pump, treat, and deliver water to homes and businesses.

- The Taft General Plan indicates that new development is likely to occur in the city. Adopting a construction and demolition ordinance that requires at least 65% diversion of all construction-related material, consistent with Tier 1 standards of Title 24, will reduce the amount of waste sent to the landfill and related GHG emissions.

- Decomposing landfill waste emits methane, which is a potent greenhouse gas. Diverting compostable materials from traditional waste streams may reduce these emissions. Taft could require composting and work with its local waste hauler to offer this service. Residents and businesses could deposit food scraps into a green bin to be composted and turned into fertilizer. Educating and informing residents and business owners about composting organic waste, such as food scraps, can reduce the amount of waste sent to the landfill and the related GHG emissions.

- Diverting recyclable materials from the landfill can reduce greenhouse gas emissions and reduce resident and business trash and tipping fees. The City can work with its waste hauler to ensure that all customers have recycling service and educate them about the benefits of recycling.

- The City can work with the waste management company to educate residents and businesses about what items can be recycled and which must be landfilled. Taft can lead by example by reducing waste at all public facilities and City-sponsored events.

- Taft can work with local oil drillers to reduce waste from petroleum extraction activities. Reducing waste can reduce greenhouse gas emissions and improve public health.

- The City has control over the types of goods and services it ultimately purchases. By developing and implementing a purchasing policy that requires City employees to purchase sustainably sourced products, the City can improve energy efficiency, decrease waste, and decrease resource use.

- City employees and visitors should work to decrease the amount of waste generated at City facilities. This may mean increased recycling and composting or using fewer disposable products in general.

- The City has direct control over how much energy is used at its own facilities. There are many opportunities to reduce energy use through energy management and equipment upgrades.

- The City should consider replacing conventional gasoline vehicles with alternative fuel vehicles like all-electric or fuel cell models. Fleet conversions may be eligible for grants or rebates and may save the City money while reducing greenhouse gas emissions and improving local air quality.

- Raising community awareness of green building strategies for new and significantly renovated buildings can lead to energy-efficient design and a better understanding of how to reduce energy use in existing buildings.

- Continue to work with the Chamber of Commerce to host the Taft Farmers Market and Street Faire, and work with local farms and vendors to sell locally produced goods. This can lead to a reduction in vehicle miles traveled since residents are purchasing items in Taft versus driving elsewhere.

- Creating a Green Revolving Loan program can help finance residential and commercial building energy and water improvements, thus saving property owners money while reducing energy and water use.

- Maximizing opportunities for Taft residents to train in green technology fields can lead to new and diverse employment opportunities and attract new investment in the city. These jobs may include renewable energy installation and maintenance, home energy auditing, recycling and waste management, manufacture and sale of environmentally responsible products, and maintenance of electric and hybrid vehicles.

4.8.3 ENVIRONMENTAL IMPACTS

4.8.3.1 Thresholds of Significance

The impacts related to GHG emissions resulting from the implementation of the proposed project would be considered significant if they would exceed the following significance criteria, in accordance with Appendix G of the *State CEQA Guidelines*:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

4.8.3.2 Methodology

The 2026 RTP addresses transportation projects and land use distribution patterns. These land use distribution patterns identify growth distribution and anticipated land use development to accommodate growth projections. The UPlan Urban Growth Model (UPlan), used for this analysis, feeds into the Kern COG travel demand model which captures pass-through traffic that does not have an origin or destination in the region, but does impact the region, so that, too, is included in the project analysis. Although a similar level of development is anticipated even without the 2026 RTP, the 2026 RTP would influence growth, including distribution patterns, throughout Kern County. The analysis in this PEIR addresses the overall impacts of all transportation projects and land development anticipated to occur under the 2026 RTP. In addition, this PEIR considers cumulative impacts from other regional plans (e.g., the Air Quality Management Plan and RTPs of adjacent jurisdictions), which could result in additional impacts inside and outside Kern County. For purposes of modeling GHG emissions, consistent with CARB recommendations, two models are used by Kern COG: EMFAC 2014 is used to model emissions from light-duty vehicles for purposes of assessing compliance with SB 375, and EMFAC 2021 is used for modeling all other emissions. While the older version of EMFAC does not include updated information, ZEV regulations and restructured heavy-duty truck standards, it does provide a consistent basis for comparing emissions to the targets that were set using EMFAC 2014. SB 375 analysis only includes half the trips that start or end in Kern County and does not include pass-through trips. The analysis of total emissions includes not just vehicles that start and end their trips in Kern County, but also vehicles passing through Kern County. As a County in the Central Valley along major travel routes (I-5 and SR-99), a large number of vehicles, including a large number of heavy-duty trucks, pass through Kern County. These pass-through trips add substantially to emissions in the County.

Determination of Significance

Analysis of the potential GHG impacts of the Plan was conducted based on regional-level modeling of mobile-source emissions and a qualitative discussion of area source emissions. Area source emissions are primarily associated with energy use, but also occur as a result of agricultural (vegetation and dairy) and industrial sources. Area source emissions are complex, and each source of emissions is subject to regulations applicable to the relevant sectors as identified in the Scoping Plan. It is not reasonably feasible to quantify all the varied area source emissions in Kern County. SB 350 (discussed under the Regulatory Framework discussion above), will result in dramatic reductions in GHG emissions from energy use in the State of California (including energy associated with water use), but quantifying such future emissions by utility and/or by each sector requires an in depth understanding of existing uses of energy, associated emissions for each energy supplier and an understanding of how each supplier intends to comply with SB 350 (as well as other sector specific regulations). Kern COG has a detailed understanding of mobile-source emissions and is therefore able to quantify and project mobile source emissions into the future with a reasonable degree of confidence. However, such is not the case for stationary/area source emissions in the County, and hence the qualitative nature of the stationary/area source emissions analysis.

The GHG analysis calculates the mobile emissions associated with the 2026 RTP using Kern COG's UPlan land use model outputs, the Kern COG trave demand model and CARB's EMFAC2021 and EMFAC2014[77] emissions model. In the analysis below, future year emissions are compared to 2024 existing conditions and evaluated in the context of statewide GHG reduction targets, including the AB 32 target of returning to 1990 emissions levels by 2020 and the SB 32 target of reducing emissions to 40 percent below 1990 levels by 2030.

It is anticipated that future conservation (as a result of increased pressure to conserve and increased prices) will result in reduced demand for all types of energy (for both mobile and stationary/area sources). As energy providers and other sectors respond to AB 32 and the Scoping Plan, emission rates associated with energy use are anticipated to decrease.

Approach to Mitigation

As discussed in **Chapter 1.0, Introduction,** Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process

---

77 Regulations governing preparation of Regional Transportation Plans guide the use of modeling. EMFAC2021was used for most analysis in the 2026 RTP. While EMFAC2021 could have been used for SB 375, ARB requested the use of EMFAC2014 to allow comparison with prior RTPs.

will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

4.8.3.3 Impacts and Mitigation Measures

Impact GHG-1 **Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment**

Regional and Transit Priority Area Impacts

The Plan identifies projected growth for the Kern COG region in accordance with policies identified to reduce vehicle trips and vehicle trip length. Between 2024 and 2049, the County is anticipated to experience increases in population, households, and jobs (see **Section 3.0, Project Description**, and **Section 4.9, Population, Housing and Employment**). The Plan focuses on development in a compact pattern, which reduces per capita GHG emissions as compared to the No Project option. Compact development generally uses less energy for transportation (shorter trips and some trips become pedestrian and bicycle rather than auto) as well as less energy to heat and cool homes (multi-family housing units are insulated by each other as compared to single-family units and, therefore, require less heating and cooling) and less water and therefore less energy to treat and transport water (multi-family units have less landscaping requiring irrigation as compared to single-family units).

GHG emissions result from direct and indirect sources. Direct emissions include emissions from fuel combustion in vehicles (i.e., autos, trucks, trains, buses, planes, ships, and trains) and natural gas combustion from stationary and area sources. Indirect sources include emissions occurring at distant power plants as a result of electricity for residential, commercial and industrial use and public services including treatment and transportation of potable water and wastewater.

Construction

Construction activities (of both transportation projects and development) throughout implementation of the Plan will result in direct and indirect emissions. Construction activities, including worker vehicle trips, transport of materials to and from the construction site, and operation of construction equipment, result in GHG emissions. Construction of individual projects occurs over a relatively short period as compared to the life of a project, and so emissions due to construction activities are often amortized over the life of a project (e.g., 30 years).

Typically, individual project construction characteristics are identified, such as the timing of construction phases and equipment fleet mix. Due to the scale of construction activity associated with implementation of the Plan, construction would be expected to occur continuously throughout the life of the Plan as individual projects are constructed. Annual construction-related GHG emissions would be expected to vary depending on the number and type of projects being constructed in a given year (which would vary according to the economy); this level of data is unavailable for detailed analysis. Typically, construction GHG emissions represent approximately 1.7% of total GHG emissions in the United States.[78]

Residential, Commercial Agricultural, Industrial and Other Sources

GHG emissions would result from the use of electricity, which is generated from a variety of sources. Kern County is serviced by both Pacific Gas and Electric (PG&E) and Southern California Edison.

Agricultural machinery, plants (including crops), animals (including dairy), solid waste collection and disposal, trains, airplanes, other stationary sources, industrial processes and use of a variety of products by residents and workers all result in GHG emissions. Reasonably reliable information about current and future emissions from these sources is not reasonably available. For example, new industrial sources are typically relatively unique and must be calculated using precise information regarding the specific process. No such information exists for potential future industrial sources of GHG emissions. In addition to stationary sources associated with different land uses, GHG emissions result from construction of the different land uses, including construction of new transportation facilities identified in the RTP.

The 2022 Scoping Plan indicates 2019 emissions Statewide (404 $MMTCO_2e$) by sector as follows: 40 percent transportation, 20 percent electric power, 15 percent industrial, 8 percent agriculture, 9 percent commercial and residential, 5 percent high GWP, 2 percent recycling and waste.[79]

---

78 U.S. EPA, *Potential for Reducing Greenhouse Gas Emissions in the Construction Sector*. February 2009.

79 CARB, *2022 Scoping Plan for Achieving Carbon Neutrality*, 2022. Available online at: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf, accessed April 1, 2026.

The 2022 Kern County Greenhouse Gas Inventory indicates 2022 emissions (12.04 $MMTCO_2e$) by sector as follows: 22 percent electricity consumption, 40 percent fossil fuels industry, 17 percent transportation, 8 percent agriculture, 7 percent industrial processes, 5 percent residential/commercial/industrial combustion, < 1 percent for forestry and land use, < 1 percent for waste management and 1 percent for other sources.

The 2022 Kern County Greenhouse Gas Inventory indicates 2022 emissions (22.97 $MMTCO_2e$) broken down as follows: 38 percent stationary sources, 15 percent building energy, 12 percent other, 7 percent Agriculture, 2 percent off-road mobile, 2 percent solid waste, 1 percent water and 1 percent wastewater.

Between 2022 and 2045, Countywide emissions are anticipated to increase by approximately 18.4 percent, from 22,968,796 MTCO2e to 27,196,577 MTCO2e. Stationary sources are anticipated to remain the largest contributor to Countywide GHG emissions, increasing from approximately 37.8 percent of total emissions in 2022 to approximately 36.6 percent in 2045. Most sectors are anticipated to increase in both total emissions and relative contribution over the forecast period, while agricultural emissions are anticipated to remain relatively stable and slightly decrease overall. Between 2022 and 2045, forecasted GHG emissions by sector are anticipated to change as follows: on-road mobile sources increase by approximately 26.2 percent, off-road mobile sources by 28.9 percent, agriculture decreases by less than 1 percent, building energy by 22.9 percent, stationary sources by 14.7 percent, solid waste by 44.1 percent, wastewater by 36.0 percent, water by 1.4 percent, and other sources by 15.5 percent.

The number of residential units, as well as the area of commercial and industrial uses, is anticipated to increase under the 2026 RTP (see **Chapter 3.0, Project Description**). Agricultural land is anticipated to decrease, but farming practices could become more intense, using greater energy. Therefore, without regulations requiring reductions in energy use, total energy use and total emissions associated with energy use (as well as water use and other sources of GHG emissions) from all areas and stationary sources are anticipated to increase in proportion to the increase in development in the County and would be greater than under existing conditions. However, it is anticipated that AB 32 and the Scoping Plan will be implemented and will require that all sectors of the economy reduce emissions consistent with AB 32 requirements. Notably, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030.

However, all the necessary actions to achieve such reductions have not been identified, and compliance with AB 32 and the Scoping Plan cannot be assured by Kern COG.

The 2026 RTP and Kern COG have little to no influence on emissions from the majority of stationary/area sources, with the exception that a more compact development pattern that results in more efficient energy use (multi-family units generally use less energy and water than single-family homes).

The 2026 RTP includes strategies that would result in reduced GHG emissions from developed land uses by encouraging a more compact growth pattern that is generally more efficient and uses less energy (and less water and generates less wastes) and therefore generates fewer emissions.

Although Kern COG develops the SCS in the 2026 RTP to meet the GHG targets for the region, Kern COG does not have any direct authority over whether or how land is developed in Kern County. Consequently, the 2026 RTP only has an indirect influence on land use developments in the County, and GHG emissions resulting from development are not within Kern COG's organizational control.

Transportation

Mobile sources are a major source of GHG emissions. The 2026 RTP is designed to reduce emissions from transportation sources associated with light-duty vehicles (reductions in trips and trip lengths) as a result of changes to land use. Total vehicle emissions were modeled by Kern COG using a methodology agreed upon by CARB (EMFAC2021).[80] Results for on-road mobile source emissions are presented in **Table 4.8-5, Annual Total On-Road Mobile Source GHG Emissions – 2024 Compared to 2049.**

Table 4.8-4
Annual Total On-Road Mobile Source GHG Emissions – 2024 Compared to 2049

Source	2024 ($MTCO_2e$/Year)	2049 Plan ($MTCO_2e$/Year)	2049 No Plan ($MTCO_2e$/Year)
On-Road Mobile[a]	2,402,065	2,771,445	2,892,260

Source: Kern COG 2026.
[a] Annual total on-road mobile source GHG emissions are conservatively estimated based on the assumption that weekday GHG emissions would occur for all 365 days of the year.
[b] The 2012 Kern County Communitywide Greenhouse Gas Emissions Inventory anticipated transportation based emissions of 4,927,262 MTCO2e in 2020 (including off-road diesel)

As shown in **Table 4.8-4**, Plan growth in Kern County would result in a 15 percent increase in on-road mobile-source GHG emissions in 2049 as compared to 2024 under the 2026 RTP. Under the No Project Alternative, emissions would increase by approximately 20 percent.

In summary, while transportation sector (specifically on road source) GHG emissions resulting from implementation of the Plan are anticipated to increase compared to existing conditions, they would

80 Regulations governing preparation of Regional Transportation Plans guide the use of modeling. EMFAC 2014 is used for purposes of evaluating compliance with SB 375. EMFAC2021 is the most recent version of EMFAC that has been approved by the USEPA for purposes of evaluating compliance with the State Implementation Plan (SIP). EMFAC 2025 is available but has not yet been approved for use with SIPs.

decrease compared to No Project conditions. Emissions are not anticipated to be reduced sufficiently to meet all the GHG emissions reduction targets established for California (see Regulatory Framework and discussion of **Impact GHG-2** below). While the Plan will meet the SB 375 GHG reduction targets set by CARB for Kern COG, CARB has indicated that achievement of such regional targets is insufficient for the transportation sector to meet the state's overall GHG reduction goals. As noted in the discussion above, the analyses of GHG emissions sources presented herein, even for transportation, do not fully take into account changes to fuels and technology that are expected to substantially reduce emissions compared to what is presented here. Nonetheless, **Impact GHG-1** is considered potentially significant, requiring mitigation measures as set forth below.

Level of Significance Before Mitigation

GHG emissions resulting from the Plan may result in potentially significant impacts.

Mitigation Measures

See also mitigation measures to reduce VMT in **Section 4.11, Transportation and Traffic (MM TR-2, through MM-TR-4)**, and measures to reduce criteria pollutants in **Section 4.3, Air Quality (MM AIR-1 and MM AIR-2)**, that could also reduce GHG emissions.

MM GHG-1: Kern COG shall update future Regional Transportation Plans (including Sustainable Community Strategies) to incorporate policies and measures that build upon successful GHG reduction strategies from the 2026 RTP and lead to further reduced GHG emissions. Such policies and measures may be derived from the General Plans, local jurisdictions' Climate Action Plans (CAPs), and other adopted policies and plans of its member agencies that include GHG mitigation and adaptation measures or other sources.

MM GHG-2: Kern COG shall, through its ongoing outreach and technical assistance programs, work with and encourage local governments to adopt policies and develop practices that lead to GHG emission reductions. These activities should include, but are not limited to, providing technical assistance and information sharing on developing local Climate Action Plans.

MM GHG-3: Kern COG shall continue the Regional Energy Action Planning, as funding allows, and assist member agencies in adopting regional energy action plans and community climate action plans to advance regional climate strategies. These plans should assess the cost effectiveness of local jurisdictions' GHG reduction measures and prioritize strategies that have greatest overall benefit to the economy.

MM GHG-4: Consistent with the CMP, Kern COG shall encourage and work with local governments to develop multimodal performance standards to determine how much traffic, during peak hours, is acceptable on state freeways, highways, and major streets within Kern County. Local jurisdictions should incorporate multimodal level of service standards in their circulation plans consistent with AB 1358 California Complete Streets Act of 2008 and as appropriate for each community facility type, place type, and corridor type, as recommended in the latest Highway Capacity Manual update. In addition, Kern COG will work with local agencies to identify frequency and routing of transit service, in order to assist in coordinating transit service provided by separate operators throughout Kern County.

MM GHG-5: Kern COG will continue to promote GHG and criteria pollutant emission reductions through the VMT Reduction Progress Tracking & Assistance Program by providing local jurisdictions with regular progress reports on changes in observed VMT, and providing planning assistance and resources to make progress toward reduction goals. Other resources being provided to local planners include the San Joaquin Valley Planners Toolkit.

MM GHG-6: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to build on the work done for the Kern County GHG inventory. Implementing agencies and local agencies should also adopt and implement Climate Action Plans (CAPs, also known as Plans for the Reduction of Greenhouse Gas Emissions as described in *CEQA Guidelines* Section 15183.5 Tiering and Streamlining the Analysis of Greenhouse Gas Emissions) that do the following:

a) Quantify GHG emissions, both existing and projected over a specified period, resulting from activities within each agency's jurisdiction;

b) Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;

c) Identify and analyze the GHG emissions resulting for specific actions or categories of actions anticipated within their respective jurisdictions;

d) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;

e) Establish a mechanism to monitor the plan's progress toward achieving that level and to require amendment if the plan is not achieving specified levels; and

f) Be adopted in a public process following environmental review.

MM GHG-7: In accordance with provisions of sections 15091(a)(2) and 15126.4(a)(1)(B) of the *State CEQA Guidelines*, a Lead Agency for a project can and should consider mitigation measures to reduce substantial adverse effects related to greenhouse gas emissions. Such measures may include the following or other comparable measures identified by the Lead Agency:

a) Integrate green building measures consistent with CALGreen (California Building Code Title 24), local building codes and other applicable laws, into project design including:

i) Use energy efficient materials in building design, construction, rehabilitation, and retrofit.

ii) Install energy-efficient lighting, heating, and cooling systems (cogeneration); water heaters; appliances; equipment; and control systems.

iii) Reduce lighting, heating, and cooling needs by taking advantage of light-colored roofs, trees for shade, and sunlight.

iv) Incorporate passive environmental control systems that account for the characteristics of the natural environment.

v) Use high-efficiency lighting and cooking devices.

vi) Incorporate passive solar design.

vii) Use high-reflectivity building materials and multiple glazing.

viii) Prohibit gas-powered landscape maintenance equipment.

ix) Install electric vehicle charging stations.

x) Reduce wood burning stoves or fireplaces.

xi) Provide bike lanes accessibility and parking at residential developments.

b) Reduce emissions resulting from projects through implementation of project features, project design, or other measures, such as those described in Appendix F of the *State CEQA Guidelines*.

c) Include off-site measures to mitigate a project's emissions.

d) Measures that consider incorporation of Best Available Control Technology (BACT) during design, construction and operation of projects to minimize GHG emissions, including but not limited to:

   i) Use energy and fuel-efficient vehicles and equipment;

   ii) Deployment of zero- and/or near zero emission technologies;

   iii) Use lighting systems that are energy efficient, such as LED technology;

   iv) Use the minimum feasible amount of GHG-emitting construction materials;

   v) Use cement blended with the maximum feasible amount of flash or other materials that reduce GHG emissions from cement production;

   vi) Incorporate design measures to reduce GHG emissions from solid waste management through encouraging solid waste recycling and reuse;

   vii) Incorporate design measures to reduce energy consumption and increase use of renewable energy;

   viii) Incorporate design measures to reduce water consumption;

   ix) Use lighter-colored pavement where feasible;

   x) Recycle construction debris to maximum extent feasible;

   xi) Plant shade trees in or near construction projects where feasible; and

   xii) Solicit bids that include concepts listed above.

e) Measures that encourage transit use, carpooling, bike-share and car-share programs, active transportation, and parking strategies, including, but not limited to the following:

i) Promote transit-active transportation coordinated strategies;

ii) Increase bicycle carrying capacity on transit and rail vehicles;

iii) Improve or increase access to transit;

iv) Increase access to common goods and services, such as groceries, schools, and day care;

v) Incorporate affordable housing into the project;

vi) Incorporate the neighborhood electric vehicle network;

vii) Orient the project toward transit, bicycle and pedestrian facilities;

viii) Improve pedestrian or bicycle networks, or transit service;

ix) Provide traffic calming measures;

x) Provide bicycle parking;

xi) Limit or eliminate park supply;

xii) Unbundle parking costs;

xiii) Provide parking cash-out programs;

xiv) Implement or provide access to commute reduction program;

f) Incorporate bicycle and pedestrian facilities into project designs, maintaining these facilities, and providing amenities incentivizing their use; and planning for and building local bicycle projects that connect with the regional network;

g) Improving transit access to rail and bus routes by incentives for construction of transit facilities within developments, and/or providing dedicated shuttle service to transit stations; and

h) Adopting employer trip reduction measures to reduce employee trips such as vanpool and carpool programs, providing end-of-trip facilities, and telecommuting programs including but not limited to measures that:

i) Provide car-sharing, bike sharing, and ride-sharing programs;

ii) Provide transit passes;

iii) Shift single occupancy vehicle trips to carpooling or vanpooling, for example providing ride-matching services;

iv) Provide incentives or subsidies that increase that use of modes other than single-occupancy vehicle;

v) Provide on-site amenities at places of work, such as priority parking for carpools and vanpools, secure bike parking, and showers and locker rooms;

vi) Provide employee transportation coordinators at employment sites;

vii) Provide a guaranteed ride home service to users of non-auto modes.

i) Designate a percentage of parking spaces for ride-sharing vehicles or high-occupancy vehicles, and provide adequate passenger loading and unloading for those vehicles;

j) Land use siting and design measures that reduce GHG emissions, including:

i) Developing on infill and brownfields sites;

ii) Building compact and mixed-use developments near transit;

iii) Retaining on-site mature trees and vegetation, and planting new canopy trees;

iv) Measures that increase vehicle efficiency, encourage use of zero and low emissions vehicles, or reduce the carbon content of fuels, including constructing or encouraging construction of electric vehicle charging stations or neighborhood electric vehicle networks, or charging for electric bicycles; and

v) Measures to reduce GHG emissions from solid waste management through encouraging solid waste recycling and reuse.

Level of Significance After Mitigation

As discussed above, regulations and policies would reduce impacts, but given the regional scale of the analysis in this PEIR, it is not possible to determine if all impacts would be fully mitigated by existing regulations and policies. Therefore, this EIR identifies project-level mitigation measures consistent with

applicable regulations and policies designed to reduce impacts. Lead Agencies may choose to include project-level mitigation measures in environmental documents as they determine to be appropriate and feasible. However, because of the regional nature of the analysis and the difficulty in quantifying the effectiveness of the mitigation measures identified above, and Kern COG's lack of authority to implement project-level mitigation measures, this PEIR finds **Impact GHG-1** related to greenhouse gas emissions to be significant and unavoidable.

Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing emissions of greenhouse gases.

AB 32, SB 32 and SB 375

SB 375 was adopted in order to assist the state in meeting AB 32 targets. By meeting SB 375 targets as discussed below, the 2026 RTP has successfully fulfilled its responsibilities with regard to AB 32. *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan)[81] indicated that the state as a whole was on course to reach the 2020 and 2030 emissions targets. CARB cites the successful implementation of the Scoping Plan measures, energy efficiency measures, and renewable power requirements as major factors in this progress. It also includes reductions resulting from implementation of SB 375. The *2022 Climate Change Scoping Plan* extended and expanded upon prior Scoping Plans with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045.

However, as discussed below, while the region will meet its SB 375 GHG reduction targets, the 2017 and 2022 CARB Scoping Plans recognize that SB 375 GHG reductions alone are not sufficient to achieve the State's longer-term climate goals. The 2022 Scoping Plan indicates that additional reductions in VMT, beyond the currently adopted SB 375 Sustainable Communities Strategies, may be necessary to achieve statewide greenhouse gas reduction and carbon neutrality goals. Specifically, the 2022 Scoping Plan includes a planning assumption of reducing per capita light-duty vehicle miles traveled by approximately 25 percent below 2019 levels by 2030 and 30 percent below 2019 levels by 2045.

The 2026 RTP does not block or otherwise hinder any of the regulations or programs described by CARB as central to the success of AB 32.

As discussed above, the region would continue to grow and without regulation, emissions associated with residential, commercial, agricultural and industrial uses would continue to increase generally

81 California Air Resources Board, *California's 2017 Climate Change Scoping Plan*. November 2017.

proportionate to increase developed area. However, increasingly stringent regulations, as discussed above would reduce emissions associated with stationary and area sources.

Total vehicle emissions for 2035 were modeled using EMFAC2021; mobile emissions for 2005 were taken from the Kern County GHG inventory;[82] results are provided below in **Table 4.8-5**. The analysis of total emissions includes not just vehicles that start and end their trips in Kern County, but also vehicles passing through Kern County. As a County in the Central Valley along main travel routes (I-5 and SR-99), a large number of vehicles including a large number of heavy-duty trucks pass through Kern County. These pass-through trips add substantially to emissions in the County.

Table 4.8-5
Annual Total On-Road Mobile Source GHG Emissions – 1990 Compared to 2035

Source	1990 (2005 minus 15%) ($MTCO_2e$/Year)	2035 Plan ($MTCO_2e$/Year)	2035 No Plan Alternative ($MTCO_2e$/Year)
On-Road Mobile Sources[a]	3,723,439	2,696,255	2,733,120

Sources: 2022 Kern County Inventory, Kern COG 2026, and Impact Sciences 2026.
[a] Annual total on-road mobile source GHG emissions are conservatively estimated based on the assumption that weekday GHG emissions would occur for all 365 days of the year.

The results above show that there will be a net reduction in total mobile source emissions between 1990 and 2035. Under the 2026 RTP, annual total on-road mobile source GHG emissions would decrease by 987,764 MTCO2e by 2035, an approximately 27 percent decrease compared to 1990 levels. Under the No Plan alternative, the reduction would be slightly less at approximately 26 percent.

As shown in **Table 4.8-4** and **Table 4.8-5**, the 2026 RTP would result in approximately 2,696,255 $MTCO_2e$ from on-road mobile sources in 2035 and 2,771,445 $MTCO_2e$ from on-road mobile sources in 2049. According to **Table 4.14-2, Growth Trends for Kern County and Cities**, the forecasted population for 2035 is approximately 975,900, and the forecasted population for 2049 is approximately 1,017,200. This results in approximately 2.7 $MTCO_2e$ per capita by 2049 for total on-road mobile sources alone. The 2022 CARB Scoping Plan, developed pursuant to Assembly Bill 1279, establishes a statewide goal of achieving carbon neutrality no later than 2045 and reducing statewide anthropogenic greenhouse gas emissions to at least 85 percent below 1990 levels by 2045.

82 San Joaquin Valley Air Pollution Control District, *Communitywide Greenhouse Gas Emission Inventory 2005 Baseline Year – 2020 Forecast.* May 2012.

The 2022 Kern Countywide Greenhouse Gas Emissions Inventory indicated that transportation sources (including on-road and off-road mobile sources) comprise approximately 24 percent of Countywide GHG emissions in 2022 and are forecast to comprise approximately 26 percent in 2045. However, the relative percentages of each sector that comprise the total are anticipated to continue changing over time, and, as discussed throughout this section, regulations continue to be implemented across multiple sectors to reduce greenhouse gas emissions, including within the transportation sector.

As discussed above, the 2026 RTP provides strategies to reduce GHG emissions from land use and development that would reduce both mobile source emissions and emissions from energy use. With full implementation of the AB 32 Scoping Plan, *California's 2022 Climate Change Scoping Plan,* and if 2026 RTP strategies could be fully accounted for, it is expected that emissions in Kern County could meet the AB 32 and SB 32 reductions targets. However, because information required to show a full and accurate quantified analysis of the impact of the 2026 RTP (as well as the impact of other regulations on other sectors) with respect to consistency with AB 32, the Scoping Plan and SB 32 are not available, the increase in per capita GHG emissions is considered to be potentially significant.

Compliance with SB 375

SB 375 requires that local MPOs provide plans to reduce GHG emissions from cars and light trucks compared to 2005 levels. The reduction targets are determined by CARB. For Kern COG, CARB determined that the 2020 target is a 9 percent reduction from 2005 emissions levels, and the 2035 target is a 15 percent reduction.[83] The 2026 RTP exceeded (does better than) the 2020 target with a reduction of almost 10.8 percent in 2020, and the 2026 RTP meets the 2035 target with a reduction of 15.0 percent in 2035. The 2026 RTP achieves the reductions by a mix of land use strategies, transportation management, economic factors, and road projects. The 2026 RTP also notes state and regional programs that assist in reaching the reduction targets, such as state funding for transportation management and infrastructure improvement, regional air district programs to replace inefficient or heavily polluting vehicles, regional energy planning, and efficient commuting programs. It is important to note that strategies accounted for under AB 32 are not included in SB 375 emissions calculations.

As shown in **Table 4.8-6**, **Results of Light-Duty Vehicle Greenhouse Gas Emissions and Vehicle Trips Reductions,** per capita GHG emissions from cars and light-duty trucks are calculated to be 15.78 pounds per day in 2020, which is a 10.8 percent decrease in per capita GHG emissions from 2005 to 2020. This decrease would exceed the nine percent emissions reduction target by 2020 for the region set by SB 375. By

83 CARB, SB 375 Regional Plan Climate Targets, https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets, accessed April 8, 2026.

2035, the 2026 RTP would result in 15.09 pounds per day for per capita GHG emissions from cars and light-duty trucks. This represents a 15.0% decrease in per capita GHG emissions from 2005 to 2035. This decrease would meet the 15% emissions reduction target set by CARB for 2035. By meeting the SB 375 targets for 2020 and 2035, the 2026 RTP is expected to fulfill its portion of SB 375 compliance with respect to meeting the State's GHG emission reduction goals. Therefore, the 2026 RTP would meet SB 375 GHG emission reduction targets. As noted above, there remains a gap between SB 375 targets and necessary emissions reductions from the light-duty vehicle sector. It is anticipated that evolving regulations will help California achieve the necessary reductions in GHG emissions.

Table 4.8-6
SB 375 Light Duty Vehicle Greenhouse Gas Emissions and Vehicle Trips Reductions

Indicators and Measures	2020	2035
Total Population	906,710	975,900
Vehicle Miles Traveled (VMT)		
VMT per Weekday (Miles, in Thousands)	23,980	25,415
VMT by Passenger Vehicles per Weekday (-XX, Miles, in Thousands)	19,630	19,291
Per Capita VMT (All Travel)	26.45	26.04
Per Capita VMT SB 375	21.65	19.77
Difference between 2005 Base Per Capita VMT (24.22 miles)	-10.6%	-14.2%
SB 375 CO_2 Emissions		
Modeled SB 375 CO_2 Emissions by Passenger Vehicles per Weekday (lbs)*	7,299	7,440
Off-Model SB 375 CO_2 Emissions by Passenger Vehicles per Weekday (lbs)**	-146	-68
Total SB 375 CO2 Emissions by Passenger Vehicles per Weekday (lbs)	7,152	7,365
Total Per Capita SB 375 CO2 Emissions by Passenger Vehicles per Weekday (lbs)	15.78	15.09
Total CO_2e Pounds Per Capita Reduction***	-10.8%	-15.0%
SB 375 Targets (Targets Beginning October 1, 2018)	-9%	-15%

Other Plans

The 2026 RTP would not impede implementation of other plans and policies designed to reduce GHG emissions, including the Kern County General Plan, Bakersfield General Plan, and the Taft Climate Action Plan. Policies in each of these documents focus on similar goals, which are primarily directed at reducing VMT. For example, this is done by encouraging the use of public transit, bicycling, carpooling, and promoting infill and mixed-use developments. The 2026 RTP includes densifying development, as well as providing alternative transportation projects. The Taft Climate Action Plan includes emissions reduction targets that are consistent with the 2022 Scoping Plan. As discussed above, on-road mobile sources alone could equal approximately 2.7 MTCO2e per capita in 2049 without further emission controls. This would

exceed the 2050 target and could indicate that the County is not on track to meet the 2050 target. Because information required to show a full and accurate quantified analysis of the impact of the 2026 RTP with regard to land uses in Kern County is not available, the increase in per capita GHG emissions is considered to be potentially significant.

Summary

The Plan has demonstrated that it will meet CARB's targets for greenhouse gas emissions from light-duty passenger vehicles for 2020 and 2035. By meeting the SB 375 targets, the Plan has technically contributed its share (in the transportation sector) towards meeting the AB 32, SB 32, and the Scoping Plan targets. As discussed above, GHG impacts are generally cumulative in nature and have broader (i.e., statewide, national, and global) implications. Also, CARB has indicated that even if all MPOs meet their regional SB 375 GHG targets, the state would not be able to meet the statewide GHG reduction goals of AB 32, SB 32, and the most recent Scoping Plan. As recognized by CARB, MPOs do not have land use authority to implement additional VMT reductions. Furthermore, Kern COG has no control or authority over the other key sectors (e.g., energy, industry, water, waste, and agriculture) in meeting the AB 32, SB 32, and Scoping Plan targets. Assuming existing available emission factors, GHG emissions in the Kern COG region are not on track to achieve targets identified in AB 32, SB 32, and the Scoping Plan, resulting in a potentially significant impact. Mitigation is required.

Level of Significance Before Mitigation

GHG emissions in the Kern COG region are not on track to achieve targets identified in AB 32, SB 32, and the Scoping Plan, resulting in a potentially significant impact.

Mitigation Measures

See Mitigation Measures MM TR-2 through MM-TR-4, MM AIR-1 and MM AIR-2, and MM-GHG-1 through MM-GHG-7, above.

Level of Significance After Mitigation

As discussed above, regulations and policies would reduce impacts, but given the regional scale of the analysis in this PEIR, it is not possible to determine if all impacts would be fully mitigated by existing regulations and policies. Therefore, this EIR identifies project-level mitigation measures consistent with applicable regulations and policies designed to reduce impacts. Lead Agencies may choose to include project-level mitigation measures in environmental documents as they determine to be appropriate and feasible. However, because of the regional nature of the analysis, the estimated GHG emissions from the

three primary sources, the difficulty in quantifying both future emission and water and energy consumption factors and the effectiveness of the mitigation measures identified above, and Kern COG's lack of authority to implement project-level mitigation measures, this PEIR finds **Impact GHG-2** related to greenhouse gas emissions and potential conflicts with applicable plans, policies and regulations to be significant and unavoidable.

4.8.4 CUMULATIVE IMPACTS

In general, GHG emissions analyses are by nature cumulative as impacts from GHG emissions are global, and there is currently no method to tie local impacts to specific sources. Emissions from any single project mix in the atmosphere and contribute to local, regional, and global impacts over long periods of time. Consequently, any project-specific GHG analysis is inherently a cumulative analysis. The analysis presented above is also a cumulative analysis in that it considers the entire County as the project site, includes all growth in residential and commercial space as well as Countywide vehicle traffic, and compares these impacts to statewide plans and regulations. In this way, it includes all projects of a similar nature and compares the total impact to regional thresholds. Adjacent jurisdictions in preparing their RTPs will similarly evaluate GHG emissions; in addition, air quality management districts will evaluate emissions associated with stationary and other non-mobile sources, and local jurisdictions will more precisely quantify emissions associated with individual projects. It is anticipated that the significant GHG emissions in Kern County will add to emissions in other jurisdictions.

4.9 HAZARDS & HAZARDOUS MATERIALS

This section describes the hazardous materials in Kern County, analyzes the potential impacts of the 2026 RTP on hazards and hazardous materials, identifies mitigation measures as appropriate for potentially significant impacts, and identifies residual impacts. (Note that contamination of water resources is addressed in **Section 4.10, Hydrology and Water Resources**, wildfire risk is discussed in **Section 4.18, Wildfire** , and air toxics are addressed in **Section 4.3, Air Quality**.)

4.9.1 ENVIRONMENTAL SETTING

4.9.1.1 Hazardous Materials

As will be discussed in more detail below, hazardous materials and wastes are defined and regulated in the United States by federal, state, and local regulations, including those administered by the U.S. Environmental Protection Agency (U.S. EPA), the California Environmental Protection Agency (Cal/EPA), the US Occupational Safety and Health Administration, the U.S. Department of Transportation, the US Nuclear Regulatory Commission, and various other agencies. Hazardous materials include hazardous wastes, and in the discussion below (except as noted), hazardous materials refer to both hazardous materials and wastes.

Public health is potentially at risk whenever hazardous materials are, or will be, used and when hazardous wastes are disposed of, including transportation of hazardous materials and wastes. It is necessary to differentiate between the "hazard" of these materials and the acceptability of the "risk" they pose to human health and the environment. A hazard is any situation that has the potential to cause damage to human health and the environment. The California Department of Toxic Substances Control (DTSC) determines the risk to health and public safety by the probability of exposure, in addition to the inherent toxicity of a material.

Factors that can influence the health effects when human beings are exposed to hazardous materials or wastes include: the dose the person is exposed to, the frequency of exposure, the duration of exposure, the exposure pathway (route by which a chemical enters a person's body), and the individual's unique biological susceptibility.

Hazardous Waste Generation and Management

There are four general categories of waste management: source reduction, recycling, treatment, and residuals disposal. All of these activities can occur on-site at the location where they are generated.

Recycling, treatment, and disposal can also occur off-site but require additional intermediate support to store and transport the waste.

The generation and handling of hazardous waste in Kern County is overseen by multiple agencies, including the U.S. EPA; California Department of Toxic Substances Control, Central Valley Regional Water Quality Control Board, San Joaquin Valley Air Pollution Management District, local fire departments, and the Environmental Health Division of the Kern County Department of Public Health Services. Businesses that generate hazardous waste are either Large-Quantity Generators (e.g., heavy industrial or commercial facilities) or Small-Quantity Generators (e.g., dry cleaners, automotive repair shops, etc.); these businesses require a U.S. EPA identification number used to monitor and track hazardous waste activities.

Certain land uses can indicate that there is potential for generating hazardous materials or waste, or that existing hazardous materials or waste may be present (for example, industrial use, gas stations, dry cleaners). Hazardous materials can also be used and generated during construction activities. Common hazardous materials that are typically present on construction sites include oil, transmission fluids, fuels, solvents, paints, asphalt, and adhesives. A variety of federal, state, and local regulations require best management practices to be implemented to ensure that these wastes are not released into the environment.

Transportation of Hazardous Materials

The transportation of hazardous materials within the State of California is subject to various federal, state, and local regulations. It is illegal to transport explosives or inhalation hazards on any public highway not designated for that purpose, unless the use of the highway is required to permit loading or delivery of such materials (California Vehicle Code Sections 31602(b), 32104(a)). The California Highway Patrol (CHP) designates through routes to be used for the transportation of hazardous materials. In Kern County, I-5, State Route 166, State Route 138, State Route 46, and a portion of Highway 99 are all designated as hazardous materials routes.[1] Transportation of hazardous materials is restricted to these routes except in cases where additional travel is required from that route to deliver or receive hazardous materials to and from users.

There are several risks associated with the transportation of hazardous materials. Transport of hazardous materials via truck, rail, and other modes involves a degree of risk of accident and release. The use of hazardous materials and the generation of hazardous waste in the construction and maintenance of the

---

1 Department of California Highway Patrol. 2023. Inhalation Hazardous Shipments: Routes and Stopping Places. Available at: https://www.chp.ca.gov/siteassets/forms/hph_84.5_2019_all_ada.pdf , accessed April 3, 2026.

transportation system are other avenues for risk or exposure. Past disposal of hazardous materials in a manner that creates residual contamination of soil or water can be a source of risk when such sites are disturbed in the course of construction, transportation projects, and development. Each of these avenues is discussed below.

Hazardous materials move through Kern County by a variety of modes: truck, rail, air, and pipeline. Any given shipment of hazardous materials can involve one or more movements, or trip segments, that can occur by different modes. For instance, a shipment might arrive at a port by ship (out of the County) and be picked up by a truck, with a transfer to rail, and a final delivery by truck again (for a total of four movements). Each movement of hazardous materials implies a degree of risk, depending on the material being moved, the mode of transport, and numerous other factors.

Vehicles transporting hazardous materials through Kern County use many of the same freeways, arterials, and local streets as other traffic in the region. This creates a risk of accidents and associated release of hazardous materials that could create a risk for drivers and for people living, working, and going to school along these routes. A similar risk exists for the use of rail for hazardous materials transport. Rail line maintenance is the responsibility of each private company that owns and operates each line. Many rail routes pass through urban areas and near sensitive land uses such as schools, hospitals, and residential areas. Rail shipments through urban areas and on local rail spurs usually travel at slower speeds than in rural areas, reducing the possibility of major safety-related accidents. In addition, shipping by rail is often safer than shipping by truck because rail tankers can reduce the number of trucks on the road hauling hazardous materials by four to 10 times, reducing the chances of truck-related accidents.

Pipelines tend to be protected because they are buried and result in relatively low risk, although they could be affected by seismic or other activity that could cause rupture. According to the USDOT, in 2025, incidents by transportation caused nearly $72.2 million in damages.[2] Highways accounted for the largest share of hazardous materials incidents, with a total of 25,436 incidents or 92.9 percent of total incidents. Air accounted for 6.0 percent of total hazardous materials incidents, followed by rail and water transport.[3]

---

2 U.S. Department of Transportation, *Hazmat Summary by Transportation Phase* , 2025. Available online at: https://portalpublic.phmsa.dot.gov/analytics/saw.dll?Portal , accessed March 25, 2026.

3 U.S. Department of Transportation, Hazmat Summary by Transportation Phase , 2025. Available online at: https://portalpublic.phmsa.dot.gov/analytics/saw.dll?Portal , accessed March 25, 2026.

Radioactive Materials

A number of nuclear power plants in California were proposed but never built. Most of the nuclear power stations within the state are now inoperative; only the Diablo Canyon Power Plant in San Luis Obispo County remains operational.

Contaminated Sites

In 2006, DTSC launched EnviroStor, which provides information such as identification of formerly contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites. **Table 4.9-1**, **Kern County DTSC EnviroStor Sites,** shows the status of the 40 active sites in Kern County that are listed in DTSC databases.

Table 4.9-1
Kern County DTSC EnviroStor Sites

Project	Project Type	Status
Avenue A Unauthorized Disposal Site	State Response	Active
Benham And Johnson	State Response	Active
Bridges And Son Trucking	State Response	Active
Brown And Bryant - Shafter Facility	State Response	Active
Brown And Bryant, Inc., Arvin Facility	Federal Superfund - Listed	Active
Chemical Waste Management Inc	Corrective Action	Active
Chester Cleaners	Evaluation	Active
Clean Harbors Buttonwillow LLC	Haz Waste - RCRA	Operating Permit - Land Use Restrictions
Courtauld's Aerospace	Voluntary Cleanup	Active - Land Use Restrictions
Crane's Waste Oil Inc	Haz Waste - Standardized	Operating Permit
Crystal Clean LLC	Haz Waste - State Only	Operating Permit
Delano PCE Plume	State Response	Active
Edwards Air Force Base	Haz Waste - RCRA	Operating Permit
Edwards Air Force Base - IR/MMRP	Federal Superfund - Listed	Active - Land Use Restrictions
Environmental Protection Corporation - Eastside Disposal Facility	State Response	Active
Epc Eastside Disposal Farm	Corrective Action	Active
Freeman's Cleaners (Vogue Cleaners)	Evaluation	Active
Great Lakes Carbon Corporation	Evaluation	Active
J R Simplot, Edison	State Response	Active - Land Use Restrictions
K & D Salvage	State Response	Active
Mobile Smelting	State Response	Active

Project	Project Type	Status
Mojave Gunnery Range - (J09ca7281) MMRP	State Response	Active
Naval Air Weapons Station China Lake	Haz Waste - RCRA	Operating Permit
Naval Air Weapons Station China Lake	Corrective Action	Active - Land Use Restrictions
Naval Air Weapons Station China Lake (NAWSCL)	State Response	Active - Land Use Restrictions
New City Cleaners (8th)	Evaluation	Active
Occidental Of Elk Hills Inc	Corrective Action	Active - Land Use Restrictions
Osage Industries, 15th Street	State Response	Active
Osage Industries, 60th Street West	State Response	Active
PG&E Former Bakersfield Mgp	Voluntary Cleanup	Active
Proposed Career Technical Education Site	School Investigation	Active
Proposed Northeast High School	School Investigation	Active
Puregro Kimberlina	Voluntary Cleanup	Active
Resource Renewal Technology, Inc. - Maricopa Facility	State Response	Active
S R Kilby Property	State Response	Active
Safe 1 Credit Union - Delano	Voluntary Cleanup	Active
San Joaquin Drum Company	State Response	Active
Sandoz Corp Protection Inc	Corrective Action	Active
Systech Environmental Corp	Corrective Action	Active
Westside Parkway/ Conoco Phillips Coke	Voluntary Cleanup	Active

Source:
DTSC Envirostor, Http://Www.Envirostor.Dtsc.Ca.Gov. 2026

Various federal, state, and local regulatory agencies maintain lists of hazardous materials sites where soil and/or groundwater contamination is known or suspected to have occurred, typically as a result of leaking storage tanks or other spills. These facilities are readily identified through regulatory agency database searches, such as the State Water Board GeoTracker online database, the DTSC Envirostor online database, and several other federal, state, and local regulatory agency databases. **Table 4.9-2, Description of Regulatory Agency Databases**, identifies key database references for hazardous materials.

Table 4.9-2
Description of Regulatory Agency Databases

Acronym	Name and Description of Database
NPL	The National Priorities List (NPL) of Superfund Sites is U.S. EPA's database of more than 1,200 sites designated for priority cleanup under the Superfund program. NPL sites may encompass relatively large areas.
RCRIS	The Resource Conservation and Recovery Information System (RCRIS) is a U.S. EPA database that includes selective information on sites that generate, transport, store, treat, and/or dispose of hazardous waste as defined by Resource Conservation and Recovery Act (RCRA). Identification on this list does not indicate that there has been an impact on the environment.
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) is an EPA database that contains information on potential hazardous waste sites that have been reported to EPA by states, municipalities, private companies, and individuals, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites that are either proposed for or on the NPL, as well as sites that are in the screening and assessment phase for possible inclusion on the NPL.
CORRACTS	Corrective Action Report (CORRACTS) is a U.S. EPA database that identifies hazardous waste handlers with RCRA corrective action activity.
RAATS	RCRA Administrative Action Tracking System (RAATS) is a U.S. EPA database that contains records based on enforcement actions issued under RCRA pertaining to major violators, and includes administrative and civil actions brought by U.S. EPA.
PADS	PCB Activity Database System (PADS) is a U.S. EPA database that identifies generators, transporters, commercial storers, and/or brokers and disposers of polychlorinated biphynels (PCBs) who are required to notify U.S. EPA of such activities.
Geotracker	Geotracker is the State Water Resources Control Board's Internet-accessible database system used by the State Board, regional boards, and local agencies to track and archive compliance data from authorized or unauthorized discharges of waste to land, or unauthorized releases of hazardous substances from underground storage tanks.
CHMIRS	The California Hazardous Material Incident Report System (CHMIRS) contains information on reported hazardous materials incidents (i.e., accidental releases or spills). The source of this information is the California Office of Emergency Services.
ERNS	The Emergency Response Notification System (ERNS) records and stores information on reported releases of oil and hazardous substances. The source of this database is the U.S. EPA.
CALSITES	List of hazardous waste and substances sites from the DTSC Envirostor database.
CORTESE	The Cortese database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with underground storage tanks (USTs) having a reportable release, and all solid waste disposal facilities from which there is known hazardous substance migration. The source of this database is the California Environmental Protection Agency (CAL-EPA).
LUST	The Leaking Underground Storage Tank (LUST) Incident Reports contain an inventory of reported leaking underground storage tank incidents. This information comes from the State Water Resources Control Board Leaking Underground Storage Tank Information System.
UST	The Underground Storage Tank (UST) database lists registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The UST information comes from the State Water Resources Control Board's Hazardous Substance Storage Container Database.
HIST UST	The Hazardous Substance Storage Container Database is a historical listing of UST sites. The data source is the State Water Resources Control Board.
CA FID	The Facility Inventory Database (CA FID) lists active and inactive underground storage tank locations. This database is maintained by the State Water Resources Control Board.
HAZNET	The Hazardous Waste Information System (HAZNET) includes data extracted from the copies of hazardous waste manifests each year by the State Department of Toxic Substances Control.
FINDS	The Facility Index System (FINDS) contains both facility information and "pointers" to other sources of information that contain more detail (e.g., RCRA Info, Permit Compliance System [PCS], Aerometric Information Retrieval System [AIRS]). The source of this information is the US EPA.

Acronym	Name and Description of Database
FTTS	The Federal Toxics Tracking System (FTTS) tracks administrative cases and pesticide enforcement actions/compliance activities related to the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA), Toxic Substances Control Act (TSCA), and Emergency Planning and Community Right-to- Know Act (EPCRA). The source of this data is the U.S. EPA Office of Prevention, Pesticides, and Toxic Substances.
CA SLIC	The statewide Spills, Leaks, Investigations, and Cleanups (CA SLIC) database includes unauthorized discharges from spills and leaks, other than from underground storage tanks or other regulated sites. The data source is the State Water Resources Control Board.
EMI	Emissions Inventory Data (EMI) is comprised of toxics and criteria pollutant emissions data collected by the state Air Resources Board and local pollution agencies.
SWEEPS	The Statewide Environmental Evaluation and Planning System (SWEEPS) UST list, which is no longer maintained or updated, was under the purview of the State Water Resources Control Board. Other agencies (e.g., as identified above) now maintain UST records.

Source:
State Water Board, EPA, DTSC, 2026

An underground storage tank (UST) system is a tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground. There are approximately 544,000 USTs nationwide that store petroleum or hazardous substances.[4] The greatest potential threat from a leaking UST is contamination of groundwater, the source of drinking water for nearly half of all Americans. In 1985, the U.S. EPA created the Office of Underground Storage Tanks to carry out a Congressional mandate to develop and implement a regulatory program for UST systems. U.S. EPA works with its state, territorial, and tribal partners to prevent and clean up releases from UST systems.[5] When the UST program began, there were approximately 2.1 million regulated tanks in the United States. Today, there are far fewer regulated tanks, since many substandard UST systems have been removed and closed.

A UST can present other health and environmental risks, including the potential for fire and explosion. Until the mid-1980s, most USTs were made of bare steel, which is likely to corrode over time and allow UST contents to leak into the environment. Faulty installation or inadequate operating and maintenance procedures also can cause USTs to release their contents into the environment There are approximately 434 operational USTs within Kern County.[6]

4 West Virginia Department of Environmental Protection, *UST Resources*, 2026. Available online at: https://dep.wv.gov/WWE/ee/tanks/ust/Pages/USTRelatedLinks.aspx, accessed on April 3, 2026.

5 US Environmental Protection Agency, *Underground Storage Tanks*. Available at: http://www.epa.gov/oust/, accessed April 3, 2026.

6 US Environmental Protection Agency, Underground Storage Tank Finder. Available at: https://www.epa.gov/ust/ust-finder , accessed April 3, 2026.

4.9.1.2 Schools

CEQA Guidelines require EIRs to assess whether a project would emit hazardous air emissions or involve the handling of extremely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school. Children are particularly susceptible to long-term impacts from emissions of hazardous materials from roadways near schools, as well as high-volume motor vehicle travel on roadways through residential areas. There are numerous schools located throughout the Kern region. For more information related to schools, refer to **Section 4.15.3, Schools**, and **Section 4.3, Air Quality.**

4.9.1.3 Hazards

The following discussion addresses general hazards associated with airports and emergency response planning.

Airports

Hazards associated with airport operations are generally associated with aircraft accidents. Aircraft accidents of most concern occur during takeoff and landing operations, during which aircraft are operated close to the ground and within close proximity to one another. Potential hazards around an airport can be increased due to many external factors, such as incompatible land uses in the vicinity of the airport, installation of power transmission lines, wildlife hazards (i.e., bird strikes, migrating wildlife, etc.), and construction of tall structures.

In order to mitigate the potential hazards of tall structures within the vicinity of an airport, the Federal Aviation Administration (FAA) established airport height restrictions, defined by Federal Aviation Regulation (FAR) Part 77. FAR Part 77, which establishes "imaginary surfaces" around an airport where a structure is considered to pose a hazard to an aircraft. FAR Part 77 requires that the FAA be notified prior to the construction of any structure that would pierce these imaginary surfaces. However, the FAA cannot prohibit the construction of such structures. The State of California goes further, requiring that a permit be obtained from the State Division of Aeronautics prior to construction of such a structure.

In addition to imaginary surfaces, a safety restriction area is established around airports within which it is assumed that hazards may exist to people or structures on the ground in the event of an aircraft accident. Nationwide studies of aircraft accidents have found the following:

- Almost half of all accidents occur on airport property
- An additional 15 percent of aircraft accidents occur outside airport property but within one (1) mile of the airport runway(s)

- A substantial concentration of aircraft accidents occurs within the initial climb-out and the final approach sectors of airports

Further refinement of these data points to an increased risk near the ends of the runway and under the airport traffic pattern. In order to reduce these risks, especially those related to land use in these areas, safety restriction areas are established around airports, which restrict certain land uses in the vicinity of an airport. Typically, three types of areas are established. The clear zone is an area at each end of the runway(s) within 200 feet of the runway threshold. The clear zone is the most restrictive safety area. The approach/departure zone extends beyond the clear zone and is aligned with the runway as well. The overflight zone represents the area commonly overflown by aircraft utilizing the airport. The overflight zone surrounds the airport and is the least restrictive safety area.

With limited exceptions, an Airport Land Use Commission (ALUC) is required by California law in every county with airports in its jurisdiction. Each ALUC must develop a plan for promoting and ensuring compatibility between each airport in the county and surrounding land uses. Imaginary surfaces and safety restriction areas are established as part of the Airport Land Use Compatibility Plan (ALUCP) for the airport. Prepared and approved by the local Airport Land Use Commission, the ALUCP establishes guidelines for development in the vicinity of the airport in the areas of noise impacts, safety hazards, and height restrictions. **Figure 4.9-1, Airports in Kern County,** illustrates the location of each airport in the County, and **Table 4.9-3, Airports in Kern County**, lists the public airports in Kern County.

Table 4.9-3
Airports in Kern County

Airport	Location
Bakersfield Municipal Airport	Bakersfield
California City Municipal Airport	California City
Delano Municipal Airport	Delano
Edwards Air Force Base	Rosamond
Elk-Hills Buttonwillow Airport	Buttonwillow
Inyokern Airport	Indian Wells
Kern Valley Airport	Kernville
Lost Hills Airport	Lost Hills
Meadows Field Airport	Bakersfield
Mojave Air and Space Port	Mojave
Mountain Valley Airport	Tehachapi
Poso Airport	Poso

Airport	Location
Rosamond Skypark Airport	Rosamond
Shafter Minter-Filed Airport	Shafter
Taft Airport	Taft
Tehachapi Municipal Airport	Tehachapi
US Naval Air Weapons Station	China Lake
Wasco Airport	Wasco

Source:
Kern COG 2026, Impact Sciences 2026

Emergency Response and Evacuation Plans

Emergency response plans include elements to maintain continuity of government, emergency functions of governmental agencies, mobilization, and application of resources, mutual aid, and public information. Emergency response plans are maintained at the federal, state, and local levels for all types of disasters, human-made and natural. It is the responsibility of government to undertake an ongoing comprehensive approach to emergency management in order to avoid or minimize the effects of hazardous events. Local governments have the primary responsibility for preparedness and response activities.

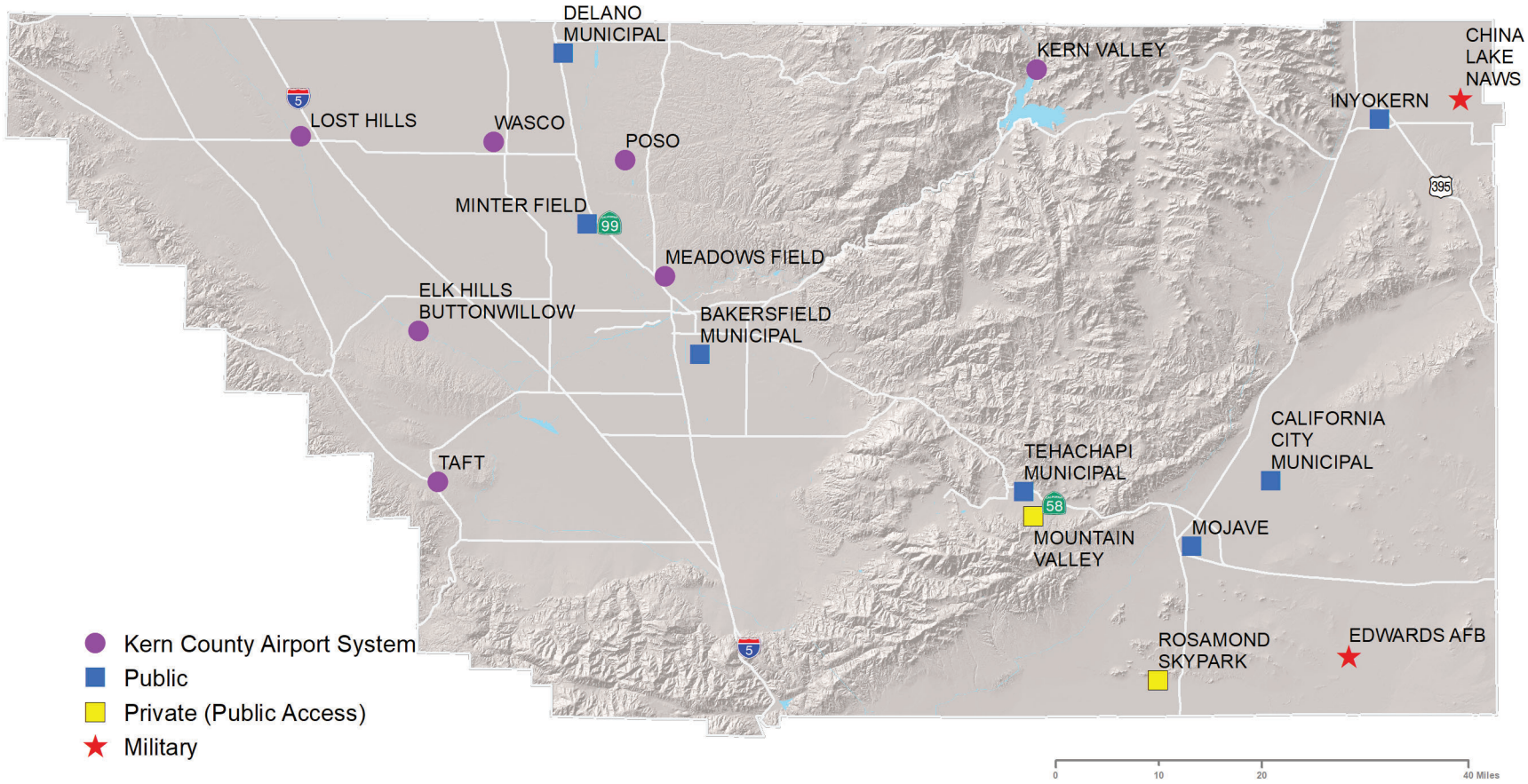
The Kern County Fire Department, Office of Emergency Services (OES) prepared the Multi-Hazard Functional Plan, which is the Countywide disaster preparedness program, including dam evacuation procedures, wildland fire threats, and hazardous materials incidents. OES also provides training for first responders, businesses, and other governmental agencies.

4.9.2 REGULATORY FRAMEWORK

4.9.2.1 Federal

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act, as amended, is the basic statute regulating hazardous materials transportation in the United States. The purpose of the law is to provide adequate protection against the risks to life and property inherent in transporting hazardous materials in interstate commerce. This law gives the US DOT and other agencies the authority to issue and enforce rules and regulations governing the safe transportation of hazardous materials.



SOURCE: Kern COG, 2026

FIGURE **4.9-1**

IMPACT SCIENCES

Airports in Kern County

1170.004•04/26

Department of Transportation Regulations

The Secretary of the Department of Transportation receives the authority to regulate the transportation of hazardous materials from the Hazardous Materials Transportation Act (HMTA), as amended and codified in 49 USC 5101 et seq. The Secretary is authorized to issue regulations to implement the requirements of 49 USC The Pipeline and Hazardous Materials Safety Administration (PHMSA) (formerly the Research and Special Provisions Administration [RSPA]) was delegated the responsibility to write the hazardous materials regulations, which are contained in 49 CFR Parts 100-180.

Under the HMTA, the Secretary:

> *May authorize any officer, employee, or agent to enter upon inspect, and examine, at reasonable times and in a reasonable manner, the records and properties of persons to the extent such records and properties relate to: (1) the manufacture, fabrication, marking, maintenance, reconditioning, repair, testing, or distribution of packages or containers for use by any "person" in the transportation of hazardous materials in commerce; or (2) the transportation or shipment by any "person" of hazardous materials in "commerce.*

Environmental Protection Agency Regulations

The U.S. EPA's mission is to protect human health and the environment. The U.S. EPA takes action to reduce risks associated with exposure to chemicals in commerce, indoor and outdoor environments, and products and food. The U.S. EPA continues to oversee the introduction and use of pesticides, improve its Integrated Risk Information System (IRIS) program, reduce radon risks, identify and address children's health risks in schools and homes, and improve chemical management practices. Oversight of chemical storage and manufacturing in coordination with their interagency partners remains a key focus of the U.S. EPA, as well as efforts to reduce urban air toxics.

Resource Conservation and Recovery Act (RCRA)

RCRA gives the U.S. EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste by "large-quantity generators" (1,000 kilograms/month or more). Under RCRA regulations, hazardous wastes must be tracked from the time of generation to the point of disposal. At a minimum, each generator of hazardous waste must register and obtain a hazardous waste activity identification number. If hazardous wastes are stored for more than 90 days or treated/disposed of at a facility, any treatment, storage, or disposal unit must be permitted under RCRA. Additionally, all hazardous waste transporters are required to be permitted and must have an identification number. RCRA allows individual states to

develop their own program for the regulation of hazardous waste as long as it is at least as stringent as RCRA. In California, the U.S. EPA has delegated RCRA enforcement to the State of California.

Toxic Substances Control Act (TSCA)

Congress enacted the Toxic Substances Control Act (TSCA) of 1976 to give the U.S. EPA the ability to track the 75,000 industrial chemicals currently produced or imported into the United States. U.S. EPA repeatedly screens these chemicals and can require reporting or testing of those that may pose an environmental or human-health hazard. U.S. EPA can ban the manufacture and import of those chemicals that pose an unreasonable risk.

Research and Special Programs Administration (RSPA) Regulations

RSPA regulations cover the definition and classification of hazardous materials, communication of hazards to workers and the public, packaging and labeling requirements, operational rules for shippers, and training. They apply to interstate, intrastate, and foreign commerce by air, rail, ships, and motor vehicles, and also cover hazardous waste shipments. The Federal Highway Administration (FHWA) is responsible for highway routing of hazardous materials and highway safety permits. The US Coast Guard regulates bulk transport by vessel. The hazardous material regulations include emergency response provisions, including incident reporting requirements. Reports of major incidents go to the National Response Center, which in turn is linked with CHEMTREC, a service of the chemical manufacturing industry that provides details on most chemicals shipped in the United States.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

CERCLA (generally referred to as Superfund) was enacted by Congress on December 11, 1980. CERCLA provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites; provides for liability of persons responsible for releases of hazardous waste at these sites; and establishes a trust fund to provide for cleanup when no responsible party can be identified. CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the NPL sites, which is the list of hazardous waste sites eligible for long-term remedial action financed under the federal Superfund program. CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

Superfund Amendments and Reauthorization Act (SARA) of 1986

SARA of 1986 reauthorized CERCLA to continue cleanup activities around the country. Several site-specific amendments, definitions, clarifications, and technical requirements were added to the legislation, including additional enforcement authorities.

Occupational Safety and Health Act of 1970

The Occupational Safety and Health Act, which is implemented by the Federal Occupational Safety and Health Administration (OSHA), contains provisions with respect to hazardous materials handling. Federal OSHA requirements, as set forth in Title 29 of the Code of Federal Regulations (CFR) Section 1910, et. Seq., are designed to promote worker safety, worker training, and a worker's right–to-know. In California, OSHA has delegated the authority to administer OSHA regulations to the State of California.

Title 49 of the CFR, which contains the regulations set forth by the Hazardous Materials Transportation Act of 1975, specifies additional requirements and regulations with respect to the transport of hazardous materials. Title 49 of the CFR requires that every employee who transports hazardous materials receive training to recognize and identify hazardous materials and become familiar with hazardous materials requirements. Drivers are also required to be trained in the operations of their equipment and commodity-specific requirements.

Emergency and Community Right to Know Act (EPCRA)

EPCRA was enacted by Congress as the national legislation on community safety. This law was designated to help local communities protect public health, safety, and the environment from chemical hazards. EPCRA was passed in response to concerns regarding the environmental and safety hazards posed by the storage and handling of toxic chemicals. EPCRA establishes requirements for federal, state, and local governments, tribes, and industry regarding emergency planning and "Community Right-to-Know" reporting on hazardous and toxic chemicals. The Community Right-to-Know provisions help increase the public's knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. States and communities, working with facilities, can use the information to improve chemical safety and protect public health and the environment. To implement EPCRA, Congress required each state to appoint a State Emergency Response Commission (SERC). The SERCs were required to divide their states into Emergency Planning Districts and to name a Local Emergency Planning Committee for each district.

4.9.2.2 State

California Environmental Protection Agency (Cal/EPA) and California Department of Toxic Substances Control (DTSC) Regulations

The California EPA includes the Department of Toxic Substances Control (DTSC), whose mission is to protect California's people and environment from the harmful effects of toxic substances through the restoration of contaminated resources, enforcement, regulation, and pollution prevention. The DTSC regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California. Approximately 1,000 scientists, engineers, and specialized support staff ensure that companies and individuals handle, transport, store, treat, dispose of, and clean up hazardous wastes appropriately. Through these measures, DTSC contributes to greater safety for all Californians, and less hazardous waste reaches the environment.

DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code. The DTSC regulates hazardous waste, cleans up existing contamination, and researches ways to reduce the hazardous waste produced in California. In addition, the DTSC develops legislation, coordinates with lawmakers, and responds to constituent complaints. The regulations spell out what those who handle hazardous waste must do to comply with the laws.

Statewide, DTSC cleans up or oversees approximately 220 hazardous substance release sites at any given time and completes an average of 125 cleanups each year. Ensuring compliance through inspection and enforcement is an important part of effectively regulating hazardous waste. DTSC conducts roughly 200 inspections a year. DTSC's Criminal Investigations Branch has the only law enforcement officers in the Cal/EPA. These peace officers, with the powers of arrest, search, and seizure, investigate alleged criminal violations of the Hazardous Waste Control Law. They work closely with district attorneys' offices, the federal Environmental Protection Agency, the Federal Bureau of Investigation, and law enforcement personnel in other states.

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires that any business that handles hazardous materials prepare a business plan, which must include the following:

- Details, including floor plans, of the facility and business conducted at the site;
- An inventory of hazardous materials that are handled or stored on-site;
- An emergency response plan; and

- A safety and emergency-response training program for new employees with annual refresher courses.

California Occupational Safety and Health Administration (Cal OSHA) Regulations

Cal OSHA has set forth work requirements for disturbance of Asbestos Containing Construction Materials (ACCMs), including removal operations for all types of ACCMs. In addition, the agency has developed standards for general industry and the construction industry hazardous waste operations and emergency response. Cal OSHA ensures that employers must have controls to reduce and monitor exposure levels of hazardous materials, an informational program describing any exposure during operations, and the inspection of drums and containers prior to removal or opening. Decontamination procedures and emergency response plans must be in place before employees begin working in hazardous waste operations.

California Office of Emergency Services (CAL OES) Regulations

The Cal OES Hazardous Materials (HazMat) Section under the Fire and Rescue Division coordinates statewide implementation of hazardous materials accident prevention and emergency response programs for all types of hazardous materials incidents and threats. In response to any hazardous materials emergency, the section staff is called upon to provide state and local emergency managers with emergency coordination and technical assistance.

Hazardous Waste Control Act

The Hazardous Waste Control Act created the state hazardous waste management program, which is similar to but more stringent than the federal Resource Conservation and Recovery Act program. The act is implemented by regulations contained in Title 26 of the CCR, which describes the following required aspects for the proper management of hazardous waste: identification and classification; generation and transportation; design and permitting of recycling, treatment, storage, and disposal facilities; treatment standards; operation of facilities and staff training; and closure of facilities and liability requirements. These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the Hazardous Waste Control Act and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from the generator to the transporter to the ultimate disposal location. Copies of the manifest must be filed with DTSC.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) required the administrative consolidation of six hazardous materials and waste programs (Program Elements) under one agency, a Certified Unified Program Agency (CUPA). The Program Elements consolidated under the Unified Program are: Hazardous Waste Generator and On-site Hazardous Waste Treatment Programs (a.k.a. Tiered Permitting); Aboveground Petroleum Storage Tank Spill Prevention Control and Countermeasure Plan (SPCC); Hazardous Materials Release Response Plans and Inventory Program (a.k.a. Hazardous Materials Disclosure or "Community-Right-To-Know"); California Accidental Release Prevention Program (Cal ARP); UST Program; and Uniform Fire Code Plans and Inventory Requirements. The Unified Program is intended to provide relief to businesses complying with the overlapping and sometimes conflicting requirements of formerly independently managed programs. The Unified Program is implemented at the local government level by CUPAs. Most CUPAs have been established as a function of a local environmental health or fire department. Some CUPAs have contractual agreements with another local agency, a participating agency, which implements one or more Program Elements in coordination with the CUPA.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined as unsafe raw or unused materials that are part of a process or manufacturing step. They are not considered hazardous waste. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste.

Hazardous Waste Source Reduction and Management Review Act of 1989

This Act requires generators of 12,000 kilograms/year of typical/operational hazardous waste to conduct an evaluation of their waste streams every four years and to select and implement viable source reduction alternatives. This Act does not apply to non-typical hazardous waste (such as asbestos and polychlorinated biphenyls).

California Vehicle Code

The California Vehicle Code (Title 13 of the CCR) establishes regulations for motor carrier transport of hazardous materials. For example, all motor carrier transporters of hazardous materials are required to

have a Hazardous Materials Transportation license issued by the California Highway Patrol. In addition, placards identifying that hazardous materials are being transported must be displayed on the vehicle.

California Health and Safety Code

The transport of hazardous waste materials is further governed by the California Health and Safety Code Section 25163 and Title 22, Chapter 13, of the CCR. Specifically, Section 25163 of the California Health and Safety Code requires transporters of hazardous waste to hold a valid registration issued by the DTSC in his/her possession while transporting hazardous waste. Additionally, Title 22, Chapter 13 of the CCR includes a number of requirements, which include, but are not limited to, the following:

- Transporters shall not transport hazardous waste without first receiving an identification number and a registration certificate from DTSC;
- Registration as a hazardous waste transporter expires annually, on the last day of the month in which the registration was issued;
- To be registered as a hazardous waste transporter, an application must be submitted;
- Hazardous waste shall not be accepted for transport without a Uniform Hazardous Waste Manifest that has been properly completed and signed by generator and transporter;
- Hazardous waste shall be delivered to authorized facilities only; and
- School sites should not pose environmental hazards or other site complications that pose a threat to the health and safety of students and staff.

4.9.2.3 Local

Fire Departments and other agencies in Kern County have a variety of local laws that regulate reporting, storage, and handling of hazardous materials and wastes. The Kern County Municipal Code prohibits the storage of flammable cryogenic fluids in stationary containers and the storage of flammable or combustible liquids in outside above-ground tanks.[7]

While each jurisdiction within Kern County may have plans and policies applicable to RTP Transportation and/or development projects, the policies of the two largest jurisdictions, Kern County and the City of Bakersfield, are presented here. Other communities have similar policies.

---

7 Kern County Municipal Code, Title 17, Section 17.32.002 and 17.332.003.

County of Kern General Plan

The County of Kern includes policies in its General Plan that relate to the use and transport of hazardous materials. Hazardous materials are addressed within the Safety Element of the General Plan. The following policies are relevant to projects within the jurisdiction of Kern County:

- The proposed siting or expansion of hazardous waste facilities will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.
- Innovative technologies to manage hazardous waste streams generated in Kern County will be encouraged.
- The County should protect residents from the hazards associated with development in areas where wells have been drilled and abandoned for exploration and/or production of oil and natural gas.
- Continue to maintain and update the Kern County Emergency Plan and continuously educate program participants of their responsibilities.
- Monitor, enforce, and update, as appropriate, all emergency plans as needed and as conditions change.
- Prior to approval, all new discretionary residential projects located in the Airport Influence Areas will be reviewed for compatibility with the Airport Land Use Compatibility Plan.
- Prior to approval, all new discretionary commercial projects located in the Airport Influence Areas will be reviewed for compatibility with the Airport Land Use Compatibility Plan.
- Prior to approval, all new discretionary industrial projects located in the Airport Influence Areas will be reviewed for compatibility with the Airport Land Use Compatibility Plan.

City of Bakersfield

The City of Bakersfield General Plan includes the following policies related to hazards and hazardous materials.

- Ensure compatibility between the general plan, airport master plan, and airport land use compatibility plans.
- Allow for the establishment of private airports and heliports/helipads.

- Encourage and provide for the orderly development of public use airports within the planning area and prevent the creation of new noise and safety impacts.

- Provide for periodic update (every five years) of the Airport Land Use Compatibility Plan, subject to the availability of funding, to ensure that airport vicinity planned land uses are in conformance with airport land use compatibility criteria.

4.9.3 ENVIRONMENTAL IMPACTS

4.9.3.1 Thresholds of Significance

For the purposes of this EIR, Kern COG has determined that adoption and/or implementation of the 2026 RTP would result in significant impacts due to the use and/or transportation of hazards and hazardous materials, if any of the following would occur:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school.

- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or environment.

- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, or a project located within the vicinity of a private airstrip, results in a safety hazard for people residing or working in the project area.

- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. (Addressed in **Section 4.18, Wildfire**)

4.9.3.2 Methodology

The potential for implementation of the Plan to expose people or property to risk from hazards or hazardous materials was evaluated in accordance with Appendix G of the *State California Environmental Quality Act (CEQA) Guidelines*, and at the programmatic level of detail, in relation to the general plans of the county and the cities within the region, a query of government data bases, and a review of related literature germane to the region.

The methodology for determining the significance of hazardous material impacts compares the existing conditions (2025) to the future 2049 conditions under the Plan, as required in CEQA Section 15126.2(a). Implementation of the Plan would affect the transportation and handling of hazardous materials in the region by improving and increasing transportation routes in proximity to sensitive receptors such as educational and residential uses. The potential for risk related to the transport of hazardous materials was assessed by evaluating the locations of proposed transportation projects in relation to the surrounding uses, as well as potential significant impacts related to the risk of accidental releases of hazardous materials due to an increase in the transportation of hazardous materials and the potential for such releases to reach schools, and communities adjacent to transportation facilities included in the Plan.

In 2015, the California Supreme Court in *CBIA v. BAAQMD*, held that CEQA generally does not require a lead agency to consider the impacts of the existing environment on the future residents or users of a project. However, if a project exacerbates a condition in the existing environment, the lead agency is required to analyze the impact of that exacerbated condition on future residents and users of a project, as well as other impacted individuals. The following discussion presents a programmatic, regional evaluation of potential impacts of transportation projects, land use strategies, and development projects anticipated to occur under the Plan on increased risk of exposure to hazardous materials.

Determination of Significance

The methodology for determining the significance of hazardous impacts compares the existing conditions to the proposed RTP conditions in 2049, as required by *State CEQA Guidelines* Section 15126.2(a). The known hazardous materials located within the region were evaluated using the criteria set forth by the California DTSC, the U.S. EPA, and the *State CEQA Guidelines*.

The analysis is based on an assessment of growth (population, housing, and employment) projected for the region and in the TPAs by 2049, and an assessment of how that growth will impact, or be impacted by, hazards and hazardous materials. Individual project sites within Kern County were not physically surveyed, rather this is a programmatic analysis based on a brief description of the types of hazards and hazardous materials issues found within the region.

Roadway transportation projects consist of freeway, high-occupancy vehicle (HOV) lanes, auxiliary, arterial/expressway miles, collector and local streets, Class I bicycle and pedestrian facilities, and Class II bicycle lanes. Different project types will have different impacts on or be differently impacted by hazards and hazardous materials.

The evaluation of hazards and hazardous materials impacts in this section assumes that construction and development in Kern County will adhere to applicable federal, state, and local regulations and will conform to the applicable industry standards, as appropriate for individual projects. The issue area of hazardous materials and wastes, as well as hazards in general, is a well-regulated issue area (see Regulatory Framework above); compliance with all applicable regulations would substantially reduce hazards associated with the 2026 RTP.

Approach to Mitigation

As discussed in **Chapter 1.0, Introduction,** Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

4.9.3.3 Impact and Mitigation Measures

Impact HAZ-1 **Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.**

Regional and Transit Priority Areas Impacts

Regional development will increase density and population, and it will include a variety of land uses, including residential, commercial, and industrial uses, as well as new schools and hospitals. In proximity to residential areas and other sensitive receptors, new (and existing) businesses that use hazardous materials include dry cleaners, gas and service stations, industrial uses (that can use and generate a variety of hazardous materials and wastes), agricultural uses (herbicides and pesticides), etc. All of these uses/businesses require the routine transport, use, and disposal of hazardous materials. In addition, sensitive uses themselves (residences, hospitals, schools) use and generate household hazardous materials and wastes, including cleaning supplies, solvents, and paints.

In this analysis, anticipated future land uses are discussed in general programmatic terms. Project-specific, parcel-level future land uses are unknown. Routine transportation of hazardous materials, including through traffic, poses a risk to residents within Kern County at the regional and TPA levels as a result of potential accidents involving trucks, rail, and other modes that are used to transport hazardous materials and wastes and are shared with the public. projects within the RTP have the potential to increase rail capacity and rail traffic. It is expected that some rail traffic will include hazardous shipments such as oil or other materials. An increase in the amount of rail traffic could increase the potential for risk of hazardous materials upset over the lifetime of the plan.

The operation of businesses (including transportation to and from such businesses) that use, create, or dispose of hazardous materials is regulated and monitored by federal, state, and local regulations and policies. These regulations and policies provide a high level of protection to the public and the environment.

A variety of transportation improvements are included in the 2026 RTP, such as new HOV lanes, auxiliary lanes, roadway widening, new interchanges, freight rail, bicycle and pedestrian infrastructure improvements, transit facilities, increased transit service, and roadway maintenance and rehabilitation projects. The 2026 RTP projects involve the expansion or extension of the transportation system, which may increase the capacity to transport hazardous materials. Roadway improvements in the 2026 RTP, while increasing capacity, would also improve road safety, as well as pedestrian and bicycle safety, thereby possibly reducing the potential for transportation-related hazardous materials risks.

Implementation of the transportation network improvements as well as anticipated development, would involve an increase in the routine transport, use, and disposal of hazardous materials, particularly the highway and arterial improvement projects and freight rail, which could result in increased transport of hazardous goods, as well as the use of equipment that contains or uses routine hazardous materials (e.g., diesel-fueled equipment), or the transportation of excavated soil and/or groundwater containing contaminants from areas that are identified as being contaminated. In addition, the construction and maintenance of transportation facilities included in the proposed RTP would involve the use of hazardous materials such as solvents, paints, and other architectural coatings.

As discussed above, existing federal, state, and local regulations and policies that govern the use of hazardous materials strictly regulate the proper handling of such materials and their containers. Nonetheless, it is expected that the anticipated increase in the routine transport, use, and disposal of hazardous materials could create a significant hazard to the public or the environment as a result of the expected increased amount of transport of hazardous materials (although the accident rate would be anticipated to remain the same or improve due to an improved transportation system, such as the various widening an safety improvement projects in the RTP). For instance, Policy 22.2 of Chapter 2 – Transportation of the RTP calls for program safety-related infrastructure improvements, such as widening of Seventh Standard Road, SR 46, and 43, in response to proposed freight movement activities in the area. Additionally, there are policies and actions in the RTP that encourage the efficiency of goods movement. Therefore, impacts from the routine use and transport of hazardous materials as a result of land use and transportation improvements in the 2026 RTP are considered potentially significant for **Impact HAZ-1**. As discussed above, the improved roadway system and compliance with existing regulations would reduce these impacts, but potentially not to a less than significant level.

Level of Significance before Mitigation

Potentially significant.

Mitigation Measures

Existing regulations, such as the California Vehicle Code (Title 13 of the CCR), California Health and Safety Code Section 25163, and Title 22, Chapter 13, of the CCR, address this impact. No additional mitigation is available.

Level of Significance After Mitigation

The improved roadways system and compliance with existing regulations would reduce this impact but potentially not to a less than significant level. Therefore, this impact is considered significant and unavoidable at the programmatic level of analysis.

Impact HAZ-2 **Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.**

Regional and Transit Priority Area Impacts

Regional development will increase density and population, and it will include a variety of land uses that will increase the potential for upset or accident conditions involving the release of hazardous materials into the environment. In this analysis, anticipated future land uses are discussed in general programmatic terms. Project-specific, parcel-level future land uses are unknown. Regional development including at the TPA level will generally increase the number of land uses that require the use, storage, and transport of hazardous materials. Such land uses would include dry cleaners, gas stations and service stations, industrial uses, agricultural uses, etc. Businesses that store large quantities of hazardous materials (e.g., fuel storage facilities, chemical warehouses, etc.), can be subject to accidents that result from transporting, pumping, pouring, emptying, injecting, spilling, and dumping or disposing of hazardous materials and wastes and that could be released into the environment. The severity of potential effects varies with the activity conducted and the concentration and type of waste involved.

Existing federal, state, and local regulations and policies that govern the use of hazard materials strictly regulate the proper handling of such materials and their containers to ensure that accidents involving the release of toxic materials into the environment do not occur.

The 2026 RTP transportation projects involve the expansion or extension of the transportation system, which, as noted above, may increase the capacity to transport hazardous materials. Gas or oil spilling from vehicle accidents or a tanker overturning on a highway could release hazardous materials. Transportation improvements that expand the transportation system and extend it to new areas expose more adjoining land uses to risks associated with risk of upset on the roadway, highway, or railroad.

As discussed above, existing federal, state, and local regulations and policies that govern the use of hazardous materials strictly regulate the proper handling of such materials and their containers to minimize accidents involving the release of toxic materials into the environment. Specifically, Chapter 4 of the RTP titled Sustainable Communities Strategy includes a policy to increase transportation and

public safety in order to lower accident rates on highways and local streets and roads, while Chapter 2 – Transportation – calls to expand accident reduction campaigns on Kern's rural highways and county roads. Nonetheless, the potential for increased hazards as a result of increased facilities that use hazardous materials creates the potential for increased accidents and upset conditions as a result of land use and transportation improvements in the 2026 RTP. Therefore, **Impact HAZ-2** is considered potentially significant. Existing regulations would reduce this impact but potentially not to a less than significant level.

Level of Significance before Mitigation

Potentially significant.

Mitigation Measures

Existing regulations, such as the California Vehicle Code (Title 13 of the CCR), California Health and Safety Code Section 25163, and Title 22, Chapter 13, of the CCR, address this impact. No additional mitigation is available.

Level of Significance After Mitigation

Compliance with existing regulations would reduce this impact, but potentially not to a less than significant level. Therefore, this impact is considered significant and unavoidable at the programmatic level of analysis.

Impact HAZ-3 **Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.**

Regional and Transit Priority Area Impacts

Regional development will increase density and population, which will increase the potential for hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school. There are currently more than 250 schools within the Kern COG region, and a variety of land uses that are in proximity to these schools.

Table 4.9-4, Sensitive Receptors within 0.25 mile of RTP Projects, identifies the number of new sensitive receptors that would be located near RTP transportation projects included in the 2026 RTP; the table also identifies the number of new sensitive receptors that would be near transportation projects included in the No Project Alternative. **Figure 4.9-2, Sensitive Receptors within 0.25 mile of Highways Under the**

2049 RTP Plan, and **Figure 4.9-3, Sensitive Receptors within 0.25 of Highways Under the 2049 No Project Alternative,** highlight the location of the schools and hospitals included in **Table 4.9-4** and the RTP transportation projects as well as the No Project conditions.

Table 4.9-4
Sensitive Receptors within 0.25 mile of RTP Transportation Projects

Land Use Type	No Project	2026 RTP
Hospitals	0	3
Schools	0	21
Residential (households)	1,006	23,642

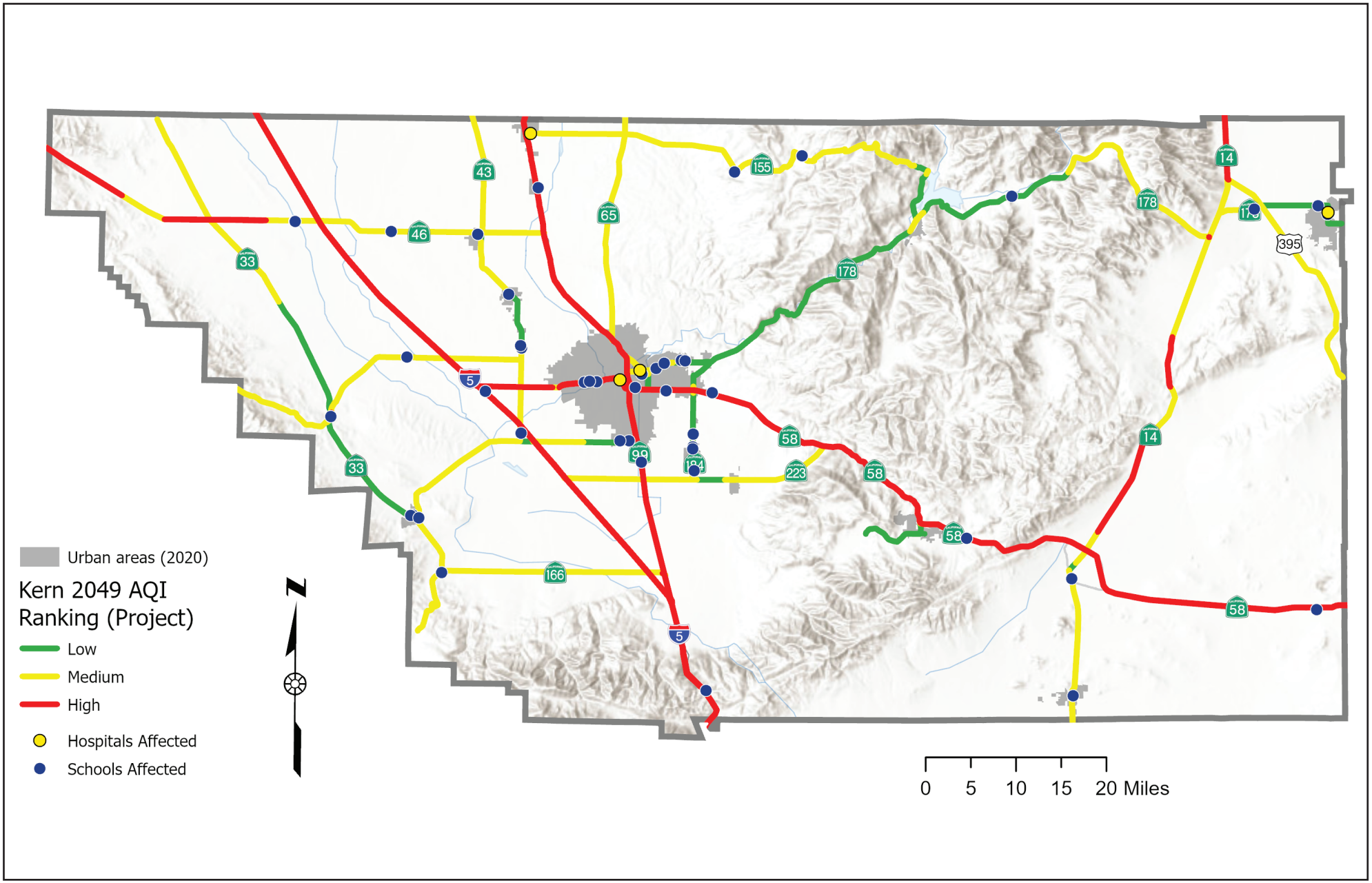
Source: Kern COG 2026 RTP

Compliance with existing federal, state, and local regulations and policies would ensure that hazardous materials do not pose a significant increase in risk to nearby sensitive receptors. For example, as described in the local policies section above, siting of hazardous waste projects or the expansion of such facilities is required to be reviewed for consistency with the Kern County and Incorporated Cities Hazardous Waste Management Plan. In general, roadway improvements in the 2026 RTP will improve road safety, thereby reducing the potential for accidents of all types, including accidents involving hazardous materials in proximity to schools.

The 2026 RTP transportation projects could include transportation system expansions or extensions near twenty-one schools. These transportation improvements may increase the capacity to transport hazardous materials. Compliance with existing federal, state, and local regulations and policies would ensure that hazardous materials do not pose significantly increased additional risk to nearby receptors (including schools). As discussed above, while roadway projects in the 2026 RTP will increase capacity, they will also improve road safety, thereby potentially reducing the risk of accidents (including those involving hazardous materials) in the proximity of schools. Therefore, the potential for significantly increased risks to schools within 0.25 miles of a facility handling hazardous or acutely hazardous materials as a result of land use and transportation improvements in the 2026 RTP is considered less than significant for **Impact HAZ-3**. No mitigation is required.

Level of Significance before Mitigation

Impacts are less than significant.

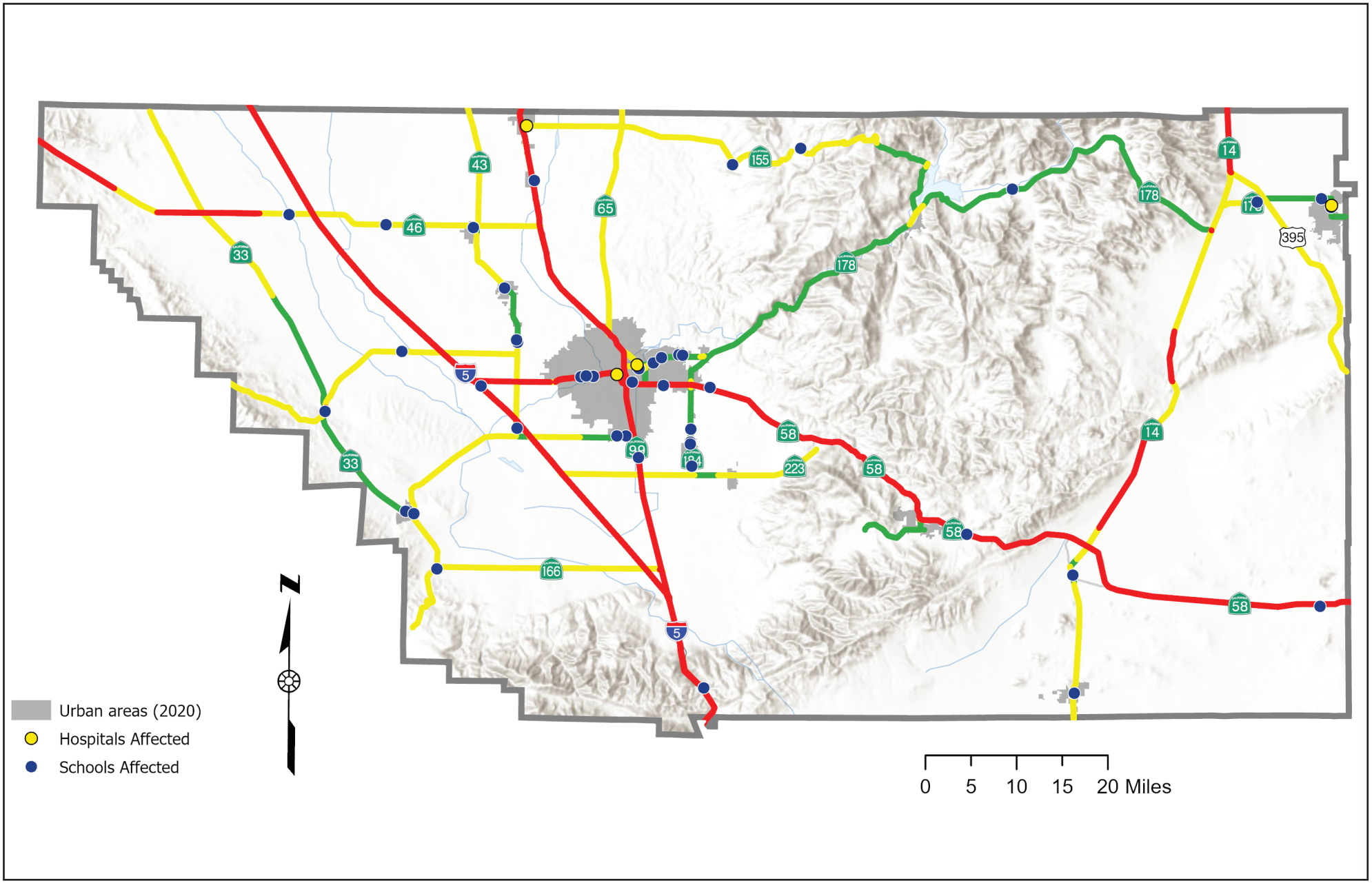


SOURCE: Kern COG, 2026

FIGURE **4.9-2**

IMPACT SCIENCES

Sensitive Receptors within 0.25 mile of Highways Under the 2049 RTP Plan



SOURCE: Kern COG, 2026

FIGURE **4.9-3**

IMPACT SCIENCES

Sensitive Receptors within 0.25 mile of Highways Under the 2049 No Project Alternative

1170.004•04/26

Mitigation Measures

None.

Level of Significance After Mitigation

Less than significant.

Impact HAZ-4 **Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.**

Regional and Transit Priority Area Impacts

The 2026 RTP includes development and transportation projects that are located on sites within the region where hazardous materials could be present. These include greenfield projects on properties with prior agricultural chemical use to brownfield urban redevelopment on properties with prior land uses that may have contaminated the site. Brownfield sites may be contaminated by previous uses as a result of improper handling of hazardous materials and/or wastes. In some cases, this may be because sites have been used for many years prior to the high level of regulation of hazardous materials and wastes. A common practice when property changes hands is for a Phase I Environmental Site Assessment (ESA) to be prepared in order to research and disclose the prior uses of the site and the likelihood that residual hazardous materials and/or wastes are present. As part of a project-specific environmental review, implementing agencies and local agencies frequently require a Phase I ESA or equivalent prior to approval or implementation of a project. These studies include research of a variety of government databases to determine whether the site has had prior underground tanks or other industrial uses that could have resulted in hazardous materials on or below the ground surface. If a Phase I ESA indicates the presence, or potential presence of contamination, a site-specific Phase II ESA is required to test soil and/or groundwater. Based on the outcome of a Phase II ESA, remediation of contaminated sites under federal and state regulations, administered at the local level, is required prior to development. Once hazardous materials are identified on a particular site, federal, state, and local regulations address proper on-site treatment and/or disposal to protect the public and environment.

Compliance with NEPA, CEQA, and other applicable regulations for properties at risk of potential hazardous materials and/or waste contamination typically would avoid adverse impacts associated with the buildout of the 2026 RTP.

However, it is possible that RTP projects and development could occur without a thorough evaluation of the potential for on-site contamination. Therefore, the potential impact related to disturbing contaminated soils as a result of land use and transportation improvements included in the 2026 RTP is considered potentially significant for **Impact HAZ-4**. Mitigation is required. **Mitigation Measure HAZ-1** below would reduce these impacts.

Level of Significance Before Mitigation

Potentially significant.

Mitigation Measures

HAZ-1: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to determine whether specific project sites are listed on government lists of hazardous materials and/or waste sites compiled pursuant to Government Code Section 65962.5. Implementing and local agencies should require preparation of a Phase I Environmental Site assessment (ESA) for any listed sites or sites with the potential for residual hazardous materials and/or waste as a result of location and/or prior uses. Implementing and local agencies should require that recommendations of the Phase I ESA be fully implemented. If a Phase I ESA indicates the presence or likely presence of contamination, the implementing agency should require a Phase II ESA, and recommendations of the Phase II ESA should be fully implemented.

Level of Significance After Mitigation

Because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, even with implementation of **Mitigation Measure HAZ-1**, impacts could remain significant and unavoidable. The characteristics of any individual project and/or resource will affect the level of significance after mitigation, as well as the feasibility of mitigation that must be assessed on a project-by-project basis based on project-specific details. At the programmatic level of review this impact is considered significant and unavoidable.

Impact HAZ-5 **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area.**

Regional and Transit Priority Area Impacts

Regional development could include a variety of land uses that would require increased air transportation of people and goods. In this analysis, anticipated future land uses are discussed in general programmatic terms. Project-specific, parcel-level future land uses are unknown. Regional development could increase the number of land uses and developments within an airport planning area and within airport hazard zones, creating hazards from tall structures, glare-producing objects, bird and wildlife attractants, radio waves from communication centers, or other features that have the potential to interfere with aircraft take-off and/or landings.

The airports in the Kern COG region are listed in **Table 4.9-3**. Land development associated with the proposed RTP would likely occur in and near airport flight corridors and within areas subject to policies contained in an ALUCP. In California, potential hazards to airport operations are generally regulated by the FAA (FAR Part 77), with local planning and evaluation of proposed projects (in terms of a proposed project's compatibility in relationship to air and ground operations and the safety of the public) under the authority of the applicable Airport Land Use Commission through ALUCPs.

RTP transportation projects and development would occur within two miles of a public airport and in the vicinity of private airstrips. As discussed above, potential hazards to airport operations are generally regulated by the FAA (FAR Part 77), with local planning and evaluation of proposed projects (in terms of a proposed project's compatibility in relationship to air and ground operations and the safety of the public) under the authority of the applicable Airport Land Use Commission through ALUCPs. As described in the regulatory framework, Kern County includes policies to ensure review of projects located within ALUCPs. In addition, improvements included in the proposed RTP are more likely to improve safety (through improvements to the roadway network and public transportation) than cause hazards or interfere with airport operations. Therefore, as a result of the stringent regulatory environment, the potential for significantly increased risk due to proximity to airports and airstrips as a result of land use and transportation improvements included in the 2026 RTP is considered less than significant for **Impact HAZ-5**. No mitigation is required.

Level of Significance before Mitigation

Less than significant.

Mitigation Measures

None.

Level of Significance After Mitigation

Less than significant.

Impact HAZ-6 **Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.**

Regional and Transit Priority Area Impacts

By 2049, the RTP plan area will grow by approximately 106,900 people, 61,100 jobs, and 72,500 households. Implementation of the proposed RTP will convert approximately 8,320 acres of undeveloped land to new development. As described in the RTP (see Chapter 4 Sustainable Communities Strategy), the RTP encourages a more compact growth pattern than in previous RTPs.

The Kern County Fire Department Office of Emergency Services has developed a multi-hazard plan for Kern County to respond to a possible emergency situation (e.g., fires, floods, earthquakes, etc.). The plan covers all of the land within the County, including both incorporated and unincorporated areas. The plan provides a process for evacuating people from danger, preventing or minimizing loss of life and property. The management of the multi-hazard plan includes regular updates to the plan that incorporate new or proposed developments into the plan. The 2026 RTP has been developed in coordination with numerous stakeholders, including the County of Kern, and aims to improve the overall safety of the transportation system. The RTP includes Intelligent Transportation Systems (ITS) that apply advanced information processing, communication, vehicle sensing, and traffic control technologies to the surface transportation system, which could help optimize evacuation in the event of an emergency.

Poor visibility due to fog, dust, truck traffic, high winds in eastern Kern County, steep grades, snow and ice, rock falls, and red-light violations all contribute to highway safety. The RTP integrates thirteen policies that incorporate ITS efforts in the County.

Policy 31 Support more efficient use of the transportation system through the implementation of Intelligent Transportation Systems (ITS) technology.

Policy 31.1 Build upon the momentum and stakeholder coalition generated through the San Joaquin Valley Goods Movement Study to pursue ITS commercial vehicle projects.

Policy 31.2 Investigate how ITS can support efforts to improve travel between the inland areas and coastal communities.

Policy 31.3 Build upon ITS planning efforts in the San Joaquin Valley in conjunction with federal rules (ITS architecture and standards conformity and statewide and metropolitan planning) to expand ITS actions.

Policy 31.4 Build upon the existing Caltrans District 6 Traffic Management Systems to fill gaps and complete coverage on major facilities, including expansion of their highway closures and restrictions database, to include other agencies.

Policy 31.5 Capitalize on the extensive ITS technology testing and standards development conducted by Caltrans by using, where appropriate, Caltrans approaches for local traffic management systems.

Policy 31.6 Build upon best practices from past and current transit ITS deployment experiences in the State of California.

Policy 31.8 Provide traveler information for commercial vehicle operators at truck rest stops.

Policy 31.9 Improve visibility and access to existing Caltrans valley-wide alternate route plans.

Policy 31.10 Coordinate the Bakersfield area Transportation Operations Center with Caltrans District 6 Transportation Management Center via satellite.

Policy 31.11 Integrate the ITS capabilities being implemented at GET with Bakersfield's traffic management system, including sharing information between the two centers during emergencies.

Policy 31.12 Facilitate the transfer of lessons learned from GET ITS deployment to other area transit operators, and look for opportunities for those agencies to better coordinate with GET using its ITS capabilities.

Policy 31.13 Expand the accident reduction campaigns on Kern's rural highways and county roads.

Implementation of these policies would help improve the safety of the transportation system in Kern County, where, in the past, deployment of ITS has resulted in quantifiable benefits, including reduced accidents.[8]

Therefore, given that there is a multi-hazard plan in place on a Countywide basis, and the RTP's inclusion of the ITS project, and that project-level review is required for all individual projects to ensure adequate emergency access, the potential for adverse impacts on land use and transportation changes from the implementation of the proposed RTP are considered less than significant for **Impact HAZ-6**. No mitigation is required.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

None.

Level of Significance After Mitigation

Less than significant.

4.9.4 CUMULATIVE EFFECTS

As discussed above, implementation of the 2026 RTP would result in increased transportation and use of hazardous materials, which would lead to greater hazardous materials passing through adjacent jurisdictions. Similarly, increased growth in adjacent jurisdictions adds to the transport of hazardous materials through Kern County. However, adjacent jurisdictions would also adhere to existing regulations and policies governing the transport of hazardous materials and would not increase potential impacts within the RTP Plan Area. Impacts that are considered significant would add similar significant impacts to adjacent jurisdictions.

Development within adjacent jurisdictions would have no increased impact on the potential for the RTP to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school, nor would it increase the potential for any projects to be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

---

8 2026 RTP Kern COG, Chapter 2 Transportation

Development in adjacent jurisdictions would not cumulatively increase the potential for the RTP to impair any adopted emergency response plan or evacuation plan.

4.10 HYDROLOGY & WATER QUALITY

This section addresses the existing water resources, including hydrology, water supply and demand, and water quality in the region, and evaluates the potential significance of changes to these resources that could result from implementation of the 2026 RTP. In addition, this PEIR provides regional-scale mitigation measures as well as a framework of mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies to reduce identified impacts as appropriate and feasible. Sources used in this discussion include the Tulare Lake Basin Portion of Kern County Integrated Regional Water Management Plan (IRWMP), Central Valley Regional Water Quality Control Board, the 2022 Kern County Water Agency Water (KCWA) Report on Water Conditions, the DWR's State Water Project Delivery Capability Report, and the KCWA Comprehensive Annual Financial Report.

4.10.1 ENVIRONMENTAL SETTING

4.10.1.1 Climate

The climate in the Kern Region is characterized as an "inland Mediterranean climate" with hot and dry summers and cool winters. The climate around the Valley floor is prone to large diurnal fluxes due to its inland location, and is dominated by dry, hot weather throughout the summer months.

In the winter, the Kern Region experiences a phenomenon known in the southern San Joaquin Valley as "Tule Fog." Tule Fog forms as a result of radiation inversions when air closer to the ground is cooled faster than the air above. The result is an inversion layer where warmer air sits at the top of the air column, trapping the cooler and denser air below. Low wind speeds, combined with low inversion layers in the winter, create a climate conducive to high concentrations of fog. Visibility in Tule Fog can be less than an eighth of a mile (about 600 feet) down to at times less than 10 feet, often causing dangerous driving conditions on regional Interstate 5 and other arterial highways. While Tule Fog can contain significant moisture, it does not qualify as "precipitation," as it does not typically soak into soils.

On average, the valley floor receives less than six inches of precipitation per year, most of which falls between November and April, whereas the various mountain ranges can receive up to 20 inches per year. **Table 4.10-1, Climate in the Kern Region**, summarizes the 2025 range in temperatures and precipitation for the region.

Table 4.10-1
Climate in the Kern Region

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg. Rainfall (inches)	0.41	0.81	2.04	0.3	0.14	0.01	0	0.03	0.37	1.3	3.64	2.67	0..97
Avg. Max Temp. (°F)	59.3	64.3	64.2	72.4	82.3	91.9	93.7	95.6	87.5	75.3	66.5	59.7	76.1
Avg. Min Temp. (°F)	34.4	42.1	41.2	47.8	54.9	63.5	64.4	66.8	62.2	50.5	45.7	42.3	51.3

Source: NOAA, Climate at a Glance County available online at: https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series/CA-029/pcp/1/0/2025-2025

4.10.1.2 Hydrologic Components

Hydrologic Regions

The Department of Water Resources (DWR) has divided the state into ten hydrologic regions, corresponding to the state's major water drainage basins. The Tulare Lake Hydrologic Region encompasses most of Kern County and other parts of the San Joaquin Valley. **Figure 4.10-1, Tulare Lake Hydrologic Region,** illustrates the boundary of the region and the County's location within the region. The San Joaquin Valley represents the southern portion of California's Central Valley. The Valley is a structural trough approximately 200 miles long and 70 miles wide, filled with up to 32,000 feet of marine and continental sediments deposited during periodic inundation by the Pacific Ocean and by erosion of the surrounding mountains, respectively.

4.10.1.3 Surface Hydrology

Surface water hydrology refers to surface water systems, including watersheds, floodplains, rivers, streams, lakes, and reservoirs.

Watersheds

Watersheds refer to areas of land, or a basin, in which all waterways drain to one specific outlet, or body of water, such as a river, lake, ocean, or wetland. Watersheds have topographical divisions such as ridges, hills, or mountains. All precipitation that falls within a given watershed, or basin, eventually drains into the same body of water. There are 15 major watersheds in the Kern COG region.



SOURCE: Esri, 2026

FIGURE **4.10-1**

IMPACT SCIENCES

Tulare Lake Hydrologic Region

1170.004•04/26

The watersheds in the region include: the Upper Kern, South Fork Kern, Middle Kern-Upper Tehachapi-Grapevine, Upper Poso, Upper Deer-Upper White, Upper Los Gatos-Avenal, Tulare-Buena Vista Lakes, Carrizo Plan, Estella, Cuyama, Santa Clara, Indian Wells-Searles Valley, Antelope-Fremont Valleys, Coyote-Cuddeback Lakes, and Mojave.

Rivers

The principal rivers in the basin are the Kern River and its tributaries and minor streams, including Poso Creek, Caliente Creek, and El Paso Creek. The Kern River is discussed in detail in the local surface water discussion below.

Streams

Local minor streams are the second-largest source of local surface water after the Kern River. Streams with measurable runoff are grouped into four separate watershed areas: Poso, Caliente, El Paso, and San Emigdio. Streams with the largest historical flows, including Poso and Tehachapi Creek, are equipped with flow meters to record actual data, while flow rates of smaller streams are estimated by statistical methods based on historical watershed, precipitation, and runoff data. The mean stream flow of these minor streams is 103,000 acre-feet (afy).[1]

Small creeks and streams drain local mountain ranges. The majority are ephemeral and quickly infiltrate once reaching the valley floor. However, under certain hydrologic conditions, some of these streams carry very large flows that can be quite damaging. Examples include flooding in the Kelso Creek area and in the area around the cities of Arvin and Lamont. Regional efforts to address flooding and to better manage such flow events have been initiated among various parties in the region, including the County of Kern, KCWA, and affected municipalities.

A very small percentage of runoff from local minor streams is collected and used as irrigation for agriculture. It is estimated that on average, roughly 37,600 afy or 95 percent of the runoff percolates into the underlying aquifers and contributes to the shallow groundwater near the Kern Lake Bed and Kern National Wildlife Refuge (KNWR) areas.[2]

---

1 Kern County Water Agency (KCWA), *2020 Tulare Lake Basin Portion of Kern County IRWMP*, Section 2.6.3.2 Minor Streams. Available online at: http://www.kernirwmp.com/documents/KIRWMP_Update_FINAL%202020-0311.pdf, accessed on April 11, 2026.

2 Ibid.

Lakes and Reservoirs

The County maintains four reservoirs: Lake Evans, Lake Isabella, Lake Ming, and Lake Webb. The reservoirs can be used for recreational purposes and were constructed between the early 1950s to early 1970s. Historically, natural lakes did form in the region; however, many of these lakes, including Kern Lake and Rosamond Lake, are now dry lake beds due to agricultural diversion of river waters or natural occurrences.

4.13.1.4 Groundwater Hydrology

Groundwater is the part of the hydrologic cycle representing underground water sources. Groundwater is present in many forms: in reservoirs, both natural and constructed, in underground streams, and in the vast movement of water in and through sand, clay, and rock beneath the earth's surface. The place where groundwater comes closest to the surface is called the water table, which in some areas may be very deep, and in others may be right at the surface.

With only 6 inches per year of average rainfall in the valley floor, use of groundwater is necessary to maintain a sufficient water supply in Kern's semi-desert climate. It is estimated that on average, groundwater accounts for 39 percent of the region's total water supply; however, it can be as much as 60 percent during dry years.[3]

The main sources of groundwater recharge are applied irrigation water, surplus imported water, and the Kern River. Significant areas of groundwater recharge are located along the stream channels of the rivers, where porous soils and gravels allow for extensive aquifer recharge. Other areas away from river flood plains are characterized by semi-consolidated gravels with low recharge capability or, more often, clay or hardpan soils, which allow minimal groundwater recharge. In the riverbed are 500- to 2,000-foot-thick poorly sorted deposits of silt, sand, rock, and clay that originated from the Sierra Nevada, and that provide moderate to high permeability through the riverbed. This phenomenon is also seen in some of the unlined canals that branch off from the river and creeks such as the Kelso, Canebrake, and Brite. Major water banking and conjunctive use projects also contribute large amounts of recharge to the region. Secondary sources of groundwater are infiltration of water used for irrigation in agricultural applications, as well as urban runoff seepage from streams, canals, ditches, and underflow that enters the valley from tributary stream canyons.

---

3 Ibid at Section 2.6.4 – Groundwater.

San Joaquin Valley Groundwater Basin

Kern County encompasses portions of two major California drainage systems: the San Joaquin Valley Groundwater Basin and the Mojave Desert Groundwater Basin. The western two-thirds of the County drains into the San Joaquin Valley Groundwater Basin, while the remainder of the County drains into the Mojave Desert groundwater basin, which consists of three smaller valleys.

The San Joaquin Valley groundwater basin is bounded on the west by the Coast Ranges, on the south by the San Emigdio and Tehachapi Mountains, on the east by the Sierra Nevada, and on the north by the Sacramento-San Joaquin Delta and Sacramento Valley. The northern portion of the San Joaquin Valley groundwater basin drains toward the Delta by the San Joaquin River and its tributaries, the Fresno, Merced, Tuolumne, and Stanislaus Rivers. The southern portion of the groundwater basin is internally drained by the Kings, Kaweah, Tule, and Kern Rivers that flow into the Tulare Lake drainage basin, including the beds of the former Tulare, Buena Vista, and Kern Lakes. The San Joaquin Valley groundwater basin has two primary floodwater collection basins in Kern County: Lake Isabella and Buena Vista Lake. Lake Isabella is located approximately 34 miles northeast of Bakersfield within the Sierra Nevada foothills. Isabella Dam controls the flow of the Kern River's lower portion, resulting in the creation of Lake Isabella. With a storage capacity of 550,000 acre-feet, Lake Isabella is the County's largest reservoir.[4] However, in 2021, water runoff on the Kern River was 15 percent of normal, the second driest the river has ever been on record. Previously, the river was at its driest in 2015, in the midst of a severe drought in California.[5] As of April 2026, Lake Isabella's water level is 19.4 feet below full pool.[6] The Buena Vista Lake is located approximately 25 miles southwest of Bakersfield in the southeastern portion of the County. Originally, the lake was a fresh body of water that the Kern River flowed into; however, the lake dried up after its tributary waters were directed towards Isabella Dam to be used for agricultural and municipal water needs. Today, the lakebed is occupied by Lake Evans and Lake Webb.

Mojave Desert Groundwater Basin

The Mojave Desert drainage system consists of three separate watershed areas. The most northern of these areas is the Indian Wells-Searles Valley, located in the County's northeastern portion. China Lake, a

---

4 Since 2006 due to seepage and earthquake concerns, water storage in the Lake has been limited to approximately 60 percent of capacity, 20 feet below the spillway, and 340,860 total acre-feet. The US Army Corps of Engineers is undertaking studies at Isabella Reservoir with the intent of restoring reservoir capacity.

5 Mayer, *This year the Kern River was its second driest in recorded history, but is it reason to worry?* 2021. Available online at: www.bakersfield.com/news/this-year-the-kern-river-was-its-second-driest-in-recorded-history-but-is-it/article_62830f94-2545-11ec-ac47-d7d2cc70e12d.html, accessed on April 11, 2026.

6 Lake Isabella Water Level. Lakes Online. Available online at: http://isabella.uslakes.info/Level/, accessed on April 2026.

perennial lake, is situated in the central northeastern valley and is the primary discharge point for the Indian Wells Searles Valley watershed. The Antelope-Fremont Valleys watershed is located south of the Indian Wells-Searles Valley. Koehn Lake serves as the primary collection point for the Fremont Valley watershed, while Rosamond and Rogers Lake are the two floodwater collection basins that serve the Antelope Valley watershed.

Kern County Subbasin

The Kern County Groundwater sub-basin is bounded on the north by the Kern County line and the Tule Groundwater sub-basin, on the east and southeast by granitic bedrock of the Sierra Nevada foothills and Tehachapi Mountains, and on the southwest and west by the marine sediments of the San Emigdio Mountains and Coast Ranges. Principal rivers and streams include the Kern River and Poso Creek. Active faults include the Edison, Pond-Poso, and White Wolf faults. Average annual precipitation values range from 5 inches at the sub-basin interior to 9 to 13 inches at the sub-basin margins to the east, south, and west.

4.10.1.5 Water Supply

Water supplies used for Kern County include the State Water Project (SWP) via the California Aqueduct, the Central Valley Project (CVP) via the Friant-Kern Canal, and local surface supplies from the Kern River and other local streams, as well as the regional groundwater basin, the San Joaquin Valley groundwater basin, described above.[7]

As described below, Kern County has multiple water sources, including the Kern River, SWP, CVP, groundwater, and other local streams. Kern County has developed a complex and interconnected water distribution system. This network of canals and pipelines makes it possible to convey water from one area to another, both regionally and statewide. Local agencies have agreements in place that allow agencies to call on available supplies when another supply source is experiencing a shortage, and for other reasons to reduce costs, conserve energy, and/or improve water quality.

This distribution network makes it possible to store excess water in a given year or period and then recover and deliver that water in another year or later in the year. Several water banks have agreements to store surface water from agencies outside of Kern County. These agreements allow imported supplies that belong to the out-of-region banking participants to be delivered to banking programs within the County, usually via the California Aqueduct or Friant-Kern Canal. The water is either percolated into the groundwater basin and stored, or utilized by local agencies in lieu of groundwater pumping, thus allowing water levels in the groundwater basin to be maintained or improved. During water-short periods, the

7 Ibid at 2022 KCWA, Tulare Lake Basin.

stored water can either be pumped and delivered directly (if the banking participant is physically located south of the County), or arrangements can be made to use out-of-County banked water locally.

The National Oceanic and Atmospheric Administration (NOAA) monitors drought conditions in the state of California. Utilizing data from the U.S. Drought Monitor, California entered exceptional (the highest level) drought conditions in 2026.[8] According to NOAA, 131,300 people are affected by drought in California. Most of Kern County, the Central Valley, and northern California are currently identified as being within abnormally dry conditions.[9] Furthermore, according to state water officials, California's river and reservoirs are below their record lows, and due to a dry March, manual and electronic readings of the state's snowpack water content were not measurable.[10]

State Water Project

The State Water Project (SWP) is the nation's largest state-built water and power development conveyance system. The primary purpose of the SWP is to provide a water supply and delivery system to distribute water across California. The SWP consists of 34 reservoirs and lakes, 701 miles of aqueducts, 5 power plants, and 24 pumping plants. The SWP delivers water to 29 urban and agricultural water suppliers in California, providing water to over 25 million California residents and 750,000 acres of irrigated farmland, directly supporting two-thirds of California's $2.8 trillion economy.[11]

On March 29, 1963, CVWD entered into a water supply contract with the State of California Department of Water Resources (DWR), becoming one of the SWP's original State Water Contractors. Each contractor's maximum annual allocation is defined in their individual water supply contract. Actual availability of SWP water varies each year based on precipitation and snowpack runoff in Northern California, where the SWP reservoirs are located. A wet or dry hydrologic year can increase or decrease the SWP allocation available in a given year. The long-term average SWP allocation is about 60% of each contractor's maximum contracted allocation.[12]

The KCWA is the second largest participant of the 29-member agencies of the SWP. The amount of SWP water actually available and allocated to SWP contractors each year is dependent on a number of factors

---

8 Drought Conditions in California from 2000-Present. NOAA. Available online at: https://www.drought.gov/states/california, accessed on April 11, 2026.

9 US Drought Monitor, *California*, 2026. Available online at: https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?CA, accessed April 11, 2026

10 See https://water.ca.gov/News/News-Releases/2026/Apr-2026/Record-Hot-Dry-March-Wipes-Out-California-Snowpack-Leaving-No-Measurable-Snow-for-April-Survey , Accessed April 11, 2026

11 Coachella Valley Water District, *California's State Water Project*, 2026. Available online at: https://www.cvwd.org/170/Californias-State-Water-Project, accessed on April 21, 2026.

12 Ibid.

and can vary significantly from year to year. The primary factors affecting SWP supply availability include hydrology, the amount of water in SWP storage at the beginning of the year, regulatory/biological and operational constraints, and the total amount of water requested by SWP contractors. According to the 2024 KCWA Comprehensive Annual Financial Report, the County received 23 percent of its water from the SWP in 2020.[13]

Urban SWP contractors' requests for SWP water, which were low in the early years of the SWP, have been steadily increasing over time, which increases the competition for limited SWP dry-year supplies. In an effort to assess the impacts of these varying conditions on SWP supply reliability, DWR issued its first "State Water Project Delivery Reliability Report" in May 2003. The report assists SWP contractors in assessing the reliability of the SWP component of their overall supplies. DWR updates this report every two years and released the most recent draft update in December 2025.[14] In these updates, DWR provides a recommended set of analyses for SWP contractors to use in water supply planning, projected SWP "Table A" amounts, and estimates of SWP "Table A" water deliveries based on SWP's existing conditions, as shown in **Table 4.10-2, SWP "Table A" Deliveries to KCWA.**

Contractor deliveries are presented as four different delivery types: Table A delivery, Article 21 delivery, carryover delivery, or turnback delivery. Table A is an exhibit to the SWP's water supply contracts. The maximum Table A amount is the basis for apportioning water supply and costs to the SWP contractors. Once the total amount of water to be delivered is determined for the year, all available water is allocated in proportion to each contractor's annual maximum SWP Table A amount. **Table 4.10-2** shows that the historical deliveries from 2015 to 2024 of SWP Table A water, including the carryover water deliveries, range from a minimum of 277 thousand acre-feet (TAF)/year (2022) to a maximum of 3,100 TAF/year (2017), with an average of 1,659 TAF/year. The results of modeling existing conditions under historical drought scenarios indicate that SWP Table.

As a point of historical reference, in response to the Governor's declaration of a state of emergency with respect to the drought in California, on January 31, 2014, the DWR announced SWP customers should not expect any water deliveries if dry conditions persisted. However, winter storms provided a limited boost to reservoir storage and water deliveries, and, despite not being enough to replenish the state's water systems, allowed SWP deliveries to continue. In 2014, Kern County received only approximately 6 percent of the SWP water delivery it received in 2013.

---

13 KCWA. 2021. *Comprehensive Annual Financial Report- FY Ended June 30, 2020.* https://www.auditor.co.kern.ca.us/cafr/24CAFR.pdf

14 California Department of Water Resources. 2025. *The 2025 Draft State Water Project Delivery Capability Report.* /https://water.ca.gov/-/media/DWR-Website/Web-Pages/Library/Modeling-And-Analysis/Files/Modeling-and-Analysis-PDFs/Draft_DCR25_MainReport_final_2025-12-17.pdf, accessed April 2026.

Table 4.10-2
SWP "Table A" Deliveries to KCWA

Year	Annual Deliveries (thousand acre-feet)
2015	857
2016	2,049
2017	3,094
2018	1,603
2019	2,580
2020	1,049
2021	593
2022	277
2023	2,745
2024	1,738

Source: California Department of Water Resources (DWR), The State Water Project Delivery Capability Report 2025, December.

In 2016-2017, a historically wet winter ended the state of emergency, and drought conditions subsided in all but four counties. During the drought from 2011-2016, California farmers cut back acreage by six percent, and high water costs, coupled with lost acreage, led to nearly $2 billion in agricultural sector losses. This drought officially ended in California in March of 2019.

Drought conditions pose a severe and imminent threat to the state's agricultural sector, as well as those that support farming, such as fertilizer sales, transportation, and farm processing industries, all of which are prominent in Kern County.[15]

Central Valley Project

The Central Valley Project (CVP) is a set of federal facilities that extends north of Redding to south of Bakersfield. The CVP encompasses two of California's largest river systems, the Sacramento River, which flows southward toward the Delta, and the San Joaquin River, which flows north into the Delta. Friant Dam stores San Joaquin River flows and diverts this water southward through the Friant-Kern Canal (and north in the Madera Canal, though that facility is not located in the Kern Region). The Friant-Kern Canal is 151.8 miles long and carries water south from Millerton Lake just northeast of Fresno to the Kern River. Through various exchange agreements, the California Aqueduct can deliver west-side CVP contractor supplies, which are typically sold to west-side districts with California Aqueduct access or exchanged with Friant districts such as the Arvin-Edison Water Storage District (AEWSD). Deliveries are dependent upon the

15 Public Policy Institute of California. 2017. *California's Latest Drought*. https://www.ppic.org/publication/droughts-in-california/ , accessed April 17, 2026.

monthly percentage allocations determined by the Bureau of Reclamation. In 2021, Kern County relied on the CVP for approximately 12 percent of the County's total water supply.[16] However, due to critically dry hydrologic conditions, the Bureau of Reclamation has updated the water supply allocations for CVP municipal and industrial water service contractors.

In February 2026, the Bureau of Reclamation announced the initial CVP water supply allocations included approximately 65 percent of historic use for south-of-Delta municipal and industrial (M&I) water service contractors, or public health and safety needs, whichever is greater, while north-of-Delta M&I contractors remained at 100 percent. In March 2026, Reclamation increased south-of-Delta M&I allocations to approximately 70 percent of historic use as conditions improved. [17]

Groundwater and Groundwater Banking

Agriculture, municipal and industrial users, and groundwater banking operations all draw upon local groundwater resources. Groundwater provides 36 percent of the County's water.[18] Agriculture is estimated to be the largest user of groundwater. The majority of groundwater extractions in the region are not recorded; thus, obtaining an accurate assessment of groundwater extractions is difficult. The KCWA monitors groundwater levels and quality throughout Kern County. It collects, interprets, and distributes data from approximately 800 production wells and 200 monitoring wells within the Kern sub-basin of the San Joaquin Valley groundwater basin, and about 350 production and monitoring wells within the Kern River Alluvial Fan area.

Groundwater banking is the storage/recharge of excess water supplies into aquifers during wet periods for later withdrawal/recovery for use during dry periods. Historically, during wet periods, surface water imports have been substantial enough to satisfy irrigation and urban water needs, and thus, excess water has been recharged to groundwater aquifers. The groundwater is then pumped/extracted out through the many private and publicly owned wells located throughout the region during dry periods when local or imported surface water supplies are insufficient. It is estimated that there are over 30,000 acres of groundwater recharge ponds alone in Kern County.

Groundwater banking programs are widely used in Kern County, and conjunctive use programs have been used in the region since the early 1900s. Many notable groundwater storage programs exist, including those

---

16 Water in Kern County. Water Association of Kern County. Available online at: https://www.wakc.com/water-overview/kern-county/, accessed on April 17, 2026

17 Bureau of Reclamation, *Reclamation increases Central Valley Project 2026 water supply allocations,* March 24, 2026. Available at: https://www.usbr.gov/newsroom/news-release/5305 , accessed April 17, 2026

18 Water in Kern County. Water Association of Kern County. Available online at: https://www.wakc.com/water-overview/kern-county/, accessed on April 17, 2026

operated by the Arvin-Edison Water Storage District (AEWSD), Semitropic Water Supply District (WSD), North Kern WSD, the City of Bakersfield, Rosedale-Rio Bravo Water Storage District (RRWSD), and various other districts within the County. The Kern Water Bank Authority (KWBA) is responsible for the largest water banking program in the world and has contributed over 2 million acre-feet of water into storage since the program began operations in 1995.

In total, the maximum annual recharge capacity (i.e., the amount that can be infiltrated per year from existing recharge areas) in the region is estimated at approximately 2.0 million afy, with maximum annual recovery estimated at 1 million acre-feet. Approximately 1.5 million acre-feet of storage is estimated to be available to the Kern Water Bank.[19]

Local Surface Water

Kern River. The most important source of naturally occurring surface water in the County is the Kern River, which is regulated by the Isabella Dam and Reservoir, operated by the U.S. Army Corps of Engineers (USACE) and the Kern River Watermaster.[20] Approximately 1,300 acres at the eastern end of the reservoir is managed by the US Forrest Service for wildlife stewardship.

The Kern River is approximately 165 miles long. It is the southernmost river in the San Joaquin Valley and begins in the Sierra Nevada Mountains on the eastern side of Tulare County. Once the two forks of the River pass the Sierra Nevada mountains drainage divide and enter the County near Weldon and Kernville, the Kern River pools as Isabella Reservoir behind Isabella Dam, which serves as a USACE flood control facility protecting the City of Bakersfield and other downstream areas. The Kern River continues to travel generally southwest through the Sierra foothills and the City of Bakersfield. North, south, and west of Bakersfield, much of the Kern River is diverted for agricultural use and becomes dry or nearly dry for most of the year.

With the exception of the small valley in which Isabella Reservoir is located, the Kern River and its principal tributaries flow in steep, narrow canyons from their headwaters to the mouth of Kern Canyon, where it debuts onto the Valley floor. Beyond the mouth of the Canyon, the River channel is deeply entrenched in an alluvial fan that extends westward to the main valley trough, where the channel is controlled by levees

---

19 Kern Water Bank Authority, *Frequently Asked Questions.* Available at: https://www.kwb.org/faqs/, accessed April 17, 2026.

20 Watermaster: The main purpose of the Watermaster Program is to ensure water is allocated according to established water rights as determined by court adjudications or agreements by an unbiased, qualified person, thereby reducing water rights court litigation, civil lawsuits, and law enforcement workload. It also helps prevent the waste or unreasonable use of water. The State established the Watermaster Program in 1924 to provide for general public welfare and safety after many injuries and some deaths resulting from disputes over adjudicated water rights.

to prevent flood flows from spreading to adjacent lands. The Kern River had an unregulated flow until 1954, when the Isabella Dam and Reservoir were constructed by the USACE. The primary purpose of the dam is flood control. Isabella Reservoir was designed to store approximately 550,000 acre-feet of water; however, since 2006, due to seepage and earthquake concerns, water storage in the Lake has been limited to approximately 60 percent of capacity, 20 feet below the spillway, and 340,860 total acre-feet. The USACE is undertaking studies at Isabella Reservoir with the intent of restoring reservoir capacity. The Kern River provides approximately 20 percent of the County's water supply, with an additional 6 percent coming from local streams.[21]

With the exception of very wet years, there is no river flow downstream of Bakersfield due to upstream canal diversions. The Kern River encounters its first diversion into a canal when it first exits the Kern River Canyon and encounters another diversion when it reaches the east side of Bakersfield, near Hart Park. The Beardsley and Rocky Point weirs, or small dams, are the first two of seven diversion weirs in Bakersfield. From there, canal water travels north and south to irrigate farmlands. In total, the River is diverted into seven canals that pass through the City of Bakersfield. During very wet years, water flows in the Kern River southwest to the Buena Vista Lake Bed and then north to Tulare Lake or into the California Aqueduct near the community of Tupman.

In 1989, the State Water Resources Control Board (SWRCB) declared that the Kern River, from the Buena Vista Lake bed upstream (including all tributaries) was fully appropriated year-round. The "fully appropriated" status of the Kern River means the SWRCB will not accept new applications for diversion from the Kern River. Annually, petitions are filed with the SWRCB challenging the fully appropriated status of the Kern River. Along with the petitions to revise the Kern River's fully appropriated status, entities have filed applications to appropriate water from the Kern River. Depending on the outcome of the fully appropriated streams' status and any subsequent water rights decisions, water diversions from the Kern River may be affected.[22]

Minor Streams. Minor streams are the second-largest source of local surface water in Kern County. Streams with the largest historical flows, including Poso and Tehachapi Creeks, are equipped with flow meters to record actual data, while flow rates of smaller streams are estimated by statistical methods based on historical watershed, precipitation, and runoff data. The mean stream flow of these minor streams is 98,900 acre-feet.

---

21 Water in Kern County. Water Association of Kern County. Available online at: https://www.wakc.com/water-overview/kern-county/, accessed on April 17, 2026.

22 Ibid at KCWA, *2020- Section 6 Kern River Valley Subregion*.

Recycled Water. Recycled water programs are important in the Kern region, as the Tulare Lake hydrologic region mainly consists of a "closed basin." Closed basins have no natural outlet, and because there is no natural outflow, all effluent must be treated and disposed of within the basin. Agriculture, which accounts for the majority of total water use in Kern County, does not require water treated to potable water standards. The large amount of agriculture in the County has meant that nearly all wastewater effluent produced by the various treatment facilities in the County can be applied to salt-tolerant non-human consumption crop irrigation and environmental habitat restoration. Recycled water is also used to irrigate and flood certain areas of the KNWR.

Increased use of recycled water for irrigated agriculture, as well as landscape irrigation in the manufacturing and industrial sector, could help lower dependence on high-quality SWP and CVP water and provide an additional water source during drought or periods of regulatory restrictions when imported potable water quantities are reduced. In addition, waste discharges will be greatly reduced, and the high-quality imported water can be applied to its best use.

Kern River Oil Field. The Kern River Oil Field, located just north of the City of Bakersfield, is the third largest oil field in the state and the fifth largest field in the Country. Water trapped within oil deposits is released as part of the oil extraction and refining process. In the past, the water released during oil extraction was deposited into the Kern River, but following the implementation of more stringent environmental protection measures, Shell Oil Company began reusing the water in the form of steam to accelerate oil extraction. Beginning in 1980, the North Kern Water Storage District (NKWSD) and Cawelo Water District, located in northern Kern County, began receiving oil field-produced water for recharge and irrigation purposes.

Agriculture Processing Wastewater. In addition to treated wastewater effluent, effluent from plants processing crops harvested from the field and those preparing processed food potentially provide a source of additional water supply opportunities. Currently, effluent from agricultural processing facilities is being recycled for irrigation use and is being evaluated for use in groundwater recharge programs.

4.13.1.6 Water Demand

Water demands within the County are serviced by a variety of water purveyors, including the large wholesale agency, KCWA, its member districts, irrigation districts, investor-owned water companies, mutual water companies, municipalities, and private well owners. Water demands are summarized below for urban and agricultural demand sectors.

Urban Demand

Table 4.10-3, 2020 Kern County Urban Water Demand, provides the County's residential, commercial, industrial, and public authority urban water use. Annual water usage was provided by the various water agencies within Kern County.

Table 4.10-3
Kern County Water Demand

Type of water	2020	2025	2030	2035	2040	2045
Potable and Raw Water	59,593	62,575	64,075	65,600	65,600	65,600
Recycled Water Demand	0	0	0	0	0	0
Total Water Demand	**59,593**	**62,575**	**64,075**	**65,600**	**65,600**	**65,600**

Source: KCWA, 2020 Total Water Use (Potable and Non-Potable), Table 4-3.
Units of measure in acre feet.

Agricultural Demand

Agricultural demand was developed from the total irrigated acreage of 833,452 acres[23] and an average consumptive water use of 2.49 acre-feet per acre. **Table 4.10-4, Summary of Agricultural Water Demand,** provides a breakdown of the acreage by crop type.

Table 4.10-4
Summary of Agricultural Water Demand (afy)

Crop Type	Irrigated Acreage	Consumptive Water Use (acre-feet/acre)	Agricultural Water Demand (afy)
Alfalfa (including seed)	92,210	4.10	378,215
Almonds	179,948[(a)]	3.28	590,079
Apples, Pears, Plums	3,178	3.45	10,968
Apricots, Nectarines, Peaches	4,642	3.35	15,570
Beans	3,712	2.11	7,848
Carrots	28,645	2.55	72,902
Citrus	57,904	3.37	195,088
Corn, Grain Sorghum	52,008	2.95	153,207
Cotton	74,212	2.71	200,929
Grapes	101,571[(a)]	2.81	285,245
Grain and Grain Hay	58,647	2.07	121,155

23 Ibid at KCWA, Table 2-16 *2020 Tulare Lake Basin Portion of Kern County IRWMP, Section 2.8.2 Agricultural Water Demand.*

Crop Type	Irrigated Acreage	Consumptive Water Use (acre-feet/acre)	Agricultural Water Demand (afy)
Idle, Fallow Lands	183,495	0.33	59,789
Melons, Squash, Cucumbers	4,208	1.46	6,130
Misc. Deciduous Trees	18,433	3.34	61,612
Misc. Field Crops	664	2.09	1,391
Misc. Subtropical Trees	4,123[(a)]	3.38	13,919
Misc. Vegetables	11,759	1.62	19,059
Nursery	5,000	3.28	16,413
Onions, Garlic	6,982	1.70	11,846
Pasture, Turf, Misc. Grasses	9,136	4.13	37,716
Pistachios	78,528[(a)]	4.11	322,423
Potatoes	17,466	1.98	34,524
Safflower, Sunflower	2,068	2.23	4,601
Sugar Beets	489	3.29	1,609
Tomatoes	15,802	2.51	39,716
Turnips	209	1.62	339
Walnuts	1,907	3.89	7,420
Total Irrigated Lands	**833,452**	**2.49**	**2,669,713**
Total Crop Lands	**1,016,946**		
Double Cropped	**21,339**		

Note: (a) Includes Dudley Ridge Water District (DRWD) agricultural demands.
Source: Kern County Water Agency, 2020 Tulare Lake Basin Portion of Kern County IRWMP, Section 2.9.2 Agricultural Demand.

Total urban and agricultural demand for the Kern Region was estimated at around 2.66 MAF/year (2.49 + 0.17 MAF/year). Assuming water use for agricultural demands remains constant, the projected 2035 total demand is estimated to be 2.75 MAF/year.[24]

4.10.1.7 Land Use and Water Quality

Buildings, roads, sidewalks, parking lots, and other impervious surfaces define the urban landscape in Kern County, as well as alter the natural hydrology of the region and prevent the infiltration of water into the ground. In addition, impervious surfaces change the flow of stormwater over the landscape. In undeveloped areas, vegetation holds down soil, slows the flow of stormwater over land, and filters out some pollutants by both slowing the flow of the water and trapping some pollutants in the root system. Additionally, stormwater filters through the soil, replenishing underground aquifers.

As development increases in the County, these natural processes are reduced as vegetation is cleared and soil is paved over. As more impervious surface coverage is added to the landscape, stormwater flows

24 Ibid. at Kern IRWMP, 2020.

increase, and the concentration of pollutants grows. Increased stormwater flows also increase the possibility of flooding.

Surface Water Quality

Surface water resources in the County include creeks and rivers, lakes, and reservoirs. The main source of surface water, the Kern River, is generally considered a high-quality supply. However, portions of the Kern River have water quality issues but are not listed on the state's listing of impaired water bodies [Clean Water Act 303 (d)]. The Central Valley Regional Water Quality Control Board has identified two water quality stressors (dissolved oxygen and pH) for which it has identified Total Maximum Daily Loads (TMDLs) for Isabella Lake (the source for the lower Kern River). Various water agencies, the City of Bakersfield, Kern County Department of Parks, the US Bureau of Land Management (USBLM), and US Forest Service (USFS), in coordination with the California Department of Public Health (CDPH) perform regular surveys of the Kern River watershed. These surveys focus on identifying any activities that could affect water quality and water quantity. **Table 4.10-5, 2024 303(d) List of Impaired Water Bodies Kern County,** shows the identified stressors and typical ranges found in the Isabella Reservoir.

Kern County is predominantly arid, and many of the natural rivers and creeks are intermittent or ephemeral, drying up in the summer or flowing only in reaction to precipitation. Annual rainfall amounts vary depending on elevation and proximity to the coast. Some waterways in the region maintain a perennial flow due to agricultural irrigation and urban landscape watering.

Table 4.10-5
2024 303(d) List of Impaired Water Bodies Kern County

Name	Pollutant/ Stressor	Potential Sources	Typical Data Range	Basin Plan Objective	Est. Size Affected (acres)	Proposed/ Approved TMDL Completion
Isabella Reservoir	Dissolved Oxygen	Unknown	0.8–11.0 mg/L	No sample < 5.0 mg/L	11,707	2027
	pH	Unknown	7.3–9.6	6.5–8.5	11,707	2027

Source: 2024 California Integrated Report (Clean Water Section 303(d) List and 305(b) Report. Available online at: https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2024-integrated-report.html accessed on April 21, 2026

Point and non-point source pollution are different forms of pollution that can damage surface water and are regulated at the federal and local levels. Point source pollution refers to contaminants that enter a watershed, usually through a specific location such as a pipe. The source must be documented, and the flow from the source is subject to a discharge permit issued by a Regional Water Quality Control Board.

Examples of point source pollution are discharges from sewage treatment plants and industrial facilities. Because point sources are much easier to regulate than non-point sources, they were the initial focus of the 1972 Clean Water Act. Regulation of point sources since then has dramatically improved the water quality of many rivers and streams throughout the country.

In contrast to point source pollution, non-point source pollution, also known as "pollution runoff," is diffuse. Non-point pollution comes from areas (such as contaminated runoff from urban areas) and is significantly influenced by land uses. A driveway or the road in front of a house may be a source of pollution if spilled oil, leaves, pet waste, or other contaminants are washed into a storm drain. Non-point source pollution is now considered one of the major water quality problems in the United States.

The problem of non-point source pollution, specifically runoff pollution, is especially acute in urbanized areas where a combination of impermeable surfaces, landscape irrigation, highway runoff, and illicit dumping increases the pollutant loads in stormwater. The California State Water Quality Control Board (SWQCB) has identified the following pollutants found in urban runoff as being of particular concern:

- **Sediment.** Excessive sediment loads in streams can interfere with photosynthesis, aquatic life respiration, growth, and reproduction.
- **Nutrients.** Nitrogen and phosphorus can result in eutrophication of receiving waters (excessive or accelerated growth of vegetation or algae), reducing oxygen levels available for other species.
- **Bacteria and viruses.** Pathogens introduced to receiving waters from animal excrement in the watershed and by septic systems can restrict water contact activities.
- **Oxygen demanding substances.** Substances such as lawn clippings, animal excrement, and litter can reduce dissolved oxygen levels as they decompose.
- **Oil and grease.** Hydrocarbons from automobiles are toxic to some aquatic life.
- **Metals.** Lead, zinc, cadmium, and copper are heavy metals commonly found in stormwater. Other metals introduced by automobiles include chromium, iron, nickel, and manganese. These metals can enter waterways through storm drains along with sediment or as atmospheric deposition.
- **Toxic pollutants.** Pesticides, phenols, and polynuclear aromatic hydrocarbons (PAHs) are toxic organic chemicals found in stormwater.
- **Floatables.** Trash in waterways increases metals and toxic pollutant loads in addition to undesirable aesthetic impacts.

The DWR regulates the water quality of the SWP through the Department of Water Resources. **Table 4.10-6, Comparison of SWP Water Quality Criteria,** reports water quality in the California Aqueduct upstream of Kern County (data taken from Station KA017226, Check 21 near Kettleman City).

Not all constituents currently in the Water Supply Contract between DWR and the KCWA are sampled by DWR. Also, while some constituents do not have SWP pumpback criteria and/or a maximum contaminant level (MCL) standard (bromide, total organic carbon, total dissolved solids (TDS), and chloride), high levels of these constituents can be of concern, especially with regard to potential treatment costs to downstream users. SWP water meets or exceeds applicable standards. However, some constituents are at or approaching SWP acceptance criteria, particularly selenium and arsenic.

Groundwater Quality

Localized impairments, including total dissolved solids (TDS), sodium chloride, sulfate, nitrate, organic compounds, and arsenic, are common in the County's groundwater, impairing the water quality.

Table 4.10-6
Comparison of SWP Water Quality Criteria

Constituent	SWP Contract Criteria (ppm)	CA Drinking Water Standards (2010) (ppm)
Arsenic	0.05	0.010
Hexavalent Chromium	0.05	-
Copper	3.0	1 [(b)]
Fluoride	1.5	2 [(b)]
Boron	0.6[(a)]	-
Sodium Percentage	50%[(a)]	-
Iron and Manganese, together	0.3	0.3 and 0.05 [(b)]
Magnesium	125	-
Lead	0.1	0.015
Phenol	0.001	-
Selenium	0.05	0.05
Zinc	15	5 [(b)]
Sulfate	110[(a)]	250 [(b)]
Total Hardness	180[(a)]	No standard
TDS	440[(a)]	500 [(b)]
Chloride	110[(a)]	250 [(b)]

Notes:
[(a)] *Monthly Average*
[(b)] *Denotes secondary standard.*
Source: KCWA, 2020 Tulare Lake Basin Portion of Kern County IRWMP, Section 2.8.2 Imported Water Quality.

According to the Central Valley Region Water Quality Control Board (CVRWQCB), substantial increases in the salinity pollutants found in the Tulare Lake Basin's groundwater are one of the County's long-term problems. Salt in imported water supplies, such as the SWP and CVP, is the major source of salt that circulates throughout the groundwater in Kern County. An estimated 1,206 tons of salt are annually transported to the region, and because the Tulare Lake Hydraulic Region does not have any natural outlets, the salt builds up and remains in the underlying aquifers. Agricultural practices can exacerbate the problem; irrigation water applied to the land can be high in salts, then evaporation and crop transpiration remove water from soils, and salts accumulate in the root zone. It is then necessary to apply additional water to flush the salts from the root zone, and the salts eventually end up in groundwater or surface waters. High salt concentrations (e.g., greater than the primary drinking water standard) are a particular problem in the western portion of the County. DWR and other federal, state, and local agencies continue to study alternative approaches for salt management. The CVRWQCB has stated that evaporation basins are an acceptable interim means for dealing with salts in agricultural drainage, but only when precautions are taken to limit wildlife exposure.

In 2006, the Central Valley Water Board, the State Water Board, and stakeholders began a joint effort to address salinity and nitrate problems in California's Central Valley and adopt long-term solutions that will lead to enhanced water quality and economic sustainability. Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) is a collaborative basin planning effort aimed at developing and implementing a comprehensive salinity and nitrate management program. The goal of CV-SALTS is to maintain a healthy environment and a good quality of life for all Californians by protecting our most essential and vulnerable resource: WATER.

In July 2008, the Central Valley Salinity Coalition (CVSC) was formed. CVSC represents stakeholder groups working with the Board in the CV-SALTS effort. Its purpose is to organize, facilitate, and fund efforts needed to fulfill the goals of CV-SALTS. CVSC coordinates the meetings of the CV-SALTS committees, maintains an independent website, and manages the projects originating from this effort.[25]

Nitrates are usually derived from irrigated agriculture, dairies, disposal of sewage from community waste systems and septic tanks, as well as discharges of wastewater to land. Manmade pesticides used in agriculture and naturally occurring arsenic have occasionally contaminated domestic groundwater supplies in the area.

Arsenic is both a groundwater and surface water quality issue. Arsenic is ubiquitous in the environment and is naturally present in soil, water, air, plants, and animals. Weathering of arsenic-containing rocks is

25 Central Valley Regional Water Quality Control Board, *CV-Salts,* available at: https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/. Accessed April 21, 2026.

considered to be the primary natural source of arsenic in the environment. Arsenic is found in groundwater throughout the state, resulting from its natural occurrence. It may also be present in localized environments in high concentrations as a result of specific releases, such as from mine tailings and chemical spills. Arsenic treatment tends to be expensive, not just because of the more exotic treatment technologies required, but because of the large volumes of groundwater that typically must be treated when the source of the arsenic is naturally occurring. As described earlier, if the SWP acceptance standard for arsenic is lowered, it could limit the ability to introduce groundwater recovered from water banking operations into SWP facilities.

The general quality of groundwater in Kern tends to be degraded as a result of land uses, including agricultural, and water management practices. Fertilizers and pesticides typically used on agricultural lands infiltrate and degrade groundwater. Septic systems and leaking underground storage tanks can also impact groundwater. Summarized below are the primary impairments found in Kern County groundwater due to land use practices, stormwater runoff, and natural processes.

Salinity. Overdraft of groundwater for municipal, agricultural, and industrial purposes has, in part, led to the accumulation of salts in Kern's groundwater resources. In addition, wastewater discharges in inland regions can result in salt buildup from fertilizer and dairy waste.

To address the salinity problem, an increasing number of water agencies are working with other water, groundwater, and wastewater agencies, state and local government agencies, and interested associations on researching and developing salinity management goals and action plans.

Perchlorate. Ammonium perchlorate is a primary ingredient of solid rocket propellant and is used in the manufacture of some types of munitions and fireworks. Ammonium perchlorate and other perchlorate salts are readily soluble in water, dissociating into the perchlorate ion that is highly mobile in groundwater. Small amounts of perchlorate have been found in the Colorado River, with higher concentrations in a number of groundwater basins in Southern California. The primary human health concern related to perchlorate is its effects on the thyroid.

While perchlorate cannot be removed using conventional water treatment, nanofiltration and reverse osmosis do work effectively, but at a very high cost. A number of companies have developed an ion exchange process that removes perchlorate but creates hazardous waste brine. Nonetheless, a number of sites in Southern California have successfully installed ion exchange systems. Thus, while effective treatment options are available, the overriding consideration in decisions about whether to recover perchlorate-contaminated groundwater is the cost-effectiveness of available technologies.

Total Organic Carbon (TOC) and Bromide. When source water containing high levels of TOC and bromide is treated with disinfectants such as chlorine or ozone, disinfection byproducts (DBPs) form.

Studies have shown a link between certain cancers and DBP exposure. In addition, some studies have shown an association between reproductive and developmental effects and chlorinated water. In December 1998, the US Environmental Protection Agency (EPA) adopted more stringent regulations for DBPs.

Existing levels of TOCs and bromide in Delta water supplies present challenges to agencies receiving water from the SWP to monitor and maintain safe drinking water supplies. A primary objective of the Delta Stewardship Council (formerly the California Bay-Delta) process is the protection and improvement of the water quality of the SWP. Although exact future drinking water standards are unknown, significant source water protection of SWP water supplies will almost certainly be a necessary component of meeting future standards cost-effectively.

Methyl Tertiary Butyl Ether and Tertiary Butanol (MTBE). The use of MTBE (and other oxygenates) in gasoline was mandated to achieve reductions in air pollution, including emissions of benzene, a known human carcinogen. However, this reduction in air pollution has been achieved at the expense of creating a serious groundwater and surface water problem. MTBE is very soluble in water and moves quickly into the groundwater. It is introduced into surface water bodies from the motor exhausts of recreational watercraft. Several lakes within Kern County permit recreational watercraft use and thus are susceptible to MTBE infiltration. MTBE is also resistant to chemical and microbial degradation in water, making treatment more difficult than the treatment of other gasoline components.

MTBE presents a significant problem for local groundwater basins. Leaking underground storage tanks and poor fuel-handling practices at local gas stations provide a source of MTBE in groundwater. One gallon of MTBE alone (11 percent MTBE by volume) is enough to contaminate about 16.5 million gallons of water. Such contamination has caused some water agencies to close wells.

A combination of advanced oxidation processes followed by granular activated carbon has been found to be effective in reducing the levels of MTBE contaminants by 80 to 90 percent. This may make it possible for local water agencies to treat their groundwater sources to comply with water quality standards. The cost of such treatment, however, could cause some agencies to increase imports as a means of avoiding this cost.

Arsenic. Arsenic, a naturally occurring substance in drinking water, has been identified as a risk factor for lung and urinary bladder cancer. A number of Southern California water sources have been identified as containing arsenic concentrations exceeding the current federal standard. The most current monitoring results submitted to the California Department of Public Health in 2017 showed that Kern County had 155

wells with at least one detection of arsenic above the State Maximum Contaminant Level (MCL) in sources of affected areas.[26]

It appears likely that current treatment standards will increase cost but not necessarily decrease local water supplies. However, water agencies may choose to increase their use of imported water to avoid this additional cost.

Radon. Radon, a naturally occurring substance in groundwater, has not been a significant problem for most water agencies in the Kern County region. Where radon is a problem, air-stripping through aeration is the cost-effective treatment option. However, stripping results in outgassing of radon into the air. Currently, the US EPA has determined that the risk posed by this outgassing is less than that posed by radon in the water.

Uranium. A 10.5 million-ton pile of uranium mine tailings at Moab, Utah, lies 600 feet from the Colorado River. Rainwater has been seeping through the pile and contaminating the local groundwater, causing a flow of contaminants into the river. It also has the potential to wash millions of tons of material containing uranium into the Colorado River as a result of a flood or other natural disaster.

Operations and maintenance activities at the site include intercepting some of the contaminated groundwater before it discharges into the river. The former mill site was transferred to the Department of Energy in 2001 for cleanup and reclamation. Since then, more than 11.6 million tons of tailings have been shipped.[27]

4.10.1.8 Flooding

Flooding generally occurs when soil and vegetation cannot absorb excess rainwater or snowmelt, and water runs off the land in quantities that cannot be carried in stream channels or kept in natural ponds or man-made reservoirs. Periodic floods occur naturally on many rivers, forming areas known as floodplains. These river floods usually result from heavy rain, sometimes combined with melting snow, which causes the rivers to overflow their banks. A flood that rises and falls rapidly with little or no advance warning is called a flash flood. Flash floods usually result from intense rainfall over a relatively small area.

Kern County has been historically vulnerable to flooding because of the network of streams that run through the valley and the adjacent low-lying terrain. Much of the Kern basin lies within the natural

---

26 California State Water Board. *Groundwater Information Sheet.* 2017. Arsenic. Available online at: https://www.waterboards.ca.gov/gama/docs/coc_arsenic.pdf, accessed on April 3, 2026.

27 US Department of Energy. *Moab By the Numbers*. Available online at: https://www.energy.gov/em/moab/articles/moab-umtra-numbers

floodplain of the Kern River, and many low-lying areas near the Kern River are located in the 100-year floodplain. Principal impacts of flooding include damage to permanent structures, relocation of non-stationary objects, loss of human life, and damage to infrastructure and soil conditions. After the initial damage from floodwaters, standing water often creates a secondary level of destruction by ruining crops, further undermining and damaging infrastructure, and contaminating water wells.

Flooding occurs occasionally on streets and roads in urbanized areas where storm waters are diverted into manmade or artificial drainage systems. Storm water is not able to permeate and percolate into the soil, and is diverted into a storm drainage system in urbanized areas with significant surface areas covered with impervious surfaces. In some areas, these drainage systems are occasionally overloaded with storm water drainage, or the drains become clogged with leaves and other debris, thereby impeding storm water drainage onto transportation facilities. The ability of the storm drainage system to accommodate water flows is also largely based on ground permeability and infrastructure capacity. In metropolitan areas, agencies responsible for maintaining and upgrading drainage facilities to accommodate volume are local cities and the County.

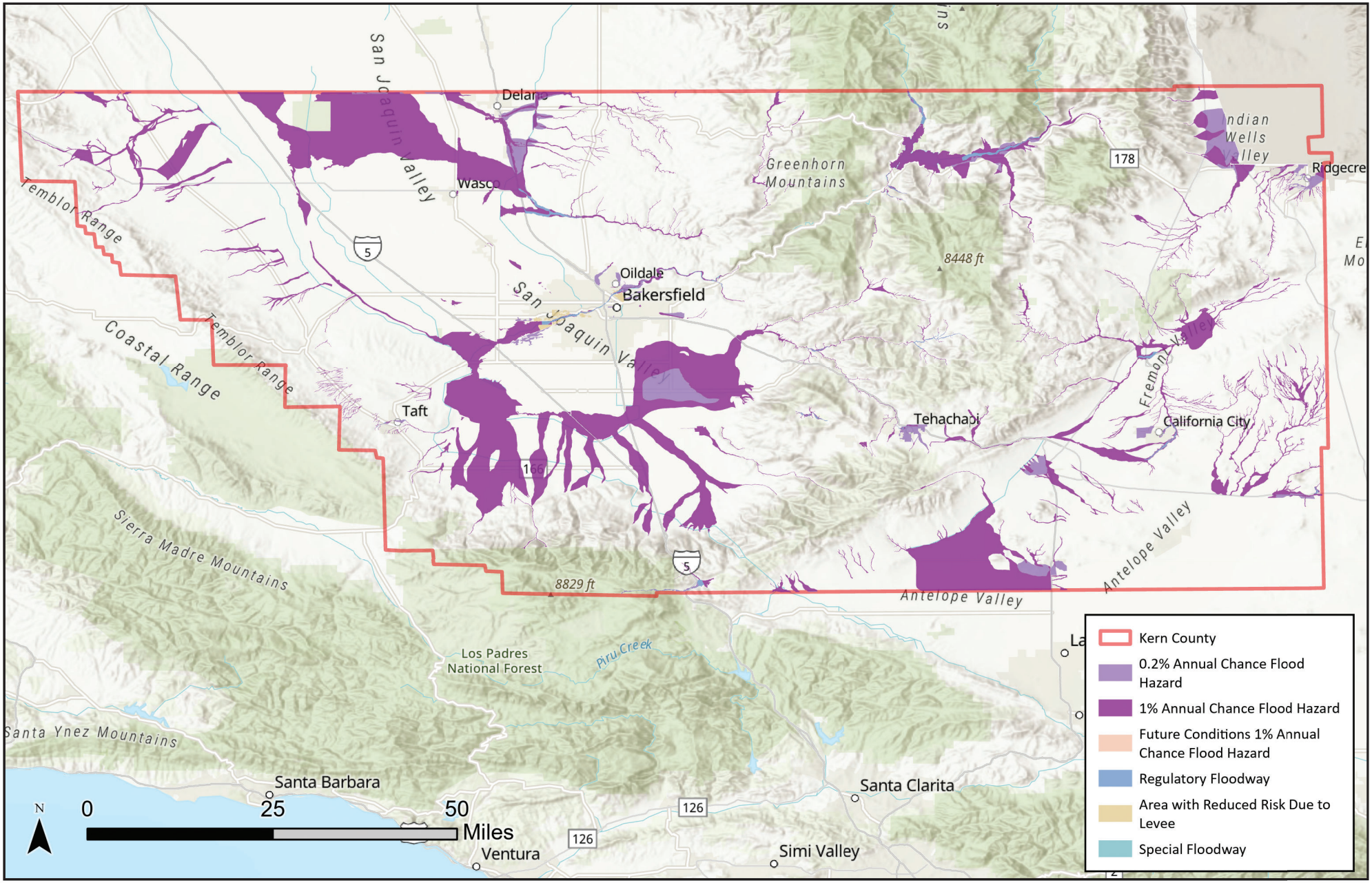
100-Year Floodplain

The 100-Year floodplain denotes an area that has a one (1) percent chance of being inundated during any particular 12-month period. The risk of this area being flooded in any century is one (1) percent, but statistically, the risk is almost 40 percent in any 50-year period. Floodplain zones are determined by the Federal Emergency Management Agency (FEMA) and used to create Flood Insurance Rate Maps (FIRMs). These tools assist communities in mitigating flood hazards through land use planning. FEMA also outlines specific regulations for any construction located within a 100-year floodplain, whether residential, commercial, or industrial. Kern County's FIRM number is 060075.

Figure 4.10-2, FEMA Flood Zones in Kern County, illustrates the various flood zones located throughout Kern County. A description of each FEMA flood zone included on the figure is below:

Zone A: This zone is listed as a high-risk and special flood hazard area; in addition, FEMA has designated these lands as within the 100-year floodplain. Further, these areas are subject to inundation by the 1-percent-annual-chance flood event.

Zone AH: This zone is listed as a high risk and special flood hazard area. Further, these areas are subject to inundation by the 1-percent-annual-chance shallow flooding (usually in areas of ponding) where average depths of water are 1 to 3 feet.



SOURCE: Esri, 2026

FIGURE **4.10-2**

IMPACT SCIENCES

FEMA Flood Zones in Kern County

1170.004•04/26

Zone X: This zone is listed as a moderate and minimal risk area. These areas include: moderate risk areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1-percent-annual-chance flood by a levee.

Flood Protection Measures

The County has installed flood prevention infrastructure and participates in a comprehensive flood-damage reduction program in an effort to protect the region from floods. Levees and other flood control structures have been installed by various agencies and property owners as a means to improve the County's flooding conditions. Further, the KCWA participates in floodplain management measures, including the preparation of hydrology and flood-frequency studies, special storm reports, and flood area delineations.

4.10.2 REGULATORY FRAMEWORK

4.10.2.1 Federal

Clean Water Act (CWA)

The federal CWA (33 USC section 1251 *et seq.*) of 1972 is the basic federal law that addresses surface water quality control and protection of beneficial uses of water. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters through prevention, reduction, and elimination of pollution. The CWA applies to discharges of pollutants into waters of the U.S. The CWA establishes a framework for regulating storm water discharges from municipal, industrial, construction, and other activities under National Pollutant Discharge Elimination System (NPDES) regulations. In California, the SWRCB administers the NPDES program. The following CWA sections are most relevant to the regulation of surface water in Kern County.

Water Quality Standards and Section 303(d)

CWA section 303 requires states to adopt water quality standards for all surface waters of the U.S. As defined by the CWA, water quality standards consist of four elements: designated beneficial uses of water bodies, water quality criteria to protect designated uses, an anti-degradation policy to maintain and protect existing uses and high-quality waters, and general policies addressing implementation issues. Under CWA section 303(d) (33 USC § 1313[d]), states are required to develop a list of water bodies that are considered to be "impaired" from a water quality standpoint. Water bodies that appear on this list either do not meet or are not expected to meet water quality standards, even after the minimum required levels of pollution

control technology have been implemented to reduce point-source discharges. The law requires that respective jurisdictions establish priority rankings for surface water bodies on the list and develop action plans (TMDLs) to improve water quality. A TMDL is a calculation of the maximum amount of a specific pollutant that a water body can receive and still meet federal water quality standards as provided in the CWA. TMDLs account for all sources of pollution, including point sources, nonpoint sources, and natural background sources.

The SWRCB, in compliance with CWA section 303(d), publishes the list of water quality-limited segments in California, which includes a priority schedule for development of TMDLs for each contaminant or "stressor" affecting the water body.[28]

Section 401—Water Quality Certification

CWA section 401 requires that an applicant pursuing a federal permit to conduct any activity that may result in a discharge of a pollutant obtain a water quality certification (or waiver). Water quality certifications are issued by RWQCBs in California. Under CWA, the state (as implemented by the relevant board) must issue or waive CWA section 401 water quality certification for the Project to be permitted under CWA section 404. Water quality certification requires the evaluation of water quality considerations associated with dredging or the placement of fill materials into waters of the United States. Construction of individual projects under the 2022 RTP would require CWA section 401 certification if federal permits, such as Section 404 permits, are required.

National Pollutant Discharge Elimination System Waste Discharge Regulations

The 1987 amendments to the Federal Water Pollution Control Act established the National Pollutant Discharge Elimination System (NPDES) permit program to control discharges of pollutants from point sources [Clean Water Act (CWA) section 402]. The 1987 amendments to CWA created a new section of CWA devoted to stormwater permitting (CWA section 402[p]). The EPA has granted the State of California primacy in administering and enforcing the provisions of CWA and the NPDES permit program. The NPDES permit program is the primary federal program that regulates point-source and nonpoint-source discharges to waters of the United States. SWRCB issues both general and individual permits for certain activities. Relevant general and individual NPDES permits are discussed below.

28 SWRCB 2011.

Section 404 – Permitting Discharges of Dredge or Fill

Under Section 404 of the CWA, the US Army Corps of Engineers (USACE) has jurisdiction over "waters of the United States," including "wetlands." The term "waters of the US" includes (1) all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce (including sightseeing or hunting), including all waters subject to the ebb and flow of the tide; (2) all interstate waters including interstate wetlands; (3) all waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce; (4) all impoundments of water mentioned above; (5) all tributaries of waters mentioned above; (6) the territorial seas; and (7) all wetlands adjacent to the waters mentioned above.[29]

Section 404 permits are required for discharges of dredged or fill materials into waters of the United States, including wetlands. Permits authorized by USACE under the CWA typically involve mitigation to offset unavoidable impacts on wetlands and other waters of the United States in a manner that achieves no net loss of wetland acres or values.

The use of an authorized Nationwide Permit or issuance of an individual permit requires the project applicant to demonstrate compliance with the USACE's Final Compensatory Mitigation Rule. USACE requires mitigation for impacts to regulated resources. The concept of "no let loss" of wetlands functions and values is an important aspect of USACE's outlook on mitigation. The goal of no net loss has evolved; the most current national direction is available in the Final Compensatory Mitigation Rule.[30] This compensatory mitigation process seeks to replace the loss of existing aquatic resource functions and area. Project proponents required to complete mitigation are encouraged to use a watershed approach and watershed planning information. The Compensatory Mitigation Rule establishes performance standards, sets timeframes for decision making, and to the extent possible, establishes equivalent requirements and standards for the three sources of compensatory mitigation:

- Permittee-responsible mitigation
- Contribution of in-lieu fees (second in preference)

---

29 EPA and USACE have struggled to define and apply the term "waters of the United States" which resulted in the agencies jointly promulgating the Clean Water Rule: Definition of "Waters of the United States" (WOTUS Rule) in 2015. 80 Fed. Reg. 37054. However, on June 9, 2021, EPA and USACE announced their intent to revise the definition of "waters of the United States." (See https://www.epa.gov/wotus/current-implementation-waters-united-states, accessed April 14, 2022)). The agencies are currently in the process of this revising the definition, and in the meantime, the pre-2015 regulatory definition of "Waters of the United States," i.e., Title 40, Code of Federal Regulations section 230.3(s) remains in place.

30 U.S. Army Corps of Engineers (USACE). 2015. *Final Compensatory Mitigation Rule.*

- Use of mitigation bank credits (preferred)

In accordance with Section 401 of the CWA, applicants for a Section 404 permit must obtain water quality certification from the appropriate Regional Water Quality Control Board (RWQCB), in this case Central Valley RWQCB, indicating that the discharge will not violate California water quality standards.

Nonpoint Source Pollution Control Program Plan

California's Nonpoint Source Pollution Control Program Plan 1998 – 2013 was developed by the SWRCB and California Coastal Commission, in cooperation with the nine Regional Water Quality Control Boards, to conform to the requirements of Coastal Zone Reauthorization Act (CZARA) and the CWA. The plan is intended to protect the State's water quality by expanding its polluted runoff control efforts. It specifies 60 management measures to prevent or reduce water quality degradation from agriculture, forestry, urban areas, marinas and boating, hydromodification, and wetlands. It provides a single statewide approach to dealing with Nonpoint Source (NPS) pollution. A total of 28 state agencies are working collaboratively through the Interagency Coordinating Committee to implement the NPS Pollution Control Program Plan.

Regulations Covering Development in Floodplains

National Flood Insurance Program Congress passed the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 (42 USC section 4001 *et seq.*). The intent of these acts was to reduce the need for large, publicly funded flood control structures and disaster relief by restricting development on floodplains. FEMA administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA issues FIRMs for communities participating in the NFIP.

Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation, and economics. It generally requires federal agencies constructing, permitting, or funding to:

- avoid incompatible floodplain development;
- be consistent with the standards and criteria of the NFIP; and
- restore and preserve natural and beneficial floodplain values.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA), 42 USC sections 300(f) *et seq.*, ensures the quality of Americans' drinking water. The law requires actions to protect drinking water and its sources (rivers, lakes, reservoirs, springs, and groundwater wells), and applies to public water systems serving 25 or more people. It authorizes the EPA to set national health-based standards for drinking water to protect against both

naturally occurring and manmade contaminants. In addition, it oversees the states, municipalities, and water suppliers that implement the standards.

EPA standards are developed as a Maximum Contaminant Level (MCL) for each chemical or microbe. The MCL is the concentration that is not anticipated to produce adverse health effects after a lifetime of exposure, based upon toxicity data and risk assessment principles. EPA's goal in setting MCLs is to ensure that even small violations for a period of time do not pose a significant risk to the public's health over the long run. National Primary Drinking Water Regulations (NPDWRs, or "primary standards") are legally enforceable standards that limit the levels of contaminants in drinking water supplied by public water systems. Secondary standards are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems, but does not require systems to comply. However, states may choose to adopt them as enforceable standards.

4.10.2.2 State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code section 13000 *et seq.*), the policy of the State is as follows:

- That the quality of all the waters of the State shall be protected;
- That all activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason; and
- That the State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation.

The Porter-Cologne Act established nine Regional Water Boards (based on hydrogeologic barriers) and the State Water Board, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The State Water Board provides program guidance and oversight, allocates funds, and reviews Regional Water Boards' decisions. In addition, the State Water Board allocates rights to the use of surface water. The Regional Water Boards have primary responsibility for individual permitting, inspection, and enforcement actions within each of the nine hydrologic regions.

The State Water Board and Regional Water Boards have numerous NPS-related responsibilities, including monitoring and assessment, planning, financial assistance, and management.

The Regional Water Boards regulate discharges under the Porter-Cologne Act primarily through issuance of NPDES permits and waste discharge requirements (WDRs for point and nonpoint source discharges. Anyone discharging or proposing to discharge materials that could affect water quality (other than to a community sanitary sewer system regulated by an NPDES permit) must file a report of waste discharge..

The Porter-Cologne Act also implements many provisions of the Clean Water Act, such as the NPDES permitting program. Section 401 of the Clean Water Act gives the State Water Board the authority to review any proposed federally permitted or federally licensed activity that may impact water quality and to certify, condition, or deny the activity if it does not comply with State water quality standards.

The Porter-Cologne Act also requires the adoption of water quality control plans (Basin Plans) that contain the guiding policies of water pollution management in California. A number of statewide water quality control plans have been adopted by the State Water Board. In addition, regional water quality control plans (basin plans) have been adopted by each of the Regional Water Boards and are updated as necessary and practical. These plans identify the existing and potential beneficial uses of waters of the State and establish water quality objectives to protect these uses. The basin plans also contain implementation, surveillance, and monitoring plans. Statewide and regional water quality control plans include enforceable prohibitions against certain types of discharges, including those that may pertain to nonpoint sources. Portions of water quality control plans, the water quality objectives, and beneficial use designations are subject to review by the U.S. EPA. When approved, they become water quality standards under the Clean Water Act.

California Regional Water Quality Control Board, Central Valley Region—Basin Plan

Water quality in streams and aquifers of the region is guided and regulated by the Central Valley RWQCB Tulare Lake Basin Plan. State policy for water quality control is directed at achieving the highest water quality consistent with the maximum benefit to the people of the state. To develop water quality standards consistent with the uses of a water body, the Central Valley RWQCB classifies historical, present, and potential future beneficial uses as part of its basin plan. The Central Valley RWQCB's Basin Plan identifies the beneficial uses of the Tulare Lake Basin. A detailed discussion of beneficial uses and water quality objectives can be found in the Tulare Lake Basin Plan.

Municipal Storm Water NPDES Permit

The Municipal Storm Water Permitting Program established under NPDES regulates storm water discharges from municipal separate storm sewer systems (MS4s). In the first phase, the SWRCB issued

permits to medium and large municipalities, typically grouped as co-permittees in a metropolitan region. In the second phase, the SWRCB adopted a General Permit for the Discharge of Storm Water from Small MS4s (State Water Board Order WQ 2013-0001-DWQ). The permits require a municipality or other storm water discharger to develop and implement a storm water management plan or program. The storm water programs incorporate BMPs that include construction controls (such as a model grading ordinance), legal and regulatory approaches (such as storm water ordinances), public education and industrial outreach (to encourage the reduction of pollutants at various sources), inspection activities, wet-weather monitoring, and special studies.

The CVRWQCB in 2016 adopted a General Permit for MS4 discharges. It states: "[t]his Order regulates discharges of storm water and authorized non-storm water from municipal separate storm sewer systems (MS4s). Owners or operators of large and medium MS4s are expected to enroll under this Order as their current individual MS4 Permits expire. Owners or operators of small regulated MS4s currently enrolled under the State Water Resources Control Board's Statewide General Phase II Small MS4 Permit may voluntarily enroll under this Order."

Construction Stormwater NPDES Permit

A Construction General Permit for Discharges of Storm Water Associated with Construction Activity (SWRCB Order 2009-0009-DWQ (as amended by Orders 2010-0014-DWQ and 2012-0006-DWQ) is required for dischargers or projects who disturb one acre or more of soil or whose project disturbs less than one acre, but which is part of a larger common plan of development that in total disturbs one acre or more. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list Best Management Practices (BMPs) that the discharger will use to protect stormwater runoff and show the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP.

General Dewatering Permit

Small amounts of construction-related dewatering are covered under the General Construction Permit. Large amounts of dewatering, particularly over lengthy periods of time, would be required to comply with

the CVRWQCB's General Dewatering Permit (Order R5-2013-0074). Project-related dewatering is likely to be limited in nature and scope and would likely be covered under the General Construction Permit. However, larger projects with more dewatering than covered under the Construction General Permit require a Low Threat Discharge and Dewatering Permit from the Central Valley RWQCB.

Regional Water Quality Control Board Central Valley Region

The Regional Water Quality Control Board (RWQCB) is responsible for implementing policies of the SWRCB, such as ensuring compliance with discharge thresholds and operating standards. Kern County is located within the RWQCB's Central Valley Region. Section 303(d) of the CWA requires the SWRCB to list impaired water bodies in the state and determine total maximum daily loads (TMDLs) of pollutants or other stressors that are contributing excessively to these impaired waters. SWRCB is also responsible for granting water rights permits, approving water right transfers, investigating violations, and may reconsider or amend water rights.

As described above, the EPA has delegated most of the administration of the CWA in California to the SWRCB. In turn, much of the responsibility for the implementation of the SWRCB's policies is delegated to the nine RWQCBs. The nine RWQCBs develop and enforce water quality objectives and implementation plans.

The federal CWA directs states to review water quality standards every three years and, as appropriate, modify and adopt new standards. CWA also regulates wastewater operation through state boards. CWA authorizes the EPA to administer requirements primarily to deal with the quality of effluent which may be discharged from treatment facilities, the recycling of residual solids generated in the process, the reuse of reclaimed water for irrigation and industrial uses to conserve potable water, and the nature of waste material (particularly industrial) discharged into the collection system.

State Senate Bills (SB) 610 and 221—Water Supply Planning

SB 610 and SB 221 were adopted in 2001. These bills were enacted to improve the link between information on water supply availability and certain land use decisions made by cities and counties. The bills require lead agencies to obtain an assessment from the local water supplier to determine the sufficiency of the water supply for proposed development over certain sizes, depending on the number of dwelling units, the square footage of a proposed shopping center, commercial office, or industrial use, to name a few. SB 610 applies at the time an EIR is prepared; SB 221 applies at the time a Tentative Tract Map or other related project actions are approved. The 2022 RTP is not considered a "water-demand" project subject to SB 610 (or SB 221) requirements; see *State CEQA Guidelines* section 15155(a).

Urban Water Management Planning Act

The California Urban Water Management Planning Act (Water Code Part 2.6) states that each urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet (AF) of water annually, should make every effort to ensure the appropriate level of reliability in its water service is sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years by preparing a urban water management plan (UWMP) and updating it every 5 years. The Urban Water Management Planning Act describes the contents of UWMPs and requires each agency's UWMP to assess the reliability of the agency's water resources over a 20-year planning horizon.[31]

Water Conservation Act of 2009 (Senate Bill X 7-7)

The Water Conservation Act of 2009 (SB X7-7) was signed into law in November 2009; it calls for progress towards a 20 percent reduction in per capita water use statewide by 2020. The legislation mandates each urban water retail supplier to develop and report a water use target in the retailer's UWMP. The legislation requires that retailers report an interim water use target, their baseline daily per capita use, and 2020 compliance daily per capita use, along with the basis for determining those estimates. SB X7-7 provides four possible methods for an urban retail water supplier to use to calculate its water use target. DWR has developed methodologies for calculating base daily per capita water use, baseline commercial, industrial and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscape area water use. Agencies not in compliance with SB X7-7 will be ineligible for state loan and grant funding.

SB X7-7 also contains requirements for agricultural water suppliers. All agricultural water suppliers, either publicly or privately owned, which irrigate 10,000 or more acres, are required by SB X7-7 to implement critical Efficient Water Management Practices (EWMPs) and additional EWMPs if locally cost-effective and technically feasible.

Critical EWMPs include:

- Each agricultural water supplier is to measure the volume of water delivered to customers with sufficient accuracy to comply with standards set by DWR.

---

31 See also, Improvement District 4 – Kern County Water Agency. *Urban Water Management Plan 2020 Update*. Available online at: https://www.kcwa.com/wp-content/uploads/2021/07/UWMP2020FINAL.pdf, accessed on March 21, 2022.

- Each agricultural water supplier is to develop a pricing structure for water customers, based at least in part on the volume of water delivered.

SB X7-7 also created the Agricultural Water Management Planning Act, which requires affected agricultural water suppliers to adopt Agricultural Water Management Plans (AWMPs). These plans facilitate the management and conservation of water suppliers and also guide and document the implementation of EWMPs.

Assembly Bill 1881 – Water Conservation in Landscaping Act

Assembly Bill (AB) 1881 built upon many past legislative acts related to landscape water use efficiency. AB 1881, the Water Conservation in Landscaping Act of 2006, enacted many landscape efficiency recommendations of the California Urban Water Conservation Council (CUWCC) for improving the efficiency of water use in new and existing urban irrigated landscapes in California. AB 1881 required DWR, not later than January 1, 2009, to update the existing Model Local Water Efficient Landscape Ordinance and local agencies to adopt the updated model ordinance or an equivalent no later than January 1, 2010. DWR has completed the update of the Model Local Water Efficiency Landscape Ordinance. The law also requires the Energy Commission to adopt performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves, to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

The Model Local Water Efficient Landscape limits the water budget for new landscapes (or rehabilitated landscapes), greater than 2,500 square feet, to 70 percent of the local reference evapotranspiration (ET). The model ordinance lays out the procedures for evaluating potential landscape water use during the land development process. In addition, the ordinance contains requirements for planting as well as the design and maintenance of irrigation systems, all with the intent of limiting outdoor water use and avoiding irrigation runoff.

Assembly Bill 1420

AB 1420, passed in 2007 and in effect as of January 2009, changes the funding eligibility requirements of Section 10631 of the Water Code (Urban Water Management Planning Act). For any urban water supplier to be eligible for grant or loan funding administered by DWR, the SWRCB, or the Bay-Delta Authority (such as Propositions 50 and 84), the supplier must show implementation of the 14 water use efficiency demand management measures/best management practices (DMMS/BMPs) listed and described in the UWMP Act and the CUWCC Memorandum of Understanding, or show the schedule by which the supplier will begin implementing the DMMs/BMPs. Any supplier not implementing the measures based on cost-effectiveness must submit proof showing why the measures are not cost-effective.

Assembly Bill 2882

This bill was passed in 2008 and encourages public water agencies throughout California to adopt conservation rate structures that reward consumers who conserve water. Prior to AB 2882, state law authorized water agencies to promote conservation using rate structures; however, some agencies were concerned that such rate structures may be inconsistent with other parts of state law. AB 2882 clarifies the allocation-based rate structures and establishes standards that protect consumers by ensuring a lower base rate for those who conserve water.

Sustainable Groundwater Management Act

In September 2014, the state passed legislation requiring that California's critical groundwater resources be sustainably managed by local agencies. The Sustainable Groundwater Management Act (SGMA) gives local agencies the power to sustainably manage groundwater and requires Groundwater Sustainability Plans (GSPs) to be developed for medium- and high-priority groundwater basins.

Groundwater Management Act

The Groundwater Management Act of 1992 (Water Code § 10750 *et seq.*), also known as AB 3030 (Stats. 1992, ch. 947), provides guidelines for local agencies to acquire authority over the management of groundwater resources in basins recognized by DWR. Its intent is to promote the voluntary development of groundwater management plans and provide criteria for the plans in order to ensure sustainable groundwater supplies for the future. It stipulates the technical components of a groundwater management plan as well as procedures for such a plan's adoption, including passage of a formal resolution of intent to adopt a groundwater management plan, and holding a public hearing on the proposed plan. AB 3030 also allows agencies to adopt rules and regulations to implement an adopted plan, and empowers agencies to raise funds to pay for the facilities needed to manage the basin, such as extraction wells, conveyance infrastructure, recharge facilities, and testing and treatment facilities. Senate Bill (SB) 1938 (Stats. 2002, ch. 603) also requires basin management objectives and other additions to be included in local groundwater management plans to comply with California Water Code (Water Code §10750–10756).

Regulations Related to Recycled Water

Under Code of California Regulations Title 22, the state Department of Public Health established statewide effluent bacteriological and treatment reliability standards for recycled water uses (on July 1, 2014, the state's Drinking Water Program was transferred to the SWRCB). The standards are based on the potential for human contact with recycled water. The RWQCB has established and enforces requirements for the application and use of recycled water. Permits are required from the RWQCB for any recycling operation.

Applicants for a permit are required to demonstrate that the proposed recycled water operation is in compliance with Title 22 and will not exceed the ground and surface water quality objectives in the regional basin plan.

4.10.2.3 Local

2020 Kern County Integrated Regional Water Management Plan

The California Natural Resources Agency has identified several climate change adaptation strategies for water management systems. One of the primary strategies is the preparation of integrated regional water management plans. Integrated regional water management planning can be used to improve the coordination of local resources, including groundwater storage and banking, conjunctive use with surface runoff, and utilization of flood flows. Other adaptation strategies identified by the California Natural Resources Agency include:

- Aggressive water use efficiency in urban and agricultural sectors;
- Use of recycled water (where energy efficient);
- Integrated flood management (projects to reduce flood peaks while increasing aquifer recharge and environmental water flows);
- Development of a Central Valley Flood Protection Plan;
- Local emergency flood preparedness;
- Land use policies to decrease flood risk;
- Establishment of flood plain corridors;
- Expand water storage; and
- Protection of recharge areas.

Many of these strategies are currently in use in the Region or are planned to be implemented.

General Plans

General plans can be described as a city or county's "blueprint" for future development. It represents the community's view of its future; a constitution made up of the goals and policies upon which the city council, board of supervisors, or planning commission will base their land use decisions. To illustrate its

importance, all subdivisions, public works projects, and zoning decisions (except in charter cities) must be consistent with the general plan. If inconsistent, they must not be approved.

State law requires that each city and each county adopt a general plan containing the following seven components or "elements": land use, circulation, housing, conservation, open-space, noise, and safety (Government Code Sections 65300 *et seq.*). At the same time, each jurisdiction is free to adopt a wide variety of additional elements covering subjects of particular interest to that jurisdiction such as recreation, urban design, or public facilities. The 11 cities included in Kern County have created general plans. The general plans of the two largest jurisdictions that are anticipated to receive the most impact from the RTP (Kern County and the city of Bakersfield) are discussed below. Other jurisdictions in the county have similar policies.

Kern County General Plan

The General Plan is a policy document with planned land use maps and related information that are designed to give long-range guidance to those County officials making decisions affecting the growth and resources of the unincorporated Kern County jurisdiction, excluding the metropolitan Bakersfield planning area. This document helps to ensure that day-to-day decisions are in conformance with the long-range program designed to protect and further the public interest related to Kern County's growth and development. The General Plan also serves as a guide to the private sector of the economy in relating its development initiatives to the public plans, objectives, and policies of the County.

Policies from Kern County's General Plan that relate to the 2026 RTP include:

- Encourage the preservation of the floodplain's flow conveyance capacity, especially in floodways, to be open space/passive recreation areas throughout the County.
- Construction of structures that impede water flow in a primary floodplain will be discouraged.
- The County will allow lands which are within flood hazard areas, other than primary floodplains, to be developed in accordance with the General Plan and Floodplain Management Ordinance, if mitigation measures are incorporated so as to ensure that the proposed development will not be hazardous within the requirements of the Safety Element (Chapter 4) of the General Plan.
- Protect and maintain watershed integrity within Kern County.
- The efficient and cost-effective delivery of public services and facilities will be promoted by designating areas for urban development which occur within or adjacent to areas with adequate public service and facility capacity.

- Ensure the maintenance and repair of existing water systems.
- Encourage the consolidation or elimination of small water systems.
- Ensure that water quality standards are met for existing users and future development.
- All methods of sewage disposal and water supply shall meet the requirements of the Kern County Environmental Health Services Department and the California Regional Water Quality Control Board. The Environmental Health Department shall periodically review and modify, as necessary, its requirements for sewage disposal and water supply, and shall comply with any new standards adopted by the state for implementation of Government Code Division 7 of the Water Code, Chapter 4.5 (Section 13290-13291.7).
- The extent of community-type public services and facilities required for urban densities in the Mountain, Valley and Desert regions vary according to the following criteria:
- Within the Valley and Desert regions, new residential development sites less than or equal to 1 acre net lot size density, commercial, and industrial land uses shall be serviced by necessary and appropriate sewer and water systems.
- Within the Mountain Region, new residential development sites less than or equal to 2.5 acres gross lot size density, commercial, and industrial land uses shall be serviced by necessary and appropriate sewer and water systems.
- To encourage effective groundwater resource management for the long-term economic benefit of the County the following shall be considered:
- Promote groundwater recharge activities in various zone districts.
- Support for the development of Urban Water Management Plans and promote Department of Water Resources grant funding for all water providers.
- Support the development of groundwater management plans.
- Support the development of future sources of additional surface water and groundwater, including conjunctive use, recycled water, conservation, additional storage of surface water and groundwater and desalination.

- Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood protection ordinances.

- Areas identified by the Natural Resource Conservation Service (formerly Soil Conservation Service) as having high range-site value should be conserved for Extensive Agriculture uses or as Resource Reserve, if located within a County water district.

- Areas along rivers and streams will be conserved where feasible to enhance drainage, flood control, recreational, and other beneficial uses while acknowledging existing land use patterns.

- Riparian areas will be managed in accordance with USACE, and the California Department of Fish and Wildlife rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

- Water related infrastructure shall be provided in an efficient and cost-effective manner.

- Ensure that water quality standards are met for existing users and future development.

- Ensure that adequate water storage, treatment, and transmission facilities are constructed concurrently with planned growth.

- Ensure that appropriate funding mechanisms for water are in place to fund the needed improvements resulting from growth and subsequent development.

- Ensure maintenance and repair of existing water systems.

- Encourage the development of the County's groundwater supply to sustain and ensure water quality and quantity for existing users, planned growth, and maintenance of the natural environment.

- Encourage utilization of community water systems rather than the reliance on individual wells.

- Review development proposals to ensure adequate water is available to accommodate projected growth.

- Encourage water supply purveyors to prepare master water plans for those areas of the County approaching existing design thresholds, including documentation of areas in need of system maintenance and repair.

- Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.

- Discretionary projects shall analyze watershed impacts and mitigate for construction-related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act (CEQA), to prevent the degradation of the watershed to the extent practical.

- New high consumptive water uses, such as lakes and golf courses, should require evidence of additional verified sources of water other than local groundwater. Other sources may include recycled stormwater or wastewater.

- In accordance with the Kern County Development Standards, tank-truck hauling of domestic water for land developments or lots within new land developments is not permitted.

Metropolitan Bakersfield General Plan

The following policies included in the Metropolitan Bakersfield General Plan are relevant to the 2026 RTP:

- In the County, all residential developments that provide complete public infrastructure improvements including community water distribution and sewage collection and treatment systems may be permitted a density increase up to 20 percent. All land division activities shall be consistent with this provision.

- Minimize the alteration of natural drainage and require development plans to include necessary construction to stabilize runoff and silt deposition through enforcement of grading and flood protection ordinances.

- Develop and maintain facilities for groundwater recharge in the planning area.

- Minimize the loss of water which could otherwise be utilized for groundwater recharge purposes and benefit planning area groundwater aquifers from diversion to locations outside the area.

- Support programs to convey water from other than San Joaquin Valley basin sources to the planning area.

- Support programs and policies which assure continuance or augmentation of Kern River surface water supplies.

- Provide substitute or supplemental water resources to areas already impacted by groundwater quality degradation by supporting facilities construction for surface water diversions.

- Consider each proposal for water resource usage within the context of total planning area needs and priorities – major incremental water transport, groundwater recharge, flood control, recreational needs, riparian habitat preservation, and conservation.
- Encourage and implement water conservation measures and programs.
- The city and county should pursue individual drainage plans where they are most needed.
- Investigate the preparation of a Master Drainage Plan based on the proposed growth in the planning area.

4.10.3 ENVIRONMENTAL IMPACTS

4.10.3.1 Thresholds of Significance

For the purposes of this PEIR, Kern COG has determined that adoption and/or implementation of the proposed RTP would result in significant hydrology and water quality impacts, if any of the following could occur:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality, or substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
  - Result in substantial erosion or siltation on-or-off site;
  - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or offsite;
  - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
  - Impede or redirect flood flows.

- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.
- Have sufficient water supplies available to serve the project and reasonably for seeable future development during normal dry and multiple dry years. [Note this impact is moved from *CEQA Guidelines* Appendix G Section XIX b) Utilities.]

4.10.3.2 Methodology

The analysis assesses the potential impacts on water resources that could result from the implementation of the 2026 RTP. For each potential impact, implementation of the proposed RTP is analyzed at the regional level. Implementation of the proposed RTP is also analyzed in terms of its impacts to the region's TPAs.

Impacts are assessed in terms of both land use and transportation impacts. By 2049, implementation of the proposed RTP will result in a land use pattern and transportation network that is different from existing conditions.

Determination of Significance

The methodology for determining the significance of water impacts compares the existing conditions to the RTP conditions, as required by *CEQA Guidelines Section 15126.2(a)*. The known water resources located within the region were evaluated using the criteria set forth by the California Department of Water Resources, FEMA, and the *CEQA Guidelines*. The research analysis includes water resources of local significance.

Generally, with regard to water impacts, the greater the change from existing conditions, the more noticeable the change to the environment. The construction of a new roadway generally has a greater impact on water resources than the widening of an existing one as it would result in the loss of a greater amount of permeable surface. Road widening, however, can have significant local impacts especially when requiring the removal of trees and other important landscape buffers, or when construction of noise barriers or other visual impediments is necessary.

The development of new transportation facilities may affect water resources, either through direct effects to water sources or through indirect effects to the area surrounding a resource if toxins pollute the area's water resources. The region contains a fair number of water resources; therefore, the potential for impacts to water resources is significant. Improvements within existing rights-of-way are less likely to affect existing water resources; however, new highway segments near water resources would constitute a

significant impact. Also, reducing buffer zones between transportation corridors and reduction of water resources through lane widening could cause significant impacts.

Since this document analyzes impacts to water resources on a program level only, project-level analysis of impacts must be undertaken as appropriate.

Approach to Mitigation

As discussed in **Chapter 1.0, Introduction**, Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2022 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this PEIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

4.10.3.3 Impacts and Mitigation Measures

Impact W-1 **Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.**

Regional and Transit Priority Area Impacts

Construction activities could potentially involve soil disturbance, excavation, cutting/filling, stockpiling, and grading. Consequently, erosion and sedimentation could increase, affecting water quality, as well as pollutants in the water. During site grading, trenching, and other construction activities, areas of bare soil are exposed to erosive forces during rainfall events. Bare soils are much more likely to erode than vegetated areas because of the lack of dispersion, infiltration, and retention properties created by covering vegetation. The extent of anticipated impacts is dependent on soil erosion potential, type of construction practice,

extent of disturbed area, timing of precipitation events, and topography and proximity to drainage channels.

In addition to impacts from construction activities, the proposed RTP would increase impervious surfaces in Kern County through a combination of transportation projects and development (within TPAs surfaces are already mostly covered with impervious surfaces). Substantial adverse impacts to water quality are often caused by urban runoff from increased impervious surfaces and discharges of constituents to federal Clean Water Act Section 303(d)-listed waters. Anticipated runoff contaminants from projects included in the proposed RTP include sediment, pesticides, herbicides, fertilizers, oil and grease, nutrients metals, bacteria, and trash. Contributions of these contaminants to stormwater and non-stormwater runoff could degrade the quality of receiving waters in and around the Plan area especially after the first storm event. During an initial storm event, the concentrated pollutants would be transported via runoff to stormwater drainage systems. Contaminated runoff waters could flow into the stormwater drainage systems that discharge into rivers, agricultural ditches, sloughs, and channels and ultimately could degrade the water quality of any of the County's bodies of water.

Isabella Dam has been identified under the Clean Water Act Section 303(d) as being impaired by a variety of contaminants. These constituents originate from a variety of sources, but generally include agricultural activities, such as irrigation runoff, and urban nonpoint sources of runoff from landscaping, rooftops, trash, and illegal dumping.

In order to address impaired waters, the State Water Board has several permit processes for municipal stormwater and construction runoff. In addition, several jurisdictions in the plan area have adopted BMPs and ordinances that address the issues of construction-related runoff and runoff resulting from new development. Proponents (public agencies and private developers) of construction projects that disturb one or more acres of soil or whose projects disturb less than one (1) acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain a Construction General Permit from the State Water Board. The project proponent must propose control measures consistent with the state's permit and develop a Storm Water Pollution Prevention Plan for each site, which includes BMPs to reduce potential impacts.

Further, before discharging any dewatered effluent to surface water, project proponents are required to obtain an NPDES MS4 permit and Waste Discharge Requirement from the Central Valley RWQCB. Depending on the volume and characteristics of the discharge, coverage under the NPDES General Construction Permit may be permissible. If coverage under the NPDES Construction General Permit is not allowed, projects must conform to the requirements of the General Dewatering Permit, issued by the Central Valley RWQCB.

Transportation projects where Caltrans is the lead agency are covered by the Caltrans Stormwater Program. This permit regulates all stormwater discharges from Caltrans-owned conveyances, maintenance facilities, and construction activities. Caltrans also has a Storm Water Management Plan that describes the procedures and practices used to reduce or eliminate the discharge of pollutants to storm drainage systems and receiving waters.

The 2026 RTP would directly increase impervious surfaces with the County by adding new lane miles and other transportation infrastructure to the County and could increase vehicular use leading to increased pollutants (although within TPAs surfaces are already mostly covered with impervious surfaces). The 2026 RTP would consume approximately 15,168 acres of land that would largely be converted to impervious surfaces as urban and built-up land over the lifetime of the Plan. The addition of 925 lane miles as well as increased vehicles could result in the alteration of storm flows or degradation of water quality. In urban areas, such as the TPAs, impacts could be reduced as there are fewer opportunities for expansion of roadways. However, as the potential still exists for degraded water quality, impacts would be significant. As such, mitigation is required. **Mitigation Measures MM W-1 through MM W-3** below would mitigate these impacts.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

MM W-1: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to undergo individual project review and comply with NPDES requirements and all applicable storm water regulations. Such measures include, but are not limited to:

- Complete, and have approved, a Stormwater Pollution Prevention Plan (SWPPP) prior to initiation of construction.
- Implement Best Management Practices to reduce the peak stormwater runoff from the project site to the maximum extent practicable.
- Comply with the Caltrans storm water discharge permit as applicable and implement Best Management Practices can and should be identified and implemented to manage site erosion, wash water runoff, and spill control.

- Complete, and have approved, a Standard Urban Stormwater Management Plan, prior to occupancy of residential or commercial structures.

- Ensure adequate capacity of the surrounding stormwater system to support stormwater runoff from new or rehabilitated structures or buildings.

- Prior to construction within the vicinity of a watercourse, the project sponsor can and should obtain all required permit approvals and certifications for construction within the vicinity of a watercourse:

  – U.S. Army Corps of Engineers (Corps): Section 404. Permit approval from the Corps should be obtained for the placement of dredge or fill material in Waters of the U.S., if any, within the interior of the project site, pursuant to Section 404 of the federal Clean Water Act.

  – Regional Walter Quality Control Board (RWQCB): Section 401 Water Quality Certification. Certification that the project will not violate state water quality standards is required before the Corps can issue a 404 permit, above.

  – California Department of Fish and Wildlife (CDFW): Section 1602 Lake and Streambed Alteration Agreement. Work that will alter the bed or bank of a stream requires authorization from CDFW.

- Where feasible, restore or expand riparian areas such that there is no net loss of impervious surface as a result of the project.

- New facilities should install structural water quality control features such as drainage channels, detention basins, oil and grease traps, filter systems, and vegetated buffers to prevent pollution of adjacent water resources by polluted runoff where required by applicable urban storm water runoff discharge permits.

- Structural storm water runoff treatment should be provided according to the applicable urban storm water runoff permit where facilities will be operated by a permitted municipality or county. Where Caltrans is the operator, the statewide permit applies.

- Comply with applicable municipal separate storm sewer system discharge permits as well as Caltrans' storm water discharge permit including long-term sediment control and drainage of roadway runoff.

- Incorporate as appropriate treatment and control features such as detention basins, infiltration strips, and porous paving, other features to control surface runoff and facilitate groundwater recharge into the design of new transportation projects early on in the process to ensure that adequate acreage and elevation contours are provided during the right-of-way acquisition process.

- Design projects to maintain volume of runoff, where any downstream receiving water body has not been designed and maintained to accommodate the increase in flow velocity, rate, and volume without impacting the water's beneficial uses. Pre-project flow velocities, rates, and volumes must not be exceeded. This applies not only to increases in storm water runoff from the project site, but also to hydrologic changes induced by flood plain encroachment. Projects should not cause or contribute to conditions that degrade the physical integrity or ecological function of any downstream receiving waters.

- Provide culverts and facilities that do not increase the flow velocity, rate, or volume and/or acquiring sufficient storm drain easements that accommodate an appropriately vegetated earthen drainage channel.

- Upgrade stormwater drainage facilities to accommodate any increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce flow velocities, including expansion and restoration of wetlands and riparian buffer areas. System designs should be completed to eliminate increases in peak flow rates from current levels.

- Encourage Low Impact Development (LID) and incorporation of natural spaces that reduce, treat, infiltrate and manage stormwater runoff flows in all new developments, where practical and feasible.

- For sites that are less than one acre, project drawings submitted for a building permit (or other construction-related permit) shall contain a final site plan to be reviewed and approved by the appropriate local agency. The final site plan should incorporate appropriate site design measures to manage stormwater runoff and minimize impacts to water quality after the construction of the project.

MM W-2: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to ensure that projects requiring continual dewatering facilities implement monitoring systems and long-

term administrative procedures to prevent degrading of surface water and minimize, to the greatest extent possible, adverse impacts on groundwater for the life of the project. Construction designs should comply with appropriate building codes and standard practices including the Uniform Building Code.

MM W-3: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to maximize, where practical and feasible, permeable surface area in existing urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. New impervious surfaces should be minimized to the greatest extent possible, including the use of in-lieu fees and off-site mitigation.

Level of Significance After Mitigation

Increased development and transportation projects would increase pollutant runoff but projects would be required to comply with requirements to comply with NPDES requirements and prepare and implement Stormwater Pollution Prevention Plans (SWPPPs). However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, even with implementation of **Mitigation Measure MM W-1**, impacts could remain significant and unavoidable at the regional and TPA levels.

Impact W-2 **Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?**

Regional Impacts

Under natural conditions, vegetation intercepts and retains rainfall before infiltration or runoff occurs, resulting in natural groundwater recharge. With a roadway or other hard surface, infiltration is impeded. Roadways greatly impede groundwater recharge as the natural areas are replaced with hard surfaces. The volume of storm water washed off one (1) acre of roadway is about 16 times greater than that of a comparably sized meadow.[32] As such, an increase in roadways would be expected to interfere with groundwater recharge at the regional level.

The proposed 2026 RTP would directly result in 925 new lane miles through 2049. **Table 4.13-7** shows Plan Lane Miles. This would include new roadway projects and the widening of existing projects**. Chapter 3.0,**

32 Scheuler, T. R. (1994). The Importance of Imperviousness. *Watershed Protection Techniques 1(3)*: 100-111.

Project Description, lists the roadway improvement projects which include construction of new lanes and/or expansion of existing lanes in each city and unincorporated areas of the County. These additions would include new facilities and additional right-of way on existing facilities. Thus, where these projects involve the installation of additional impervious surfaces, impacts to groundwater infiltration would be significant.

Table 4.10-7
Plan Lane Miles

Lane Types	Miles
Interstate	0
Other Freeway or Expressway	18
Other Principal Arterial	115
Other Arterial, Collector, Misc.	792
Total Plan Lane Miles	925

Source: Kern COG, 2026

The increase in impervious surfaces due to the additional miles of roadway, in addition to urban development associated with the anticipated development patterns for 2049, would increase runoff and potentially affect groundwater recharge rates. Thus, impacts to groundwater recharge related to land use and transportation changes resulting from implementation of the proposed 2026 RTP are considered potentially significant for **Impact W-2.** Mitigation is required. **Mitigation Measures MM W-2** through **MM W-5** below would mitigate these impacts.

Transit Priority Area

The County's TPAs are located in areas that are already developed with urban uses. Several transportation and land use projects will be constructed in and around the County's TPAs; however, most of the TPAs land is paved and/or covered with impervious surfaces. Because the County's TPAs already have a significant amount of transportation infrastructure and paved areas, implementation of the proposed 2026 RTP would not substantially reduce groundwater infiltration in the area.

Therefore, the impacts on ground water infiltration near TPAs related to the land use changes and transportation improvements from implementation of the proposed 2026 RTP are considered less than significant for **Impact W-2**. No mitigation is required.

Level of Significance Before Mitigation

Potentially significant at the regional level; less than significant at the TPA level.

Mitigation Measures

MM W-4: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to avoid development in groundwater recharge areas. Where feasible, transportation facilities should not be sited in groundwater recharge areas, to prevent conversion of those areas to impervious surface.

MM W-5: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to reduce hardscape to the extent feasible to facilitate groundwater recharge as appropriate.

Level of Significance After Mitigation

Mitigation Measures **MM W-2** through **MM W-5** would reduce impervious surfaces which may impact groundwater infiltration. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional level, even with implementation of the measures above, impacts are considered significant and unavoidable. TPA impacts would however, be less than significant. The characteristics of any individual project and/or resource will affect the level of significance after mitigation, as well as the feasibility of mitigation that must be assessed on a project-by-project basis based on project specific details.

Impact W-3 **Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:**

i) Result in substantial erosion or siltation on-or-off site;

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or offsite;

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

iv) Impede or redirect flood flows.

Regional Impacts

The proposed 2026 RTP would include the construction of additional 61,100 housing units by 2049 and substantial additional transportation infrastructure.

While the majority of growth will take place outside of flood zones, some new housing could occur within flood zones. The areas designated as Zone A in **Figure 4.13-2, FEMA Flood Zones in Kern County,** are located within the FEMA-designated 100-year floodplain. At the regional scale, the proposed 2026 RTP would increase the amount of housing in flood hazard areas, but state regulations, in combination with local ordinances and federal regulations, as well as ongoing improvements to flood protection infrastructure, would likely mitigate the risk associated with housing in these areas. Further, individual project sponsors are required by state and federal regulations to obtain necessary approvals for construction within designated floodplains.

Some of the transportation projects included in the proposed 2026 RTP could occur within the 100-year flood hazard area, increasing the potential to obstruct or exacerbate floodwaters. Construction of projects involving support structures in the floodway could obstruct floodwaters at some locations. Placement of structures within a floodplain can displace floodwaters and alter the base flood elevations in the surrounding areas. Structures can form a backwater effect, resulting in an increase in the flood elevation level upstream and in neighboring areas. Likewise, floodwater can cause scour effects, resulting in erosion and sedimentation problems downstream from structures.

Drainage areas could be altered by highway corridors, in which floodwaters could be detained by medians and along the roadside. Proposed bridge supports could block debris in waterways, creating obstructions and further elevating upstream flood levels. The Plan could alter existing drainage patterns or substantially increase the rate or amount of surface runoff in a manner that would result in flooding or produce or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems.

Storm water runoff is influenced by rainfall intensity, ground surface permeability, watershed size and shape, and physical barriers. The introduction of impermeable surfaces greatly reduces natural infiltration, allowing for a greater volume of runoff. In addition, paved surfaces and drainage conduits can accelerate the velocity of runoff, concentrating peak flows in downstream areas faster than under natural conditions. Significant increases to runoff and peak flow can overwhelm drainage systems and alter flood elevations in downstream locations. Increased runoff velocity can promote scouring of existing drainage facilities, reducing system reliability, and safety.

The 2026 RTP would result in increased impervious surfaces through transportation projects and development. Additional impervious surfaces increases storm water runoff volumes and peak flow rates. This increase has the potential to create or contribute runoff flows that would exceed the capacity of existing or planned storm water drainage systems. In addition, placing new structures within an existing floodplain can impede flood waters, altering the flood risks both upstream and downstream.

Natural desert conditions promote runoff that can cause flash flooding. In those areas of Kern where soils have naturally low permeability and are subject to quick saturation, high rain volumes remain on the surface as runoff. When impervious surfaces such as highways are placed within these areas of an existing flood plain the public is exposed to the hazards of flash flooding. As discussed above, **Figure 4.13-2**, **FEMA Flood Zones in Kern County,** identifies federally designated flood hazard zones in the Kern County.

The highway and arterial projects proposed in the 2026 RTP generally include widening existing highways, constructing new interchanges, new highway segments, new rail lines, and high speed rail. **Table 4.10-7** summarizes additional lane miles proposed with the 2026 RTP. In addition, proposed transit projects would involve construction of new rail lines, new stations, and upgrades to existing stations.

Placing new structures within an existing floodplain can impede flood waters, altering the flood risks both upstream and downstream. The flooding risks associated with projects located in flood zones can be modified with appropriate design and alignment considerations. The amount of new development under the 2026 RTP (consuming previously vacant land) is projected to be 15,168 acres. The additional urbanized acreage expected by 2049 could increase stormwater runoff.

Therefore, the impacts associated with land use changes and transportation projects from the implementation of the proposed RTP at the regional level are considered potentially significant for **Impact W-3**. Mitigation is required. **Mitigation Measure MM W-6** and **MM W-7** below would mitigate these impacts.

Transit Priority Areas

The County's TPAs, located in the Metro-Bakersfield area, are outside of the 100-year flood hazard area. All land use and transportation changes included in the proposed RTP that will occur in the County's TPAs, will not impact the County's 100-year flood areas. Therefore, the impacts on flood hazard areas associated with land use and transportation changes related to implementation of the proposed RTP near the County's TPAs are considered less than significant for **Impact W-3.** No mitigation is required.

Level of Significance Before Mitigation

Potentially significant at the regional levels; less than significant at the TPA level.

Mitigation Measures

MM W-6: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to conduct or require project-specific hydrology studies for projects proposed to be constructed within floodplains to demonstrate compliance with applicable federal, state, and local agency flood-control regulations. These studies should identify project design features or mitigation measures that reduce impacts to either floodplains or flood flows such that the project is consistent with federal, state, and local regulations and laws related to development in the floodplain.

MM W-7: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to, the extent feasible and appropriate, to prevent development in flood hazard areas that do not have appropriate protection.

Level of Significance After Mitigation

Mitigation Measures **MM W-6** and **MM W-7** would reduce impacts to flood zone areas. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional level, even with implementation of the measures above, impacts are considered significant and unavoidable. TPA impacts would be less than significant. The characteristics of any individual project and/or resource will affect the level of significance after mitigation, as well as the feasibility of mitigation that must be assessed on a project-by-project basis based on project specific details.

Impact W-4 **Result in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.**

Regional Impacts

Kern County is not located near a large body of water such as a sea or an ocean; therefore, it is not located near a tsunami nor seiche zone and there would be no impacts to the risk release of pollutants due to project inundation. However, as described under **Impact W-3**, due to risks for flooding would be potentially significant at the regional levels and less than significant at the TPA level. As described above, while the majority of growth will take place outside of flood zones, some new housing could occur within flood

zones. The areas designated as Zone A in **Figure 4.10-2, FEMA Flood Zones in Kern County,** are located within the FEMA-designated 100-year floodplain. At the regional scale, the proposed 2026 RTP would increase the amount of housing in flood hazard areas, but state regulations, in combination with local ordinances and federal regulations, as well as ongoing improvements to flood protection infrastructure, would likely mitigate the risk associated with housing in these areas. Further, individual project sponsors are required by state and federal regulations to obtain necessary approvals for construction within designated floodplains. As indicated above, a portion of the transportation projects included in the proposed 2026 RTP could occur within the 100-year flood hazard area, thus increasing the potential to obstruct or exacerbate floodwaters, while the construction of projects involving support structures in the floodway could obstruct floodwaters. The consequence of building within a floodplain can displace floodwaters and alter the base flood elevations in the surrounding areas. This can also lead to a host of issues exacerbating flooding including increasing flood elevation levels, erosion and sedimentation.

As also noted under **Impact W-3**, drainage and storm water runoff could also be in affected by development. The 2026 RTP would result in increased impervious surfaces through transportation projects and development. The Plan could alter existing drainage patterns or substantially increase the rate or amount of surface runoff in a manner that would result in flooding that would exceed the capacity of existing or planned storm water drainage systems.

The introduction of impermeable surfaces greatly reduces natural infiltration, allowing for a greater volume of runoff. Finally, paved surfaces and drainage conduits can accelerate the velocity of runoff, concentrating peak flows in downstream areas faster than under natural conditions. Placing new structures within an existing floodplain can impede flood waters, altering the flood risks both upstream and downstream. The flooding risks associated with projects located in flood zones can be modified with appropriate design and alignment considerations. The amount of new urbanized acreage (consuming previously vacant land) would be on the order of 15,168 acres over the lifetime of the Plan. The additional urbanized acreage expected by 2049 could increase stormwater runoff.

Therefore, the impacts associated with land use changes and transportation projects from the implementation of the proposed RTP at the regional level are considered potentially significant for **Impact W-4**. Mitigation is required. **Mitigation Measure MM W-6** and **MM W-7** below would mitigate these impacts.

Transit Priority Areas

The County's TPAs, located in the Metro-Bakersfield area, are outside of the 100-year flood hazard area. All land use and transportation changes included in the proposed RTP that will occur in the County's TPAs,

will not impact the County's 100-year flood areas. Therefore, the impacts on flood hazard areas associated with land use and transportation changes related to implementation of the proposed RTP near the County's TPAs are considered less than significant for **Impact W-4.** No mitigation is required.

Level of Significance Before Mitigation

Potentially significant at the regional levels; less than significant at the TPA level.

Mitigation Measures

See **MM W-6** and **MM W-7.**

Level of Significance After Mitigation

Mitigation Measures **MM W-6** and **MM W-7** would reduce impacts to flood zone areas. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional level, even with implementation of the measures above, impacts are considered significant and unavoidable. TPA impacts would be less than significant. The characteristics of any individual project and/or resource will affect the level of significance after mitigation, as well as the feasibility of mitigation that must be assessed on a project-by-project basis based on project specific details.

Impact W-5 **Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.**

Regional and Transit Priority Area Impacts

As discussed in **Section 4.10.1**, Kern County is governed by the Central Valley RWQCB. In general, the RWQCB uses its planning, permitting, and enforcement authority to meet this responsibility and adopts a Water Quality Control Plan (basin plan) to implement plans, policies, and provisions for water quality management. In accordance with state policy for water quality control, the RWQCB employs a range of beneficial use definitions for surface waters, groundwater basins, marshes, and mudflats that serve as the basis for establishing water quality objectives and discharge conditions and prohibitions. The basin plan identifies existing and potential beneficial uses supported by the key surface water drainages throughout its jurisdiction. The basin plan also includes water quality objectives that are protective of the identified beneficial uses; the beneficial uses and water quality objectives collectively make up the water quality standards for a given region and basin plan. As discussed under **Impact W-2**, implementation of the 2022 RTP would increase impervious surfaces due to additional lane miles and conversion of green fields to developed land. An increase in impervious surfaces would increase water runoff and potentially affect groundwater recharge rates and water quality in the basins. Therefore, the Plan may conflict with or

obstruct the implementation of a water quality control plan or sustainable groundwater management plan. Mitigation measures are required. **Mitigation Measures MM W-1** and **MM W-3** above would mitigate these impacts.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

See **MM W-1** and **MM W-3.**

Level of Significance after Mitigation

As discussed above, regulations and policies would reduce impacts but given the regional scale of the analysis in this EIR, it is not possible to determine if all impacts would be fully mitigated by existing regulations and policies. Therefore, this EIR identifies project-level mitigation measures consistent with applicable regulations and policies designed to reduce impacts. Lead Agencies may choose to include project-level mitigation measures in environmental documents as they determine to be appropriate and feasible. However, because of the regional nature of the analysis and the lack of project specific-detail, including project components and locations, this EIR finds impacts related to potential conflicts with water quality control plans and groundwater management plans could be significant and unavoidable even with implementation of mitigation.

Impact W-6 **Have sufficient water supplies available to serve the project and reasonably for seeable future development during normal dry and multiple dry years.**

Regional and Transit Priority Area Impacts

This impact concerns potential impacts to water demand as a result of the proposed 2026 RTP. Water agencies that either provide over 3,000 acre-feet of water annually or serve more than 3,000 or more connections are required to submit Urban Water Management Plans (UWMPs) to the California Department of Water Resources every five years. Urban water management plans include an estimation of water usage across all sources (commercial, residential, agricultural etc.). Most urban water management plans do not plan for water demand to 2049, therefore, estimates of supply and demand in this EIR are considered approximate.

Bakersfield and Kern County residents get their water from a variety of sources. In the City of Bakersfield water system, there are 50 active groundwater wells and six booster stations that pump water for residents.

The city owns the water distribution system, but Cal Water Service Co. (Cal Water) operates it under contract with the city. The city also owns and operates the river channel throughout the city as well as 2,800 acres of recharge ponds along the Kern River. This City of Bakersfield water system provides water supplies to approximately 35 percent of Bakersfield. The remaining 65 percent of residents are supplied by other retail water companies, including Cal Water, East Niles Community Services District and Vaughn Mutual Water Company. Other agencies serving the unincorporated Bakersfield area include North of the River Municipal Water District and Oildale Mutual Water Company. These purveyors, and the city, purchase imported water (from state and federal water sources, mainly in the Sacramento-San Joaquin Delta area), through the Kern County Water Agency's (KCWA) Improvement District No. 4 (ID 4).[33]

Cal Water is the largest municipal water supplier in the Bakersfield area with a combination of groundwater (65 percent), Kern River water (18 percent) and purchased water from KCWA (about 17 percent.)

Vaughn Mutual Water Company provides water to the northwest portion of Bakersfield and receives supplies strictly from groundwater pumping. Several agriculture water districts have a contract with the City of Bakersfield for about 70,000 acre-feet of Kern River water. These contracts expire in 2011. The water provided to these ag districts is transported through a series of canals throughout Bakersfield. ID 4 is a wholesale water district formed to obtain and administer water from the State of California for State Water Project (SWP)supplies. ID 4 water sources include the SWP, Kern River, Central Valley Project and groundwater banking projects.[34]

As discussed in the Environmental Setting above, the largest water usage in Kern County is for agricultural resources. However, as also discussed above, due to critically dry hydrologic conditions, the Bureau of Reclamation updated the water supply allocations for CVP municipal and industrial water service contractors. As of March 2026, Reclamation increased south-of-Delta M&I allocations to approximately 70 percent of historic use as conditions improved. [35]

Agricultural demand was estimated from the total irrigated acreage of 803,889 acres and an average consumptive water use of 2.49 acre-foot per acre and is shown in **Table 4.13-4**. Although historically the trend of agricultural water use has been decreasing, for purposes of the 2026 RTP analysis, future

---

33 Water Association of Kern County, *Urban Water Use*. Available online at: https://www.wakc.com/water-overview/water-usage/urban-water-use/, accessed on April 21, 2026.

34 Ibid.

35 Bureau of Reclamation, *Reclamation increases Central Valley Project 2026 water supply allocations,* March 24, 2026. Available at: https://www.usbr.gov/newsroom/news-release/5305 , accessed April 17, 2026

agricultural water demands are assumed to stay the same at 2,669,713 afy. Other factors such as crop type, climate, and availability of water are also expected to impact demand from the agricultural sector.

The projected population in Kern County is anticipated to increase by approximately 106,900 people by 2049. As shown in **Table 4.10-8**, **Residential Existing and Future Water Use,** water consumption is estimated to be approximately 89,365 million gallons per year.[36] As discussed above, water service providers have not identified water supplies through 2049 in their plans.

Table 4.10-8
Estimated Residential Existing and Future Water Use (Million Gallons per Year)

Building Type/Use	Existing	No Project	Plan
Multi-Family (High)	7,577	8,412	9,154
Townhome (Med)	5,818	8,080	8,825
Typical Single Family (Low + Very Low)	61,031	73,912	71,386
Total (million gallons per year)	**74,426**	**90,405**	**89,365**

Note: water use is calculated based on the number of single family, townhomes and multi-family residential units
Source: Kern COG 2026

Other sources of water demand include industrial uses, oil and gas facilities (and renewable energy facilities). It is not reasonably feasible to estimate water usage associated with each of these sectors as sufficient data is not available to make such an estimation. While there could be an increase among these sectors, due to various state and federal programs, increasing awareness of drought conditions, and water restrictions, it is assumed that each of these areas would become more efficient in water usage.

Reduction in water supply, as well as uncertainty in the reliability of that supply, could result from increased temperatures due to global climate change, as well as regulatory or legislative decisions that affect the availability of imported water. Thus, many agencies are implementing aggressive water conservation, recycling and planning strategies (water transfer and water banking) to reduce demand and even out supply in wet and dry years.

Meeting future water demand is ultimately the responsibility of local and regional water agencies. Water supplies are either produced locally from groundwater and surface water sources or are imported via the California Aqueduct and the Friant-Kern Canal. Other means of providing water without increasing imported supplies include reclamation and recycling (including meeting the SWQCB recycled water goals),

36 Kern COG, 2026.

conservation, water transfers, groundwater banking, developing brackish groundwater, and ocean desalination.

Each water district develops its own policy for determining its planning horizon and for acquiring and building water facilities. Further, water districts provide water for the growth planned and authorized by the appropriate land use authority. If water agencies can supply the water necessary to meet future demand and/or minimize that demand, impacts would be less than significant. However, given the challenges to imported water supplies and reducing groundwater depletion, and the uncertainly of water supplies in general, meeting future demand is expected to be difficult. New water supply entitlements and facilities may be needed to meet future demands. These new entitlements and facilities could result in significant new impacts as a result of construction and operation. Therefore, water demand impacts related to land use and transportation changes from implementation of the proposed RTP are considered potentially significant for **Impact W-4.** Mitigation is required. **Mitigation Measures MM W-8** through **MM W-18** below will mitigate these impacts.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

MM W-8: Kern COG will facilitate minimizing future impacts to water supply through cooperation, information sharing, and program development as part of the Kern COG's ongoing regional planning efforts, in-coordination with regional water agencies, and other stakeholders.

MM W-9: Kern COG, in coordination with regional water agencies and other stakeholders, shall encourage regional coordination throughout California to develop and support sustainable policies in accommodating growth.

MM W-10: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage regional water agencies to consider, to the extent feasible, potential climate change hydrology and attendant impacts on available water supplies and reliability in the process of creating or modifying systems to manage water resources for both year-round use and ecosystem health. As the methodology and base data for such decisions is still developing, agencies should use the best currently available science in decision-making.

MM W-11: Kern COG, through its Environmental Review Program / Intergovernmental Review process will facilitate and encourage implementing and local agencies to reduce exterior uses of water in public areas and promote reductions in private homes and businesses by shifting to drought-tolerant native landscape plantings, using weather-based irrigation systems, educating other public agencies about water use, and installing related water pricing incentives. Kern COG will also encourage local jurisdictions to work with local water retailers to promote the availability of drought resistant landscaping options and provide information on where these can be purchased. Use of reclaimed water especially in median landscaping and hillside landscaping should be implemented where feasible.

MM W-12: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to coordinate with the local water provider to ensure that existing and/or planned water supply and water conveyance facilities are capable of meeting water demand/pressure requirements. In accordance with state law, a Water Supply Assessment should be required for projects that meet the size requirements specified in the regulations. In coordination with the local water provider, each project sponsor should identify specific on- and off-site improvements needed to ensure that impacts related to water supply and conveyance demand/pressure requirements are addressed prior to issuance of a certificate of occupancy. Water supply and conveyance demand/pressure clearance from the local water provider will be required at the time that a water connection permit application is submitted.

MM W- 13: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to implement water conservation measures in new development that should include but not be limited to the following:

- High efficiency toilets
- Restroom faucets with automatic shut-off
- High efficiency clothes washers
- High efficiency dishwashers
- Use of reclaimed water for appropriate uses
- Water saving irrigation measures including weather-based irrigation controller with rain shut-off.

MM W-14: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to consult with the local water provider to identify feasible and reasonable measures to reduce water consumption, including, but not limited to, systems to use reclaimed water for landscaping, drip irrigation, re-circulating hot water systems, water conserving landscape techniques (such as mulching, installation of drip irrigation systems, landscape design to group plants of similar water demand, soil moisture sensors, automatic irrigation systems, clustered landscaped areas to maximize the efficiency of the irrigation system), water conserving kitchen and bathroom fixtures and appliances, thermostatically controlled mixing valves for baths and showers, and insulated hot water lines.

MM W-15: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to comply with local drought measures as appropriate including prohibiting hose watering of driveways and associated walkways; requiring decorative fountains to use recycled water and repairing water leaks in a timely manner.

MM W-16: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to adopt and implement a comprehensive strategy to increase water conservation and the use of recycled water that includes similar measures to the following:

- **Water Consumption Reduction Target:** Regional water agencies should work together to set a target for to reduce per capita water consumption by 2020.
- **Water Conservation Plan:** Regional water agencies should establish a water conservation plan that may include such policies and actions as:
  - Tiered rate structures for water use;
  - Restrictions on time of use for landscape watering, and other demand management strategies;
  - Performance standards for irrigation equipment and water fixtures;
  - Requirements that increased demand from new construction are offset with reductions so that there is no net increase in water use.

- **Recycled Water Use:** Local jurisdictions and regional water agencies should establish programs and policies to increase the use of recycled water, including:
  - Create an inventory of non-potable water uses within the jurisdiction that could be served with recycled water;
  - Produce and promote the use of recycled water for agricultural, industrial, and irrigation purposes, including grey water systems for residential irrigation;
  - Produce and promote the use of treated, recycled water for potable uses where greenhouse gas emissions from producing such water are lower than from other potable sources.
- **Water Conservation Outreach:** Local jurisdictions and regional water agencies should implement a public education and outreach campaign to promote water conservation, and highlights specific water-wasting activities to discourage, such as the watering of non-vegetated surfaces and using water to clean sidewalks and driveways.

MM W-17: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to establish building design guidelines and criteria to promote water-efficient building design, including minimizing the amount of non-roof impervious surfaces around the building(s) and menus and check-lists for developers and contractors to ensure water-efficient infrastructure and technology are used in new construction, including low-flow toilets and shower heads, moisture-sensing irrigation, and other such advances.

MM W-18: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to establish criteria and standards to permit the safe and effective use of gray water (on-site water recycling), and review and appropriately revise, without compromising health and safety, other building code requirements that might prevent the use of such systems.

MM W-19: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to establish best practices for encouraging efficient use of water.

Level of Significance After Mitigation

Mitigation Measures **MM W-8** through **MM W-19** would reduce future water demands. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts are considered significant and unavoidable. The characteristics of any individual project and/or resource will affect the level of significance after mitigation, as well as the feasibility of mitigation that must be assessed on a project-by-project basis based on project-specific details.

4.10.4 CUMULATIVE IMPACTS

Cumulatively, the Plan would impact water quality, groundwater recharge, flood hazards, and water supply. To reduce land consumption, the Plan includes land use measures that encourage development targeted in TPAs. The land use strategies included in the Plan would result in a more compact development pattern that would be more water efficient. The water providers within the County that serve the population would need to coordinate water supply with nearby jurisdictions. Given the unreliability of the water supply in the region, the result of 106,900 additional people would have a significant impact on the water supply, which would add to the impacts of development in surrounding jurisdictions.

Additional impacts described above include water quality effects. The Plan could also facilitate access to other areas of the state by increasing infrastructure, which could ultimately induce growth (and associated impermeable surfaces) in areas outside Kern County. This could result in greater impacts on water quality and could affect water in areas outside Kern County. As discussed above, implementation of the 2026 RTP /SCS would have significant impacts related to water quality, hydrology, and water supply. The 2026 RTP's significant impacts would add to similar impacts from RTPs in adjacent jurisdictions.

4.11 LAND USE & PLANNING

This section addresses the current land uses in Kern County and evaluates the potential impacts of the 2026 RTP on existing land use and plans, identifies regional-scale mitigation measures, and evaluates the residual impacts.

4.11.1 ENVIRONMENTAL SETTING

4.11.1.1 Regional Setting

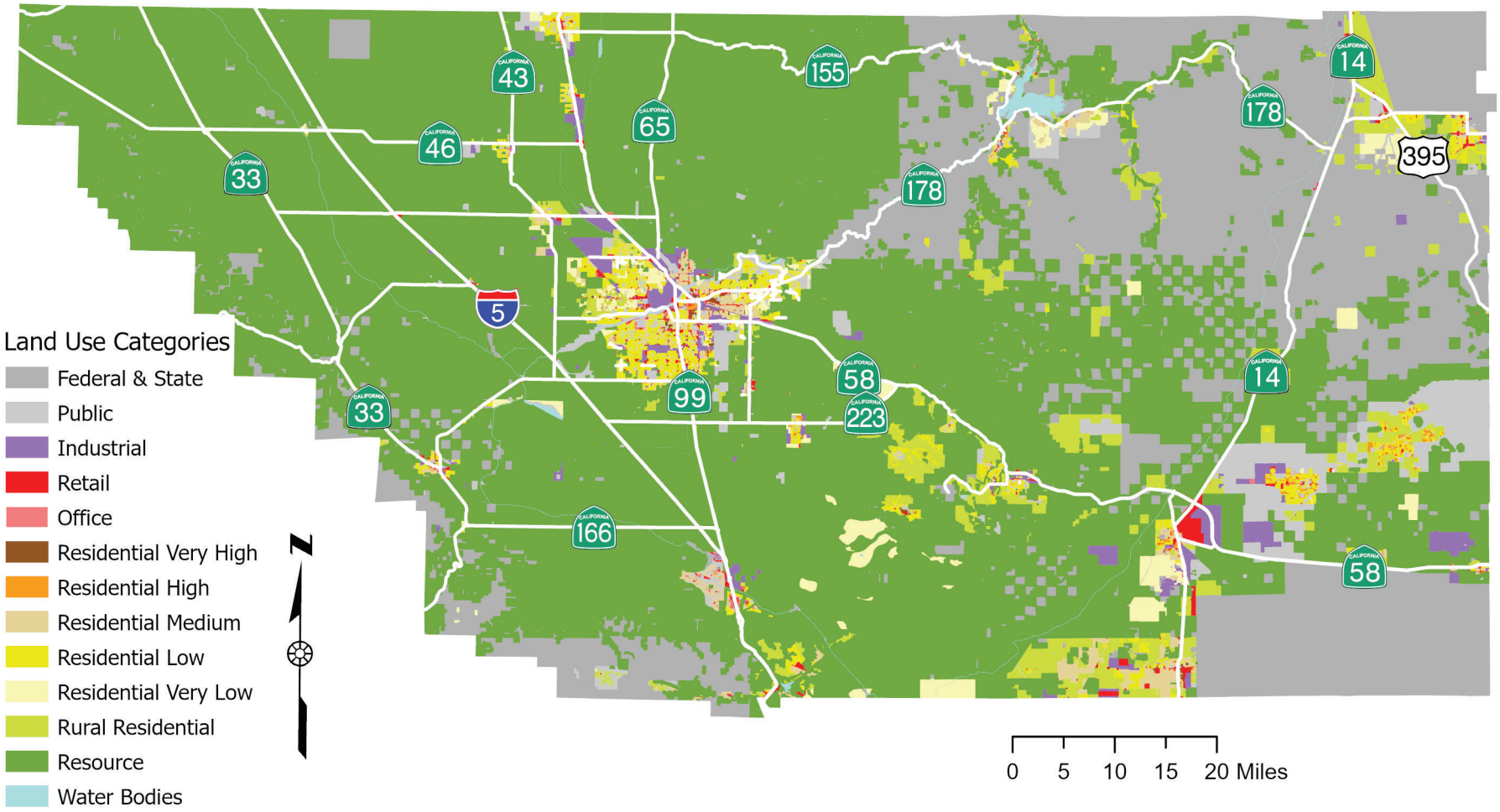
Kern County comprises 11 cities and unincorporated areas that total approximately 8,163 square miles. The County includes portions of the Sierra Nevada and Tehachapi Mountains, covering both the south end of the San Joaquin Valley and a portion of the High Desert Region on the east side of the Sierras. It extends north of Los Angeles County and Ventura County, east of San Luis Obispo County, west of San Bernardino County, and south of the counties of Tulare, Inyo, and Kings. Significant variations in terrain, climate, geography, and environment are evident and unique in Kern County and can be divided into three distinct regions: valley, mountain, and desert (see further discussion below). The area's density is low compared to the state average, with approximately 114 persons per square mile, compared to California as a whole, with 253.7 persons per square mile.[1] The County is comprised predominantly of natural resource land, open space, and productive farmland, however land uses including residential, commercial/office, industrial, and institutional are found in the County. **Figure 4.11-1, Kern County Land Uses,** shows the existing General Plan land use designations, and **Table 4.11-1, Kern County Land Uses,** summarizes the approximate percentages of each existing land use type. Each land use type is discussed in further detail below.

4.11.1.2 Kern County Regions

Kern Valley Region

The Kern Valley Region, also known as the southern San Joaquin Valley area, includes the majority of the urbanized areas in the County, including Metropolitan Bakersfield. This area also includes unincorporated County areas that contain a mix of urbanized and agricultural use.

1 U.S. Census, State and County Quickfacts. 2025. Available online at: https://www.census.gov/quickfacts/fact/table/kerncountycalifornia/PST045225 , accessed April 30, 2026.



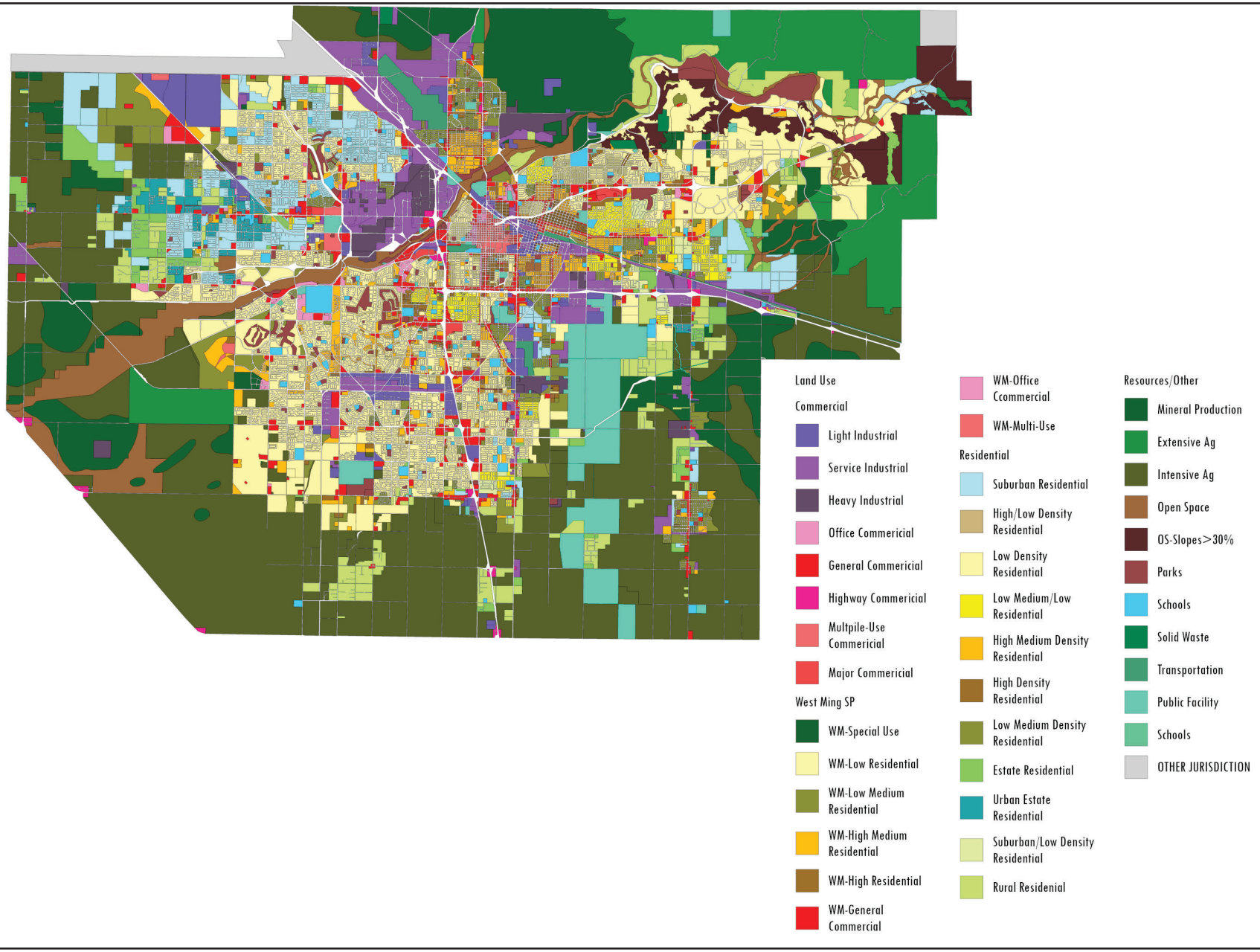
SOURCE: Kern COG, 2026

FIGURE **4.11-1**

IMPACT SCIENCES

Kern County Land Uses

1170.004•04/26



SOURCE: Kern COG, 2026

FIGURE **4.11-1b**

IMPACT SCIENCES

Bakersfield Land Uses

1170.004•04/26

Table 4.11-1
Kern County Land Uses

Land Use	Existing (acres)
Federal and State	1,404,253
Industrial	72,707
Office	3,642
Public	170,526
Residential High	35,953
Residential Low	100,942
Residential Medium	48,384
Rural Residential	194,080
Residential Very High	4,071
Residential Very Low	77,883
Retail	35,953
Resource	3,104,722

Source:
Kern COG 2026 and Local General Plans

Mountain Region

The Mountain Region corresponds to the western-most and central portion of the County. This region is comprised of mountain ranges, including the Tehachapi Mountains, Greenhorn Mountains, and Piute Mountains.

High Desert Region

The High Desert Region is located in the eastern section of the County. The Indian Wells Valley, with an elevation of 2,600 feet, is located in the High Desert Region.

4.11.1.3 Existing Land Use

Residential

The residential pattern of Kern County, including the incorporated cities and unincorporated areas, is largely defined by scattered urban density residential development. The population of Kern County is

expected to grow by 106,900 people over the lifetime of the Plan. As shown in **Table 4.11-1**, above, approximately 461,313 acres of land in Kern County are dedicated to residential uses. Although two-thirds of Kern's population lives within one-twentieth of the area of the County, known as Metropolitan Bakersfield, many of the economic centers require long exurban commutes to oil fields and agricultural areas that are not conducive to urban development.

Agricultural Resource Areas (Farmland)

Farmland, as defined by Government Code Section 65080.01(b), is classified as prime, of statewide importance, or otherwise unique in character outside all existing city spheres of influence or city limits. Important farmland in Kern County in 2022 totals 856,329 acres, a net reduction in acreage of 110,822 from 2004-2022, which is an average loss of 6,157 acres annually. During the same time period grazing land has increased by 75,279 acres, an average of 4,182 acres per year. Kern has more than 1.85 million acres of designated grazing land. From these lands, Kern County's agricultural revenues topped $7.7 billion in 2024.[2] See **Section 4.2, Agricultural Resources**, for additional discussion on agricultural lands in Kern County.

Transportation Infrastructure

Highways

Kern County serves as a major transportation corridor. Passenger vehicles, motor homes, and trucks cross Kern County en route to out-of-county and interstate destinations. In addition, rail traffic and pipelines have major routes through Kern County. Interstate 5 is the major north-south freeway through California, Oregon, and Washington. Interstate 5 and Highway 99 connect Kern County to northern and Southern California. The County also serves east-west through traffic on State Route 58 and State Route 46. The Kern County General Plan states that the County has about 6,300 miles of highway, road, and urban streets. Caltrans maintains one-third of the highways. Kern County maintains 56 percent of all road facilities. Eleven percent of all facilities are incorporated into city streets.[3] Due to its location, agricultural production, and increasing attractiveness as a goods movement hub, much of the traffic on Kern County highways is truck traffic.

---

2 Kern County, *Annual Crop Report 2024.* Available online at: http://www.kernag.com/dept/news/2025/2024_Kern_County_Crop_Report.pdf, accessed on March 27, 2026.

3 Kern County General Plan 2040, Circulation Element. Available online at: https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGPChp2Circulation.pdf, accessed on April 30, 2026.

Rail

Two major rail companies, Union Pacific (UP) and Burlington Northern Santa Fe (BNSF), currently serve Kern County. UP operates trains running through the San Joaquin Valley multiple times a day, carrying food, chemical products, general freight, grain, and lumber. The San Joaquin Valley Railroad operates a regional freight service between Tulare, Fresno, and Kern counties on leased UP and BNSF branch lines connecting outlying areas to mainline carriers.

Transit

Within Kern County, existing public transportation services include public transit, Amtrak, and other private carriers such as Greyhound. Local and regional public transit is available within and between 16 Kern County communities. From 2019 to 2024, public transit services in Kern County saw a 47 percent decrease in passengers from 7.9 million to 4 million. Since the initial decline in riders due to COVID in 2020, Kern has slowly increased 3% to 4 million passengers.[4] Transit services include intercity, intracity, demand-responsive, and fixed-route operations.

Oil, Gas, and Mineral Resources

Perhaps one of Kern County's most well-known features is oil and gas production. Kern is the "Energy Capital of California" with 75 percent of the State's oil production and 60 percent of its renewable energy. Jobs in oil and gas extraction in Kern County account for approximately percent of total employment.[5] **Figure 4.11-2, Oil and Gas Resources,** provides the location of oil and gas facilities in the County.

Following the global trend, oil and gas production in Kern County continues to decrease as the market moves away from traditional energy sources. Kern County still produced an estimated 6,976,109 barrels in 2024, representing more than 90 percent of statewide production.[6] Due to the high number of jobs in the mining and extraction industry, heavy commute traffic is experienced both within and adjacent to rural areas and between urban and rural areas. This commute traffic is the primary consideration in assessing traffic associated with this use, as, unlike agricultural products, petroleum products are transported primarily by rail and pipeline.

---

4 Kern COG, RTP, *Chapter 5-Strategic Investment*, 2026.

5 California State University Bakersfield, *Fueling Kern County*, 2026. available at: https://www.csub.edu/ceer/_files/CEERFuelingKernCountyReport.pdf , accessed April 30, 2026.

6 U.S. Department of the Interior (DOI). Oil Production in California-Kern County. 2024. Available online at: https://revenuedata.onrr.gov/explore/?dataType=Production&period=Calendar+Year&mapLevel=State&offshoreRegions=false&location=NF%2CNA%2CCA%2C06029&year=2024, accessed March 30, 2026.

Various pipelines carry natural gas, crude oil, and other petroleum products throughout Kern County. Storage, pumping, and branch lines are used to distribute those products. Southern California Edison (SCE) and Pacific Gas and Electric Company (PG&E) are responsible for the maintenance and operation of natural gas lines, while major petroleum corporations are responsible for crude oil pipelines throughout the region. State and federal agencies regulate the use of pipelines.

Kern lies at the crossroads of several pipeline systems connecting the West Coast and the nation. This pipeline network provides opportunities for expansion and creation of new terminal facilities. Kern is host to both natural gas and propane intermodal terminals. There are currently no crude or gasoline pipeline networks connecting Kern to the Midwest. Over the past several years, Kern has experienced an increase in shipments of crude oil by rail from the Midwest to local refineries. Kern's extensive pipeline network may provide a way to transload these shipments to the major refineries in the Bay Area and Southern California.

East Kern also includes gold and other mining operations. U.S. Borax operates California's largest open-pit mine in Boron, California, with one of the richest borate deposits in the world. The mining pit is located at the eastern edge of the County next to Boron, operating 24 hours a day, seven days per week.[7]

Alternative Energy

Kern's energy resources extend beyond the traditional—it also produces more renewable energy than any other county in the state. Situated to the east of the mountain city of Tehachapi, the Tehachapi Pass Wind Farm is a pioneering effort at wind power generation beginning in the 1980s. Thanks to intensive maintenance, research, and development, several generations of turbines coexist and continue to provide power as long as the wind blows. There are more than 5,000 wind turbines in the Tehachapi-Mojave wind corridor, producing 1.3 terawatt hours (1.3 million megawatts) each year.[8] **Figure 4.11-3, Kern County Wind and Solar Farms** (see also **Figure 4.6-1** in **Section 4.6, Energy**), provides the location of wind farms in the County.

More recently, Kern County has become a center for solar power with a number of solar projects planned and approved in the desert and valley, totaling nearly 3,424 megawatts of power as of March 2017.[9] Kern

---

7 Bakersfield.com, *Destination: Boron ... History, science, a deep pit, big sky and great burger*, January 29, 2022. Available online at https://www.bakersfield.com/bakersfield-life/destination-boron-history-science-a-deep-pit-big-sky-and-great-burger/article_52aec5d2-719d-11ec-b207-97cd38c33bba.html, accessed on March 30, 2026.

8 Cleanview, "Solar Projects in California." Available online at: https://cleanview.co/planned-solar-projects/california, accessed March 30, 2026.

9 Desert Renewable Energy Conservation Plan. 2022. *Kern County Renewable Energy Fact Sheet.* https://www.energy.ca.gov/programs-and-topics/programs/desert-renewable-energy-conservation-plan, accessed March 30, 2026.

planned solar projects include the Boson solar project (1,173 MW) and the Buttonbush Solar Hybrid Energy Center (818 MW).[10] **Figure 4.11-3** also provides the location of solar projects in the County.

Military/Civilian Aerospace Testing Complex

In Kern's eastern half, the mountainous shadow of the southern San Joaquin Valley harbors the desert communities of California City, Ridgecrest, Inyokern, Mojave, Rosamond, and Boron.

Kern County's eastern region includes two United States' Military Air bases: Edwards Air Force Base and Naval Air Weapons Center China Lake. The aerospace industry and its service and support-related personnel represent a significant interest to Kern's eastern regional communities, as well as its southern neighbors. As these areas continue to grow eastern Kern will require its own rural and urban policy considerations.

Correctional Facilities

Kern County has five public and private high-security institutions that house 10,000 federal, state and local inmates. To manage these facilities, Kern County has almost 3,000 correctional officers and first-line supervisors who commute by auto and vanpool for each shift.[11]

Recreation/Tourism

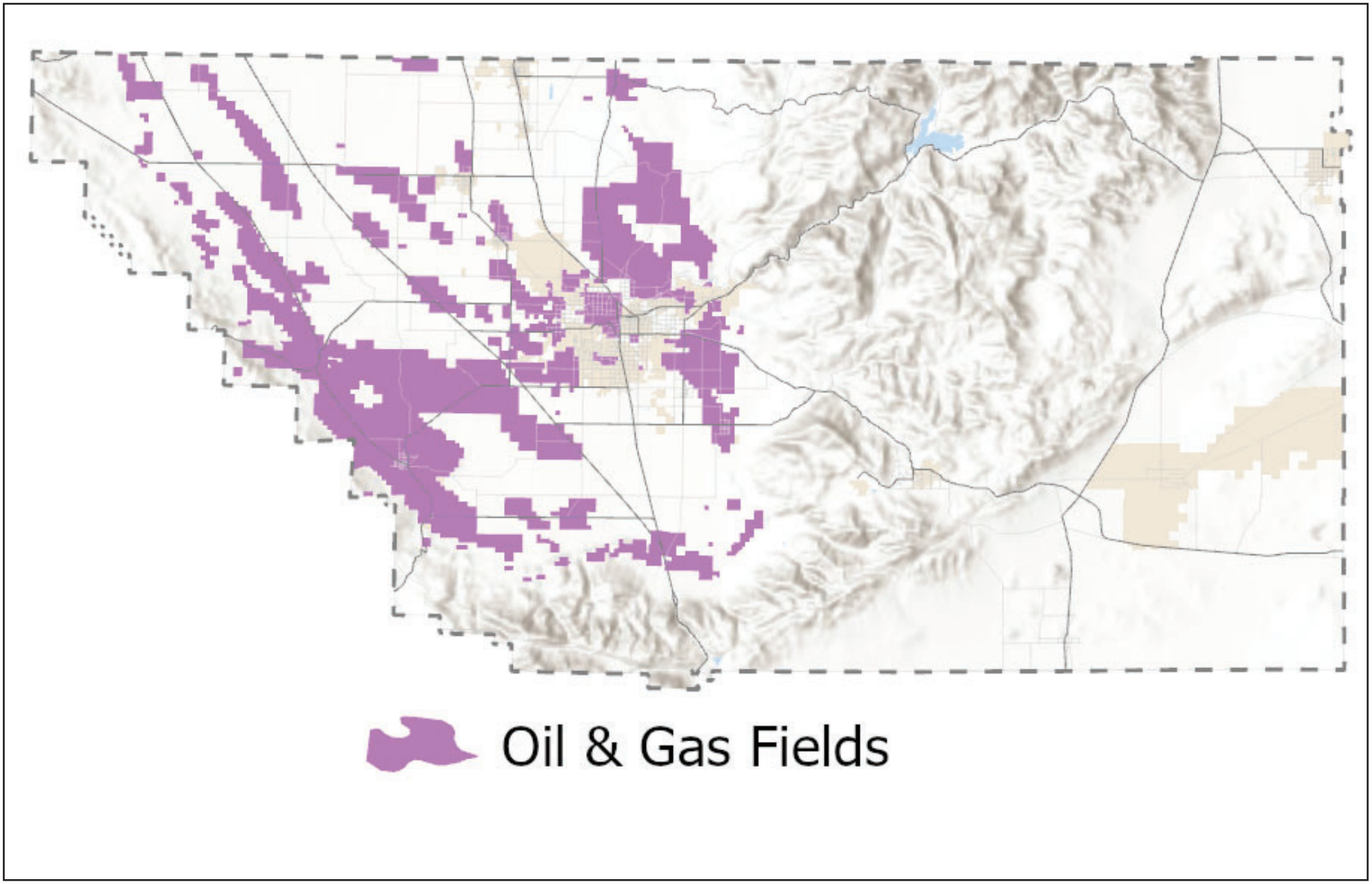
Kern County's diverse mix of mountains, lakes, valleys and deserts make it a significant destination for tourism. ern County's tourism, recreation & entertainment cluster provides almost 23,000 jobs throughout the county primarily in accommodation and food services. The desert areas attracts off road vehicle enthusiasts and hikers. The Kern River Valley/Lake Isabella area is driven by tourism. Alta Sierra, Tehachapi and Frazier Park communities benefit from winter tourism activity. Kern County has numerous lakes that provide boating and fishing opportunities.[12]

---

10 Cleanview, "Solar Projects in California." Available online at: https://cleanview.co/planned-solar-projects/california, accessed March 30, 2026.

11 Kern COG, RTP, *Chapter 4- Sustainable Communities Strategy*, 2026.

12 Kern COG, RTP, *Chapter 4- Sustainable Communities Strategy*, 2026.

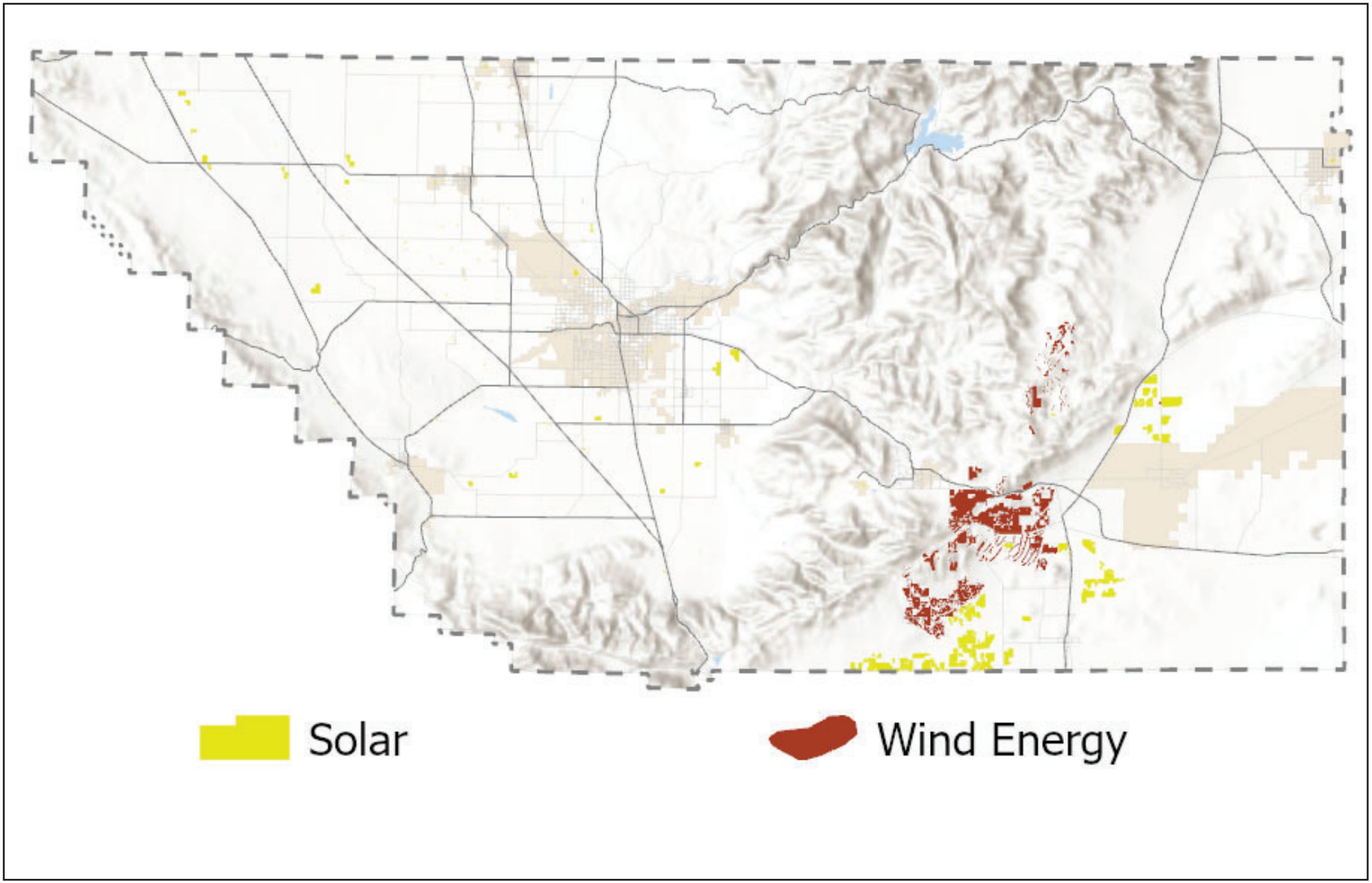


SOURCE: Kern COG, 2026

FIGURE **4.11-2**

IMPACT SCIENCES

Oil and Gas Resources in Kern County



SOURCE: Kern COG, 2026

FIGURE **4.11-3**

IMPACT SCIENCES

Kern County Wind and Solar Farms

1170.004•04/26

4.11.2 REGULATORY FRAMEWORK

4.11.2.1 Federal

United States Department of Transportation Act, Section 4(f) of 1966 (49 U.S.C. § 303)

The Department of Transportation Act was enacted to preserve the natural beauty of the countryside, public parks and recreation lands, wildlife and waterfowl refuges, and historic sites. Section 4(f) requires a comprehensive evaluation of all environmental impacts resulting from federal-aid transportation projects administered by the Federal Highway Administration, Federal Transit Administration, and Federal Aviation Administration that involve the use – or interference with use – of the following types of land.

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

Federal Land Policy and Management Act of 1976, as Amended

The Federal Land Policy and Management Act (FLPMA) (Public Law 94-579) governs how public lands administered by the Bureau of Land Management (BLM) are managed. The BLM manages large rural land areas, including land that is environmentally sensitive. The BLM governs uses that are allowed on land that it manages, striving to balance environmental protection and conservation goals with other uses, such as recreation and grazing.

FLPMA provides guiding principles for BLM land management, including multiple use, sustained yield, and environmental protection. The intent of FLPMA is to ensure that the BLM manages public lands so that they are utilized in the combination that will best meet the present and future needs of the American people for renewable and non-renewable natural resources.

FLPMA addresses topics such as land use planning, land acquisition, fees and payments, administration of federal land, range management, and rights-of-way on federal land. FLPMA has specific objectives and time frames in which to accomplish these objectives, giving it more authority and eliminating the uncertainty surrounding BLM's role in wilderness designation and management.

Endangered Species Act of 1973 (16 USC 1531 et seq.)

The Federal Endangered Species Act (FESA) was established by Congress in order to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved

[and] to provide a program for the conservation of such … species." The U.S. Fish and Wildlife Service (USFWS) administers the Federal Endangered Species Act (FESA), which designates critical habitat for Endangered species. This enables USFWS to carry out its mission to conserve, protect, and enhance the nation's fish and wildlife and their habitats for the continuing benefit of people. Critical habitat areas cannot be disturbed without permission from the USFWS and other federal agencies, depending on land ownership. The USFWS also manages a system of land and waters for the conservation of wildlife and associated ecosystems. These National Wildlife Refuges are primarily managed for the preservation and protection of unique or important resources and ecosystems. Habitat Conservation Plans (HCPs), established under Section 10(a)(1)(B) of the ESA, are planning documents that provide for partnerships with non-federal parties to conserve the ecosystems upon which listed (and candidate) species depend, ultimately contributing to their recovery. The USFWS requires HCPs as part of an application for an incidental take permit. HCPs describe the anticipated effects of the proposed taking, how those impacts will be minimized or mitigated, and how the HCP is to be funded. HCPs may be prepared on a project level when projects will require the acquisition of an Incidental Take Permit. Regional HCPs may also be prepared in an effort to protect threatened and endangered species during the land use planning process.

Federal Highway Administration National Scenic Byways Program

The Federal Highway Administration (FHWA) National Scenic Byways Program, which was established in Title 23, Section 162 of the United States Code under the Intermodal Transportation Efficiency Act of 1991, is a grassroots collaborative effort that designates selected highways as "All American Road" (a roadway that is a destination unto itself), America's Byways or "National Scenic Byway" (a roadway that possesses outstanding qualities that exemplify regional characteristics).

United States Bureau of Land Management (BLM) Scenic Areas and Back Country Byways

BLM designates some of its holdings as Scenic Areas and some roadways in remote areas as Back Country Byways. The BLM Back Country Byways Program was established in 1989 and is a component of the National Scenic Byways Program.

United States Forest Service (USFS) National Scenic Byways Program

The USFS also has a National Scenic Byways Program, independent from the BLM program, which was established in 1995 under the Intermodal Transportation Efficiency Act of 1991 to indicate roadways of scenic importance that pass through national forests.

Federal Farm and Ranchland Protection Program

The Federal Farm and Ranchland Protection Program (FRPP), also referred to as the Farmland Protection Program (FPP), is a voluntary easement purchase program that helps farmers and ranchers keep their land in agriculture. It was consolidated into the new Agricultural Conservation Easement Program (ACEP) as the Agricultural Land Easements (ALE) component. Pursuant to the Farmland Protection Policy Act (FPPA) of 1981 Sections 1539-1549, the Secretary of Agriculture is directed to establish and carry out a program to "minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to the extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland."[13]

The program provides matching funds to state, tribal, or local governments and nongovernmental organizations with existing farmland protection programs to purchase conservation easements or other interests in land. FPP is reauthorized in the Farm Security and Rural Investment Act of 2002 (Farm Bill). The Natural Resources Conservation Service (NRCS) manages the program. Funds are awarded to qualified entities to conduct their farmland protection programs. Although a minimum of 30 years is required for conservation easements, priority is given to applications with perpetual easements.

Department of Housing and Urban Development Act

The Department of Housing and Urban Development Act created the U.S. Department of Housing and Urban Development (HUD) as a Cabinet-level agency. HUD is responsible for national policy and programs that address housing needs in the United States. HUD is responsible for enforcing fair housing laws. HUD plays a major role in supporting homeownership by underwriting homeownership for lower- and moderate-income families through its mortgage insurance programs.

4.11.2.2 State

General Plans and Land Use Regulations

The legal framework in which California cities and counties exercise local planning and land use functions is provided in the California Planning and Zoning Law (California Code section 65000 *et seq*.) Under state planning law, each city and county is required to adopt a general plan "for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning" (California Code section 65300 *et seq*.).

13 7 USC 4201-4209 & 7 USC 658

The general plan expresses the community's development goals and embodies public policy relative to the distribution of future land uses, both public and private. A general plan consists of a number of elements, including land use, circulation, housing, conservation, open space, noise, and safety; other elements may be included at the discretion of the jurisdiction that relate to the physical development of the county or city. The general plan must be comprehensive and internally consistent. Of particular importance is the consistency between the circulation and land use elements; the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other public utilities and facilities must be consistent with the general distribution and intensity of land used for housing, business, industry, open space, education, public areas, waste disposal facilities, agriculture, and other public and private uses.

In addition, every local jurisdiction within the region has land use regulations that implement the general plan. The zoning ordinance is the primary land use regulation used to implement the goals and policies of its general plan. Zoning ordinances, which are required to be consistent with the general plan, provide detailed direction related to development standards; permitted, conditionally permitted, and prohibited uses; and other regulations such as parking standards and sign regulations.

Local jurisdictions may also adopt specific plans, which are used to implement the general plan in particular geographic areas (California Code section 65450). Zoning ordinances and land use approvals must be consistent with applicable specific plans as well as the general plan.

Cities and counties are also required to comply with the Subdivision Map Act (California Code section 66410 *et seq*.). The Subdivision Map Act sets forth the conditions for approval of a subdivision map and requires enactment of subdivision ordinances by which local governments have direct control over the types of subdivision projects to be approved and the physical improvements to be installed.

Natural Community Conservation Planning Act of 1991, as Amended

The Natural Community Conservation Planning Act of 1991, as amended in 2003 (California Fish and Game Code Section 2800-2835), established the Natural Community Conservation Planning program for the protection and perpetuation of the state's biological diversity. The CDFW established the program in order to conserve natural communities at the ecosystem level while accommodating compatible land use. A Natural Community Conservation Plan (NCCP) identifies and provides for the regional or area-wide protection of plants, animals, and their habitats, while allowing compatible and appropriate economic activity. The CDFW provides support, direction, and guidance to participants in order to ensure that NCCPs are consistent with the state ESA.

Senate Bill 375

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional greenhouse gas (GHG) reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in their regional transportation plan. The California Air Resources Board (CARB), in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years, but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding programmed after January 1, 2012.

This law also extends the minimum period for the regional housing needs allocation cycle from five years to eight years for local governments located within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the regional transportation plan (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

Modernization of Transportation Analysis for Transit- Oriented Infill Projects Senate Bill 743 (SB 743)

On September 27, 2013, Governor Brown signed Senate Bill (SB) 743. To further the state's commitment to the goals of SB 375 and AB 32, SB 743 adds Chapter 2.7, Modernization of Transportation Analysis for Transit- Oriented Infill Projects, to Division 13 (Section 21099) of the Public Resources Code. Key provisions of SB 743 include reforming aesthetics and parking CEQA analyses for urban infill projects and eliminating the measurement of auto delay, including Level of Service (LOS), as a metric that can be used for measuring traffic impacts in transit priority areas. SB 743 provides that, "aesthetics and parking impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment." This means that, effective January 1, 2014, aesthetics and parking will no longer be considered in determining if a project has the potential to result in significant environmental effects, provided a project meets all of the following three criteria:

a) The project is in a transit priority area;

b) The project is on an infill site; and

c) The project is residential, mixed-use residential, or an employment center.

Natural Community Conservation Planning Act of 1991, as Amended

The Natural Community Conservation Planning Act of 1991, as amended in 2003 (California Fish and Game Code Section 2800-2835) established the Natural Community Conservation Planning program for the protection and perpetuation of the state's biological diversity. The CDFW established the program in order to conserve natural communities at the ecosystem level while accommodating compatible land use. An NCCP identifies and provides for the regional or area-wide protection of plants, animals, and their habitats, while allowing compatible and appropriate economic activity. The CDFW provides support, direction, and guidance to participants in order to ensure that NCCPs are consistent with the state ESA.

CEQA Streamlining for Infill Projects Senate Bill 226 (SB 226)

The CEQA Streamlining for Infill Projects (SB 226) sets forth a streamlined review process for infill projects and includes performance standards that will be used to determine an infill project's eligibility for streamlined review. The purpose of SB 226 and updated *State CEQA Guidelines* Section 15183.3 is to streamline the environmental review process by "limiting the topics subject to review at the project level where the effects of infill development have been addressed in a planning level decision or by uniformly applicable development policies." Residential, commercial and retail, public office buildings, transit stations, and schools are eligible for this streamlining provided they meet the following requirements: (1) are located in an urban area on a site that has been previously developed or adjoins existing qualified urban uses on at least 75 percent of the site's perimeter; (2) satisfy the performance standards provided in Appendix M [of CEQA]; and, (3) are consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy, with some exceptions.

Under SB 226, some development and transportation projects assumed as a part of the proposed Plan may be eligible to use a streamlined version of the environmental review process.

Regional Housing Needs Allocation (RHNA)

The California Legislature developed the RHNA process (Govt. Code § 65580 et seq.) in 1977 to address the serious affordable housing shortage in California. The California Department of Housing and Community Development (HCD), in consultation with each council of governments, determines each region's existing and projected housing need.[14] HCD must meet and consult with each council of governments, including

14 Govt. Code § 65584(b).

Kern COG, regarding the assumptions and methodology to be used by HCD to determine the region's housing need.[15] HCD's determination of projected need is based on population projections produced by the Department of Finance and regional population forecasts used in preparing regional transportation plans.[16] HCD's determination of existing need is based on a number of factors, including overcrowding and cost burden (see Section 4.14 Population and Housing for further discussion).

In consultation with HCD, each council of governments must develop and adopt a methodology for distributing the existing and projected regional housing needs to cities, counties, and cities and counties within the region.[17] The council of government then adopts a final regional housing need plan that allocates a share of the regional housing need to each city, county, or city and county.[18]

Local government must address its allocated share of housing needs of all economic segments of the community through its housing elements.[19] Local governments must adopt a housing element as part of their general plan. Unlike the rest of the general plan, where updates sometimes occur at intervals of 20 years or longer, under the previous law, the housing element was required to be updated as frequently as needed and no less than every five years. Under SB 375, this period has been lengthened to eight years and timed so that the housing element period begins no less than 18 months after adoption of the regional transportation plan, to encourage closer coordination between housing and transportation planning. SB 375 also changes the implementation schedule required in each housing element. The previous law required the housing element to contain a program that set forth a five-year schedule to implement the goals and objectives of the housing element. The new law instead requires this schedule of actions to occur during the eight-year housing element planning period, and requires each action to have a timetable for implementation.[20]

The purpose of the housing element is to identify the community's housing needs, state the community's goals and objectives with regard to housing production, rehabilitation, and conservation to meet those needs. In addition, the housing element defines the related policies and programs that the community will implement in order to achieve the stated goals and objectives. This would be accomplished through the allocation of regional housing needs consistent with the Plan.[21]

---

15 Govt. Code § 65584.01(b).

16 Govt. Code § 65584.01(a).

17 Govt. Code § 65584.04.

18 Govt. Code § 65584(b).

19 California Legislative Information. Article 10.6. Housing Elements [65580 – 65589.11].

20 California Legislative Information. Senate Bill No. 375.

21 California Legislative Information. Article 10.6. Housing Elements [65580-65589.11], Section 65580.

California Housing Opportunity and More Efficiency (HOME) Act - Senate Bill 9 (SB 9)

Senate Bill 9 (SB 9), which took effect on January 1, 2022, provides a ministerial process, without discretionary review or public hearing, to approve developments of up to two residential units on lots currently zoned for single-family residential. In addition, SB 9 allows parcel maps for Urban Lot Splits, meeting certain criteria. The bill adds two sections to the Government Code, §65852.21 and §66411.7, and amends provisions of the State Subdivision Map Act relating to the expiration of subdivision maps (§66452.6). For the purposes of SB 9, a ministerial project is not subject to a public hearing or CEQA.

4.11.2.3 Local and Regional

Kern Regional Blueprint Program, San Joaquin Valley Regional Blueprint and Directions to 2050

The Kern Regional Blueprint was adopted in 2008, the San Joaquin Valley Blueprint was adopted in 2009, and the Directions to 2050 outreach program was begun in 2012. The Kern Regional Blueprint process (which was further built upon by the Directions to 2050 community outreach process) was designed to help the region plan for future growth and quality of life through the integration of transportation, housing, land use, economic development, and environmental protection. The San Joaquin Valley Regional Blueprint stitched together the Kern Blueprint with the seven other county grassroots blueprint efforts, developed by the seven other regional planning agencies (RPAs).

Elected officials from each city and county provided input as to how their jurisdictions will accommodate the regional vision. The San Joaquin Valley Regional Blueprint includes a visual representation of the goals expressed in general plans and individual regional transportation plans. For further discussion of the Blueprints and Directions to 2050, see **Chapter 3, Project Description**.

Local Agency Formation Commissions

Under state law, each county must have a local agency formation commission (LAFCO). A LAFCO is the agency that carries responsibility for creating orderly local government boundaries, with the goal of encouraging "planned, well-ordered, efficient urban development patterns," the preservation of open space lands, and the discouragement of urban sprawl. A LAFCO typically consists of two county supervisors, two representatives of the county's cities, and one member of the public. Many LAFCOs also include one special district representative. While LAFCOs have no land use power, their actions determine which local government will be responsible for planning new areas.

LAFCOs address a wide range of boundary actions, including the creation of spheres of influence for cities, adjustments to boundaries of special districts, annexations, incorporations, detachments of areas from cities, and dissolutions of cities. The definition of a city's sphere of influence is frequently an indication of the city's ultimate boundaries. Since 1992, state law requires that the incorporation of a new city must not financially harm the county and must result in a positive cash flow for the new city, a requirement that has slowed the rate of new city incorporation.

While planning documents of each of the cities in Kern County are relevant to the RTP, this Program EIR primarily addresses the two largest jurisdictions (Kern County and the City of Bakersfield), as that is where the majority of projects and growth are anticipated to occur. The remaining cities have or are anticipated to have in the near future policies that are similar to the regulations of these two jurisdictions and that implement the requirements of AB 32 and SB 375.

Local Control Mechanisms

General Plans: The most comprehensive land use planning for the County is provided by city and county general plans, which local governments are required by state law to prepare as a guide for future development. The general plan contains goals and policies concerning topics that are mandated by state law and others that the jurisdiction may have chosen to include. Required topics are land use, circulation, housing, conservation, open space, noise, and safety. Local governments frequently choose to address other topics, including public facilities, parks and recreation, community design, and growth management, among others. City and county general plans must be consistent with each other, and County general plans must cover unincorporated areas that often overlap city spheres of influence and general plan areas.

Specific and Master Plans: Specific or Master Plans are sometimes developed by a city or county to address smaller, more specific areas within its jurisdiction. These more localized plans provide focused guidance for developing a specific area and contain development standards tailored to the area, as well as systematic implementation of the general plan.

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

There are 11 cities in the County and all have adopted a local general plan. Each plan includes a land use element to provide focused goals, policies, and maps to guide development within the particular city. In addition, each city maintains its own zoning ordinance. These documents govern land use in the region.

Kern County General Plan

The Kern County General Plan is a coordinated policy document with planned land use maps and related information that are designed to give long-range guidance to those County officials making decisions affecting the growth and resources of the unincorporated Kern County jurisdiction, excluding the metropolitan Bakersfield planning area. The Plan helps to ensure that day-to-day decisions are in conformance with the long-range program designed to protect and further the public interest related to Kern County's growth and development. The General Plan also serves as a guide to the private sector of the economy in relating its development initiatives to the public plans, objectives, and policies of the County.

The Kern County Board of Supervisors first adopted the current General Plan on June 15, 2004, with more recent updates to specific chapters. Its main purpose remains to provide focused goals, policies, and maps to guide development within the unincorporated portions of Kern County.

The Land Use Element of the General Plan is the County's long-term blueprint for development of property to meet the County's future need for new housing, retail, office, industrial, parks, open space, and other uses. The Land Use Element contains a Land Use Map and goals, policies, and programs designed to address the development issues facing the community through a variety of land use planning policies. The element provides for a variety of land uses for future economic growth while also assuring the conservation of Kern County's agricultural, natural, and resource attributes. Specifically, the Land Use Element serves the following purpose:

- Informs the public of the County's land use goals, objectives, and policies for long-term development, and outlines programs designed to implement the stated goals.

- Serves as a guide for the day-to-day operational decisions of staff and decision makers with respect to development matters. It sets forth policies on which to base recommendations and decisions regarding land use issues and provides a basis for informing citizens and developers about the City's and County's policies on growth and development.

- Establishes the land use classifications for property within the planning area and sets standards of density and intensity for each classification, as well as projections of future population growth and its spatial distribution.

- Addresses issues identified in other Area Plan elements that affect land use and development patterns, including circulation systems, infrastructure availability, housing needs, economic development goals, resource conservation, open space preservation, and public safety.

As Kern COG's RTP aims to facilitate revitalized and/or more compact, transit-oriented places, the land use element will serve as one of the primary planning components that implement the RTP policies. The following existing general plan policies are relevant to the proposed project:

- A compact and orderly urban expansion pattern adjacent to established communities will be encouraged in order to avoid uneconomic investment by the public sector for excessive or premature extension of public facilities and services.

- Rural communities are historically identifiable small-scale non-urban settlements located in outlying areas of the County, which contain a mixture of residential and supportive commercial and other uses serving the community and the surrounding rural population. The County will ensure that the unique character of these communities is preserved and enhanced by recognizing the scale, density, size, and composition of development.

- Varied approaches to residential development will be actively encouraged and given favorable consideration, in order to foster a variety of housing types and densities and a more efficient use of the land, while preserving the character of individual communities.

- The County will encourage the creation of residential developments as provided for in the Cluster Combining District of the Zoning Ordinance as a means of preserving open space.

- Owners of individual legal residentially zoned lots of record will, in any event, retain the right to develop a housing unit structure regardless of the General Plan designation, provided County development ordinance criteria are met.

- Limited neighborhood type of commercial uses will be permitted in all residential map code designations provided that the specific commercial use being proposed is determined through site review to be of a neighborhood nature and appropriate and compatible with surrounding uses provided findings of consistency with the policies and provisions of this plan are met.

- Encourage mixed-use developments that allow residential use of the upper levels of multistory commercial buildings.

- The County shall offer density incentives for residential projects that provide desired elements, including infrastructure, affordable housing, day care, and clustered development.

- The extent, type, and location of new residential development designated by the plan will be in accordance with the goals and objectives of the Housing Element.

- Encourage new development to infill existing development areas, such as by-passed parcels.
- Provide for an orderly outward expansion of new urban development so that it maintains continuity of existing development, allows for the incremental expansion of infrastructure and public service, minimizes impacts on natural environmental resources, and provides a high-quality environment for residents and businesses.
- Kern County will promote a pattern of commercial development that contributes to the economic and physical development of existing unincorporated communities as well as to the incorporated cities.
- Future commercial uses will be encouraged where residential development exists or is occurring. Designations will not be made far in advance of actual current demand in isolated, remote, or rural areas.
- The development of specialized clusters of related and mutually supportive commercial activities will be encouraged and supported in appropriate locations by means of the Zoning Ordinance and Specific Plans.
- Regional Commercial may be sited in urban areas with adequate infrastructure and should consist of at least 20 acres.
- Linear commercial development of shallow depth, lacking demonstrated demand, will be discouraged along streets or highways when it can be shown that it impairs the traffic-carrying functions of the highways, it detracts from the aesthetic enjoyment of the surroundings, or if it can be demonstrated that equally effective services can be provided in an alternative configuration.
- The development of Highway Commercial shall demonstrate adequate infrastructure.
- All commercial development equal to or greater than 40 acres in a rural area will require the adoption of a Specific Plan prior to development approval.
- The land areas best suited for industrial activity by virtue of their location and other criteria will be protected from residential and other incompatible development.
- Protect existing industrial designations from incompatible land use intrusion.
- Provide for the clustering of new industrial development adjacent to existing industrial uses and along major transportation corridors.

- Light Industrial may be considered near a residential neighborhood and other sensitive uses, provided there is an adequate means of establishing compatibility.

- Requests for new Service Industrial and Heavy Industrial designations should be discouraged on sites contiguous to or located within 0.25 miles of residentially designated property.

- All industrial development equal to or greater than 40 acres in a rural area will require the adoption of a Specific Plan prior to development approval.

- Where feasible, locate future industrial activities in close proximity to railroad facilities and inter- and intra-state transportation corridors to minimize extensive travel through urban areas and to promote alternative transportation of goods.

- Densities specified in the map provisions are maximums and may be reduced if it is determined that such reduction is warranted by conditions specifically applicable to the site, such as geological and flood hazards, shallow groundwater, steep slopes, significant wildlife habitat, or botanical communities. However, densities may be increased under density bonus and cluster option programs and policies to be developed and adopted during the implementation phase of this General Plan program.

- For policy purposes, the County will be divided into three geographic regions, as discussed in the Introduction chapter: Valley, Mountain, and Desert. Urban densities shall be defined as: greater than or equal to one unit per acre in the valley and desert regions, and less than or equal to 2.5 acres per unit in the mountain region.

- Higher density development and infilling should be encouraged within urbanized and built-up areas of the County.

- The County shall ensure that new industrial uses and activities are sited to avoid or minimize significant hazards to human health and safety in a manner that avoids over-concentrating such uses in proximity to schools and residents.

- Discretionary development projects should be encouraged to incorporate innovative or "smart growth" land use planning techniques as design features, as follows:

  – Higher density development, where compatible, to maximize the efficient use of land.

  – Mixed use developments that promote reduced vehicle trips by having residential, commercial, and public uses proximate to each other.

  - Variety of housing types, including those using energy-efficient design, and densities to address Kern County's housing needs.

  - Master planned communities that feature interconnected roads, transit stops, sidewalks, landscaping, and trails to encourage efficient vehicle and pedestrian movement.

  - Compact development that conserves open space, agricultural land, flood-prone areas, creeks, hillsides, ridge tops, wetlands, and other natural features.

  - Adequate infrastructure (i.e., roads, sewer, water, parks, etc.) is provided as a condition of development approval by the project proponent.

  - Aesthetically pleasing and unifying design features that promote a visually pleasing environment.

- Recognize the importance of major transportation corridors, airports, and rail lines as important economic tools for the establishment of commercial and industrial development and promotion.

Kern County Zoning Ordinance

The Zoning Ordinance serves as the primary implementation tool for the General Plan Land Use Element and the goals, objectives, and policies contained within the element. The Zoning map is consistent with the General Plan's Land Use Map, and the land use designations contained in the Land Use Element, and the areas designated for each category correspond to one or more zoning districts.

Metropolitan Bakersfield General Plan

Jointly adopted by the City of Bakersfield and the County of Kern, policies within the Metropolitan Bakersfield General Plan that are relevant to the 2026 RTP include:

- Provide for land uses, as depicted on the Land Use Plan (the General Plan lists a variety of residential, commercial, industrial, resource, and public facility designations).

- Allow for the development of a variety of residential types and densities.

- Ensure that residential uses are located in proximity to commercial services, employment centers, public services, transportation routes, and recreational and cultural resources.

- Retain existing residential neighborhoods as designated on the Land Use Plan, and allow for the infill of residential land uses which are compatible with the scale and character of the surrounding neighborhood.

- Permit the conversion of existing single-family neighborhoods to higher densities in those areas in which (1) there are physical and economic conditions that warrant the replacement of existing units, (2) the uses are contiguous with other higher-density uses, and (3) adequate infrastructure services are available and/or provided for by developers.

- Accommodate high and high-medium density residential adjacent to existing and planned commercial, multi-family, and principal transportation corridors.

- Encourage that all new high and high-medium density residential designations be on a contiguous area of at least 5 acres.

- Allow for the intensification and development of existing high and high-medium areas, regardless of size.

- Allow for the development of a variety of commercial centers/corridors which are differentiated by their function, intended users, and level of intensity, including convenience centers serving local residential neighborhoods, sub-regional centers which serve groupings of neighborhoods, and major regional centers which serve the planning area and surrounding areas.

- Allow for the development of a variety of commercial uses, including those which serve residents (groceries, clothing, etc.), highway users, and tourists-visitors. Ensure that adequate lands are set aside for neighborhood-serving commercial uses adjacent to designated residential areas. Where land has not been set aside, permit neighborhood-scale commercial uses in residential areas when compatible with surrounding development.

- Require all new commercial designations be assigned to sites where the aggregate of all contiguous parcels designated for commercial use is no less than 5 acres, except for approved specific plans, parcels to be developed for highway-oriented service uses at freeway on- and off-ramps, or where physical conditions are such that commercial is the only logical use of the property.

- Allow for the intensification and development of existing commercial areas in an infill fashion.

- Encourage a separation of at least 0.5 mile between new commercial designations.

- Locate major (regional) commercial uses in proximity to existing regional centers (such as Valley Plaza and East Hills Mall), and in proximity to future regional serving commercial centers in the downtown, southwest, northwest, and northeast, as designated on the Land Use Policy Map.

- Promote the recycling of block-long corridors of commercial uses so as to consolidate new commercial uses.
- Encourage the clustering of commercial development in compact areas, rather than extended along streets and highways.
- Allow for a variety of industrial uses, including land-extensive mineral extraction and processing, heavy manufacturing, light manufacturing, warehousing and distribution, transportation-related, and research and development uses.
- Protect existing industrial designations from incompatible land use intrusions.
- Encourage the efficient use of existing industrial land uses through consolidation of building and storage facilities.
- Provide for the clustering of new industrial development adjacent to existing industrial uses and along major transportation corridors.
- Enhance existing and establish new centers as the principal focus of development and activity in the planning area, around which other land uses are grouped. Centers should be linked by adequate transportation facilities and may be linked to the Kern River, canals, or other resource amenities. Centers may be differentiated by functional activity, density/intensity, and physical character.
- Provide for the enhancement and intensification of existing "centers" such as:
  - Downtown
  - California State University, Bakersfield
  - Bakersfield Airpark/Casa Loma
  - Meadows Field
  - Highway 58 / Weedpatch Highway
  - Lamont
  - Greenfield
  - McAllister Ranch
  - Northwest Bakersfield
  - Rosedale Ranch

- Provide for the intensification of downtown Bakersfield for governmental, financial, professional office, retail, residential, cultural, specialty, and supporting uses.

- Provide for the revitalization of downtown Bakersfield by the use of redevelopment authorities provided by California law, including the provision of incentives for new private development projects, joint private-public partnerships, and public improvements; accommodating the range of land uses defined for this "Center."

- Allow for the development of a center in southwest Bakersfield, which is a focal point of activity and includes a mix of professional office and retail uses, moderate density residential, and filters outward to lower suburban-type densities, according to the following principles:

  – Encourage focus on an open space amenity such as a park or water body;

  – Provide opportunity for the development of residential units above ground floor commercial;

  – Encourage land use linked to the Kern River and promote pedestrian activity within the center.

- Allow for the development of centers in northwest Bakersfield to serve the Rosedale Community and adjacent rural areas, containing retail commercial, light industrial, moderate and high-density residential, and is surrounded by low and estate residential densities, according to the following principles:

  – Attempt to focus on open space amenities;

  – Promote pedestrian activity and, where feasible, attempt to link land uses with the Kern River.

- Allow for the development of a low-density "village-like" center in the Northeast as a focal point of activity which includes retail, commercial, professional offices, moderate and high-density residential, and filtering outwards to lower densities, according to the following principles:

  – Attempt to focus on open space amenities;

  – Cluster development to take advantage of views;

  – Encourage development to preserve public views of foothill topography and sensitive habitats;

  – Provide the opportunity for the development of residential units above ground floor commercial;

  – Promote pedestrian activity and use of greenbelt links between land uses.

- Enhance pedestrian activity in principal activity centers of the planning area.

- Encourage development of pedestrian sensitive uses and design characteristics in the following areas:
  - Downtown
  - Baker Street
  - Southwest Center
  - Northwest Centers
  - Northeast Center
- Provide for a mix of land uses that meet the diverse needs of residents; offer a variety of employment opportunities; capitalize, enhance, and expand upon existing physical and economic assets; and allow for the capture of regional growth.
- Accommodate new projects that are infill or expansion of existing urban development.
- Provide for an orderly outward expansion of new "urban" development (any commercial, industrial, and residential development having a density greater than one unit per acre) so that it maintains continuity of existing development, allows for the incremental expansion of infrastructure and public services, minimizes impacts on natural environmental resources, and provides a high-quality environment for living and business.
- Allow for flexibility in the specific siting of multi-family residential and commercial uses from the locations generally depicted on the Land Use Map in areas which are undeveloped, used for resource production, or are developed at very low densities through Planned Unit Development, Planned Commercial Developments, and Specific Plans, provided that:
  - The overall density and distribution of land uses is maintained;
  - Multi-family and commercial uses are located in proximity to principal roadways, public transit, employment nodes, commercial services, and recreational uses and within 330 feet of the location depicted on the Land Use Policy Map;
  - Uses are sited to take advantage of pedestrian greenbelts, recreational amenities, and natural environmental resources;
  - The availability of infrastructure to the site or adjacent service areas is not adversely impacted.
- Encourage infill of vacant parcels.

- Encourage mixed-use development in the downtown area.
- Develop a plan to ensure that all parking lots are 40 percent shaded at maturity to help alleviate "heat island effect."
- Encourage the use of reflective roofing material and other measures that reduce the "heat island effect."
- Consider including within Bakersfield's Sphere of Influence those parcels of land adjacent to the City limits whose development could have significant impacts on the City and to which public facilities and services can be provided by the City.
- Future development that involves infill of the urban area as opposed to development on the urban fringes shall be encouraged.

4.11.3 ENVIRONMENTAL IMPACTS

4.11.3.1 Thresholds of Significance

For the purposes of this EIR, Kern COG has determined that adoption and/or implementation of the proposed 2026 RTP would result in significant impacts to the land use, if any of the following would occur:

- Physically divide an established community.
- Conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

4.11.3.2 Methodology

Determination of Significance

The methodology for determining the significance of land use impacts compares the existing conditions to future (2049) conditions, as required in CEQA Section 15126.2(a).

The 2026 RTP consists of a combination of transportation policies, objectives, investments, and, in accordance with the requirements of SB 375, an SCS, see **Chapter 3.0, Project Description**, of this PEIR for the Plan's goals, policies, transportation investments, and SCS. In addition, project growth forecasts were developed for the Plan as well as a range of alternatives (see **Chapter 5.0, Alternatives**). For each alternative, differing sets of policies, objectives, and investments were applied. Alternative growth forecasts vary in their reliance on local input trend data and existing General Plans. The growth forecast for the No Project Alternative relies exclusively on trend data adjusted to reflect 2026 RTP growth totals.

The No Project Alternative indicates the land use pattern that could be expected without implementation of the 2026 RTP. The 2049 population, households, and employment growth projections for the Plan and No Project Alternative (and other alternatives) are held constant at the regional level but differ from one another in land use patterns. Changes in investments and policies would shift the land use patterns as a function of changes in mobility and land use decisions.

One of the most important goals of the 2026 RTP is to achieve SB 375 targets as established by the California Air Resources Board (CARB). Kern COG has made certain land use assumptions based on the policies and projects contained within the 2026 RTP and market demand (within existing zoning) in order to model anticipated development in the year 2049. However, it will be up to individual jurisdictions to determine consistency of individual projects with the 2026 RTP (including the SB 375 goals). It is not the intent of the 2026 RTP or associated modeling effort to impose land use requirements on local jurisdictions.

SB 375 specifically provides that nothing in an SCS supersedes the land use authority of cities and counties, and that cities and counties are not required to change their land use policies and regulations, including their general plans, to be consistent with the SCS (Government Code Section 65080(b)(2)(K)). Moreover, cities and counties have plenary authority to regulate land use through their police powers granted by the California Constitution, art. XI, § 7, and under several statutes, including the local planning law (Government Code Sections 65100–65763), the zoning law (Government Code Sections 65800–65912), and the Subdivision Map Act (Government Code Sections 66410–66499.37). As such, Kern COG has no concurrent authority/jurisdiction to regulate or implement land uses or implement mitigation related to land use plans and projects. With respect to the transportation projects in the 2026 RTP, while Kern COG prioritizes and facilitates these projects (and therefore has the ability to influence project selection), projects are implemented by Caltrans, local transit agencies, and local governments (i.e., cities and the County), and not Kern COG. Kern COG has limited authority/jurisdiction to require these implementing agencies to implement project-specific mitigation measures.

The development types used in the SCS for purposes of modeling anticipated outcomes do not represent detailed, parcel-level land use designations such as those found within a local jurisdiction's General Plan, but rather represent the aggregation of multiple land uses, densities, and intensities that are expected to average out within a neighborhood-sized area by 2049. Each development type is comprised of various characteristics related to employment and housing density, urban design, mix of land uses, and transportation options. Details describing the characteristics contained within each development type are available in the Kern SB 375 Modeling Methodology. The lead agency for each development project, not Kern COG, will be responsible for making the determination of consistency with the 2026 RTP and, for CEQA streamlining purposes, pursuant to the provisions of SB 375, for any given proposed project. See Government Code Section 65080(b)(2).

The potential for community disruption was assessed by evaluating the location of proposed transportation projects in relation to surrounding land uses and community development. Highway and transit extensions and major interchange projects were assumed to have a higher potential to disrupt or divide existing communities since they would involve the creation of new roadways. Highway widening and other projects along established transportation rights-of-way were assumed to have a lower potential to divide or disrupt existing communities and neighborhoods.

The following analysis is based on general descriptions of projects in the Plan and location transportation planning areas (TPAs) (see **Section 3.0, Project Description**) and is regional and programmatic in nature. This section is intended to serve as a regional cumulative analysis for local jurisdictions in the preparation of project-specific environmental documentation and to provide a framework for mitigation measures.

Implementation of the 2026 RTP would affect land use patterns. Expected significant impacts include substantial land use density growth in areas of the region adjacent to transit, right-of-way acquisitions that could separate residences from community facilities and services, and impacts to vacant natural lands, including agricultural and forested lands.

Both short-term construction-related impacts as well as off-site impacts from new facilities would occur as a result of the implementation of the 2026 RTP. Indirect impacts from changes in land use patterns expected to occur due to the 2026 RTP transportation investments and land use policies are also identified.

Approach to Mitigation

As discussed in **Chapter 1.0, Introduction** and above**,** Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-

specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

4.11.3.3 Impacts and Mitigation Measures

Each applicable threshold of significance is listed below, followed by analysis of the significance of any potential impacts and the identification of mitigation measures that would lessen or avoid potential impacts. Finally, the significance of potential impacts after implementation of all identified mitigation measures is presented.

Impact LU-1 Physically divide an established community.

Regional and Transit Priority Area Impacts

The 2026 RTP includes completion of major highway projects, reductions in travel delay by adding lanes to highways and arterials, and creation of complete streets such that vehicles and non-motorized transit can both use the streets simultaneously. Construction and implementation of new transportation facilities or expansion of existing facilities could disrupt or divide established communities. Short-term construction impacts, as well as completion and operation of some transportation projects, would include physical barriers that limit access to a community or restrict movement within a community.

Additional short-term construction-related impacts could result from disturbances due to construction equipment; these impacts are discussed under other impact categories (e.g., noise, aesthetics, and air quality). Long-term impacts could result from the completion of new or expanded roadways or transit facilities in existing communities. For example, the widening of a roadway could be perceived as too great a distance to cross by a pedestrian, thereby dividing a community. An elevated grade crossing may create a physical barrier in some locations. Impacts would most likely occur in urbanized or urbanizing parts of the region. New transit facilities are often planned in areas that have existing communities and generally create a community benefit by connecting communities and providing a new mode of travel or relieving overcrowding on an existing mode of travel. However, new transit tracks and expanded transit facilities, such as for high-speed rail, have the potential to disrupt or divide established communities. In addition, they can create local congestion around parking facilities.

New roadways and/or the addition of new lanes to existing freeways and roadways have the potential to divide communities. Roadways, as well as overcrossings and undercrossings associated with new or widened roadways or freeways, can create a real or perceived barrier to pedestrians, bicyclists, and motorists. New freeway or roadway segments that occur in rural areas would have the least potential to divide established communities. Rural areas do not typically have the same degree of established

communities as urban areas; however, the potential for impacts still exists. As such, mitigation is required. **Mitigation Measure MM LU-1** below and **MM POP-1** would mitigate these impacts.

Level of Significance Before Mitigation

Significant at the regional and TPA levels.

Mitigation Measures

MM LU-1: Kern COG shall continue to coordinate with local County Transportation Commissions, Caltrans, and other local jurisdictions when siting new facilities in residential areas to facilitate minimizing future impacts on established communities through cooperation, information sharing, and regional program development as part of Kern COG's ongoing regional planning efforts to promote best planning practices.

See also **MM POP-1**.

Level of Significance After Mitigation

Mitigation Measures **MM LU-1** and **MM POP-1** would help to prevent the division of communities. Because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts are considered significant and unavoidable.

Impact LU-2 **Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.**

Regional and Transit Priority Area Impacts

Kern COG has developed a land use distribution pattern to address actions and strategies included in the SCS portion of the 2026 RTP. The SCS demonstrates Kern County's ability to attain and exceed the GHG emission reduction targets set forth by the ARB (see **Section 4.6, GHG**). The SCS outlines a plan for integrating the transportation network and related strategies with an overall land use pattern that responds to projected growth, housing needs and changing demographics and transportation demands. The SCS focuses development in TPAs and other opportunity areas resulting in more opportunity for transit-oriented development.

This overall land use pattern supports and compliments the proposed transportation network that emphasizes system preservation, active transportation (such as bike lanes), and transportation demand management measures. In addition, the 2026 RTP includes the following policies/actions related to transit and non-motorized transportation:

- Encourage using appropriate funding sources to promote and fund sustainable community design that supports transit use and increases active transportation (AT) while still meeting the mobility needs of residents and employees in all communities and particularly in disadvantaged communities.
- Identify, explore and assist jurisdictions to apply for funding alternatives to traditional transit that address Kern Transit's (KT) rural mobility needs.
- Create strategies to increase the visibility and importance of transit in Kern County.
- Support and enhance transit priority and strategic employment place types. These areas have a strong impact on transportation patterns as the major destinations. They are generally characterized by their regionally important commercial, employment, and service uses. To make these places more transit-supportive, they should be enhanced by land use decisions that locate new housing and appropriately scaled retail and employment uses to diversify the mix, creating an environment that maximizes transportation choice
- Promote more compact and mixed-use centers along major transit corridors where appropriate to support more intense transit options such as Bus Rapid Transit and light rail as areas urbanize.
- Promote land use patterns that support current and future investments in public transit and active transportation in all communities particularly in disadvantaged communities that score high in many state and federal grant programs.

The 2026 RTP contains transportation projects and strategies to help more efficiently distribute population, households, and employment growth. Many of the land use strategies that support transportation strategies were developed as a result of Kern's Blueprint and Directions to 2050 processes outlined in the SCS. These processes involved extensive outreach to and input from local jurisdictions.

The 2026 RTP was built primarily from local General Plans and input from local governments, and local transportation agencies. As a result of this comprehensive and integrated approach, the transportation projects and land use strategies included in the 2026 RTP are generally consistent with the County and local level general plan data available to Kern COG. However, general plans are updated on an inconsistent basis. Some of the general plans that Kern COG relied on when creating the 2026 RTP may not be current

and may not reflect current planning policy or practice or the latest local planning assumptions. For example, the City of Bakersfield General Plan Update is currently in progress. In addition, the RTP's 2049 horizon year is beyond the timeline of many of the general plans. Input from local governments was used to correct foreseeable consistency issues.

Kern COG used GIS data to analyze where major freeway, rail, and transit projects in the 2026 RTP intersect residential and other areas. For purposes of identifying potential land use incompatibility, a 150-foot potential impact zone was drawn around the freeway, rail, and transit projects in the 2026 RTP to identify the number of acres potentially affected (air quality and noise impacts extend further and are addressed in **Section 4.3, Air Quality**, and **Section 4.10, Noise and Vibration**). See **Table 4.11-2, Affected Land Uses within 150 Feet of Transportation Facilities,** for residential and business land uses within 150 feet of transportation facilities under existing, No Project and Plan Conditions.

The analysis shows that 9,587 acres of residential land uses would be located within the 150-foot radius of transportation facilities in 2049 under the proposed Plan as compared to 4,704 acres under existing conditions, an increase of 4,883 acres.

The increase in developed land uses within 150 feet of transportation facilities results in increased potential for developed uses to be impacted/divided, and possibly displaced. Displacement of residences or businesses can be mitigated with specific relocation measures as dictated by local, state, and federal requirements. Such measures include assistance in finding a new location, assistance with moving, and compensation for losses. Where it has been determined that displacement is necessary and displaced individuals are eligible, a relocation assistance program consistent with the State Uniform Location Assistance and Real Properties Acquisition Policies Act provides compensation and assistance in finding a new residence for displaced individuals.

As discussed above under Methodology, Kern COG has no land use authority to adopt local land use plans or approve local land use projects that will implement the SCS. **Mitigation Measures LU-1** through **LU-3,** and **POP-1** would help to reduce conflicts with land use plans, policies, and regulations; however, impacts would remain potentially significant.

Table 4.11-2
Affected Land Uses within 150 Feet of Transportation Facilities

Land Use	Existing (Acres)	2049 No Project (Acres)	2049 Plan (Acres)
Federal and State	91	882	876
Industrial	2,109	2,559	2,561
Office	416	77	76
Public	1,170	98	56
Residential High	180	279	278
Residential Low	2,198	5,928	5,941
Residential Medium	1,280	706	706
Rural Residential	277	2,474	2,463
Residential Very High	386	56	56
Residential Very Low	383	213	143
Retail	3,458	530	447
Resource	454	2,482	2,610
Mixed Use			

Source: Kern COG 2026

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

MM LU-1, POP-1

MM LU-2: Kern COG shall work with the County and other member agencies on the Regional Planning Advisory Committee to ensure that RTP transportation projects and growth are consistent with the RTP and general plans and associated local government planning assumptions.

MM LU-3: Kern COG shall provide technical assistance and regional leadership to local governments to implement the RTP goals and strategies, integrate growth and land use planning with the existing and planned transportation network, and in determining consistency with the SCS.

MM LU-4: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to reflect RTP

policies and strategies in their general plan updates. Kern COG will work to build consensus on how to address inconsistencies between general plans and RTP policies.

Level of Significance After Mitigation

Mitigation Measures MM LU-1 through **MM LU-3** and **MM POP-1** would help to reduce conflicts with land use plans, policies, and regulations. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts are considered significant and unavoidable.

4.11.4 CUMULATIVE IMPACTS

Implementation of the 2026 RTP would result in an increase in density and land use development over the next 23 years. By 2049, the region is anticipated to add an additional 106,900 people. The improved accessibility from the 2026 RTP could help facilitate urbanization in areas outside the region. Changes in the land use patterns in the region (for example, increased urbanization) could affect areas outside the region, resulting in increased urbanization in other areas as well. Implementation of **Mitigation Measures LU-1** through **LU-3** would reduce project impacts; however, the impacts would remain significant and could contribute to similar impacts in adjacent jurisdictions.

4.12 MINERAL RESOURCES

This section describes mineral resources in the Kern COG region, identifies the regulatory framework with respect to laws and regulations that affect mineral resources, and analyzes the potential impacts of the proposed 2026 RTP. In addition, this PEIR provides regional-scale mitigation measures, as well as project-level mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies to reduce identified impacts as appropriate and feasible.

4.12.1 ENVIRONMENTAL SETTING

A mineral resource is a pure inorganic substance occurring in Earth's crust in such form, quantity, or quality that there are reasonable prospects for economic extraction. The state relies on mineral resources as a continuous supply of construction aggregate materials (sand, gravel, and crushed stone) for urban infrastructure, making these resources essential to the economy of California. Construction minerals, such as aggregate, constitute the state's most important mineral commodity in terms of tonnage, value, and societal infrastructure. California is number one in the United States (U.S.) for the production of sand and gravel, and fourth in the U.S. for total non-fuel mineral production. The most recent data on non-fuel mineral production is from 2022. As of 2022, there were 537 active construction material mines in the state with a total market value of production valuing $1.48 billion.[1] In 2022, 116 mines in California produced 19 different industrial and chemical materials, including limestone and gypsum.[2]

Mineral Resource Zones (MRZs) were initially mapped in 1980 as a result of the Surface Mining and Reclamation Act (SMARA) of 1975. MRZs are designated into four classes that indicate the potential for a specific area to contain significant mineral resources:

- **MRZ-1:** Areas where available geological information indicated there is little or no likelihood for presence of significant mineral resources.
- **MRZ-2:** Areas underlain by mineral deposits where geological data indicate that significant measured or indicated resources are present or where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.
- **MRZ-3:** Areas containing known mineral occurrences of undetermined mineral resources significance.

---

1 California Department of Conservation (DOC), California's Non-Fuel Mineral Production 2022, August 2024. Available online at: https://conservation.ca.gov/cgs/documents/publications/bulletins/B_232-California-Non-fuel-Mineral-Production-2022-a11y.pdf, accessed April 6, 2026.

2 Ibid

- **MRZ-4:** Areas of known mineral occurrences where geological information does not rule out the presence or absence of significant mineral resources.[2]

Within Kern County, there are several MRZ areas that are mapped. The zones that are represented are MRZ-1 and MRZ-2. The mapped locations of MRZ-2 include the Maricopa Flat and the foothills of the San Emigdio and Tehachapi Mountains in the southern portion of the county, in Bakersfield along the Kern River and its tributaries, along Walker Basin Creek, and at the base of Sycamore Canyon.[3]

4.12.1.1 Mineral Resources Project

To organize active and historic mining data as mandated by the SMARA, the California Department of Conservation created the Mineral Resources Project to provide information about California's non-fuel mineral resources. Under the project, the California Geological Survey (CGS) classifies lands that contain regionally significant mineral resources and then develops objective maps and reports to be used by mining companies and consultants, government agencies, and the public to recognize, utilize, and protect California's mineral resources.

The Mineral Resources Project divides non-fuel mineral resources into three categories: metals (including gold, silver, iron, and copper), industrial minerals (like clays, limestone, and gypsum), and construction aggregate (sand, gravel, and crushed stone).[4]

4.12.1.2 Mineral Resources of Regional Significance

County and city general plans are required to identify significant mineral resource areas and apply appropriate land use designations to ensure their future availability. Many city and county general plans in Kern County reference and map local mineral resources. Most of the comprehensive mineral resource mapping in California has been completed for urban areas where there is a high probability that converted land uses would be incompatible with mining.

Mapping shows mineral deposits in Kern are concentrated around the City of Bakersfield and towards the western edge of the County towards San Luis Obispo County.[5] Petroleum is the largest mineral extraction

---

3 California Department of Conservation, Mineral Resource Zones for Kern County. Available online at: https://databasin.org/datasets/26c92d3ecbe541ec81451f9de4e1e0e4/, accessed April 6, 2026.

4 California Department of Conservation (DOC), California's Non-Fuel Mineral Production 2022, August 2024. Available online at: https://conservation.ca.gov/cgs/documents/publications/bulletins/B_232-California-Non-fuel-Mineral-Production-2022-a11y.pdf, accessed April 6, 2026.

5 Mindat.org, *Map Showing Location of Mines and Mineral Deposits, Kern County*. Available online at: https://www.mindat.org/photo-805619.html, accessed on April 6, 2026.

in Kern County, constituting nearly 75 percent of oil production in California.[6] Boron, cement, clay, gold, gypsum, pumice, salt, sand and gravel, silver, and tungsten are other important minerals produced in the County. Among these, gold ranks first in total value of the metallic mineral products, silver ranks second, and tungsten ranks third. Clay, limestone products, boron, sand, and gravel are the most highly valued of non-metallic minerals.[7] In recent years, the County has produced a significant proportion of California's roofing granules. Nearly all of Kern's mineral deposits, exclusive of petroleum fields, are grouped in areas that are referred to as Mining Districts. Kern County contains 16 such districts, as illustrated in **Figure 4.12-1, Mineral Resources in Kern County**.

Construction Aggregate

Construction aggregate refers to sand and gravel (natural aggregates) and crushed stone (rock) that are used as Portland-cement-concrete aggregate, asphaltic-concrete aggregate, road base, railroad ballast, riprap, and fill for the production of other construction materials. California's construction industry is greatly dependent on readily available aggregate deposits that are within a reasonable distance to market regions. Aggregate is a low unit-value, high bulk-weight commodity; therefore, aggregate for construction must be obtained from nearby sources in order to minimize costs to the consumer. If nearby aggregate sources do not exist, then transportation costs can quickly exceed the value of the aggregate.

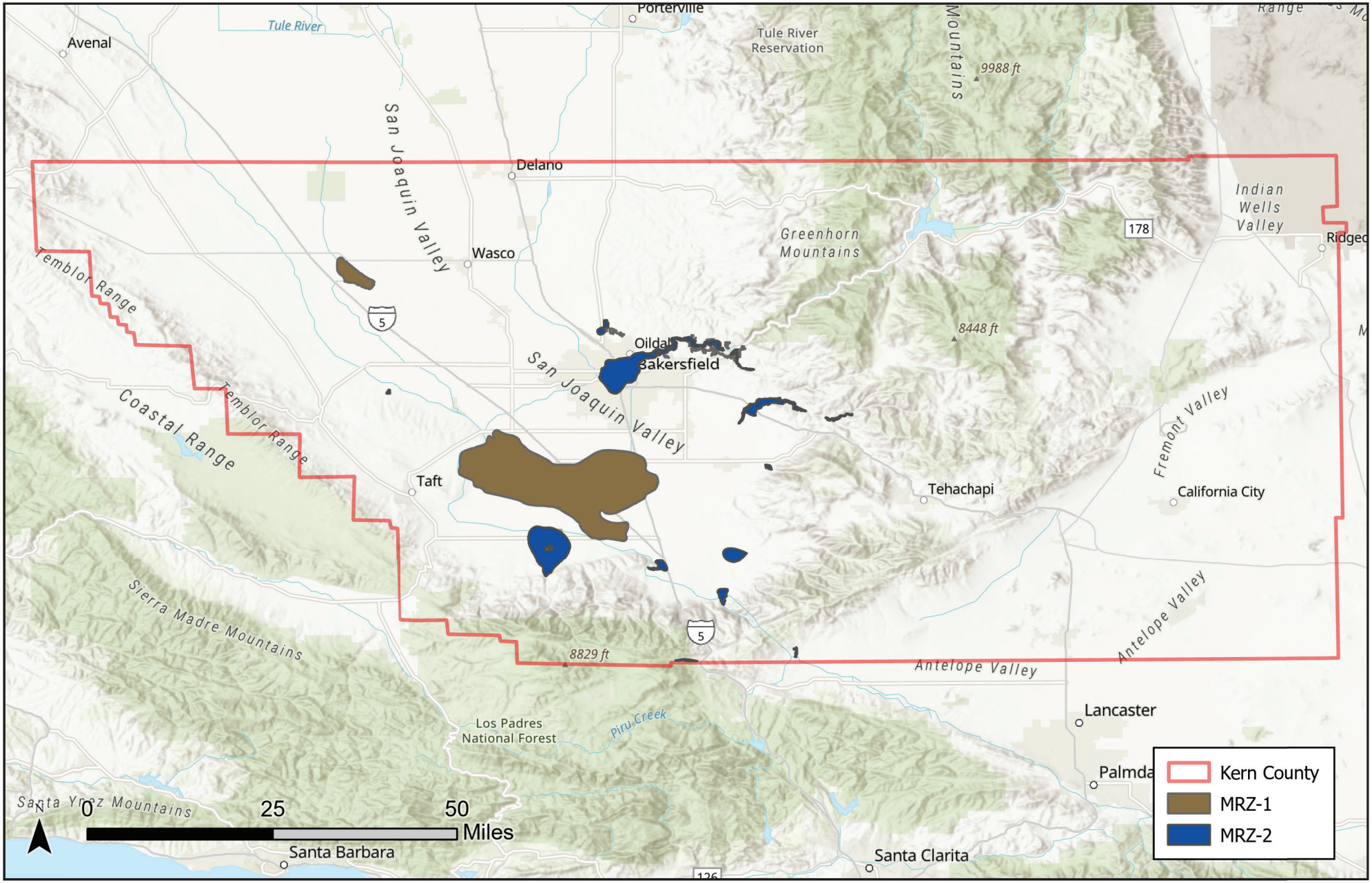
Mineral land classification studies for aggregate use either a Production-Consumption (P-C) region or a County as the study area boundary. A P-C region is one or more aggregate production districts (a group of producing aggregate mines) and the market area they serve. P-C Regions sometimes cross county boundaries. Mineral land classification reports include information from one or more P-C regions or from a county. Kern County is in the Bakersfield P-C region. Mapping information assists planners and decision-makers balance the need for construction aggregate with many other competing land use issues in their jurisdictions. The 50-year demand for aggregate in this region is 338 million tons (compared to 11 billion tons in the entire state). There are approximately 1,690 million tons of permitted reserves in this region (compared to 7 billion tons in the state).[8] Thus, the Bakersfield region has approximately 31 percent of its anticipated 50-year demand under permits. It is estimated that permitted reserves will last more than 50 years.

---

6 Kern Economic Development Corporation, *Strategic Plan 2025-2028.* Available online at https://kernedc.com/wp-content/uploads/2025/08/Strategic-Plan-2025-Final.pdf, accessed April 6, 2026.

7 Kern County, General Plan: Volume 1 – Draft Environmental Impact Report, January 2004. Available online at: https://psbweb.kerncounty.com/planning/pdfs/kcgp/KCGP_RPEIR_vol1.pdf, accessed April 30, 2026.

8 Department of Conservation, California Geological Survey, *Aggregate Sustainability in California*, 2026. Available online at: https://conservation.ca.gov/cgs/Documents/Publications/Map-Sheets/MS_052-Aggregate-Sustainability-2026-Supplement-a11y.pdf, accessed April 6, 2026.



SOURCE: Department of Conservation, 2026; Esri, 2026

FIGURE **4.12-1**

IMPACT SCIENCES

Mineral Resources in Kern County

1170.004•04/26

Non-Permitted Aggregate Resources

Current non-permitted aggregate resources may be future sources of construction aggregate potentially available to meet California's continuing demand. Non-permitted aggregate resources are deposits that may meet specifications for construction aggregate, are recoverable with existing technology, have no land overlying them that is incompatible with mining, and currently are not permitted for mining. These resource areas include areas that are known to contain aggregate resources and have compatible land uses, such as agricultural land, open space lands (not designated as parks), and forest lands. Uses that are considered incompatible with mining include urban areas, county and state parks, national parks, and golf courses. It is unlikely that all of these resources would ever be mined, as many are located in proximity to urban or environmentally sensitive areas or remote from a potential market to be economically viable. Land uses that are considered incompatible with mining include urban areas, county and state parks, national parks, and golf courses.

The estimated amount of non-permitted resources in the region is not easily quantifiable; California's non-permitted aggregate resources have been estimated to be approximately 75 billion tons.[9] While the estimated amount of nonpermitted resources is large, it is unlikely that all of these resources would ever be mined because of social, environmental, or economic factors. For example, aggregate resources located in proximity to urban or environmentally sensitive areas can limit or stop the development of mining operations, and as such, these sites are unlikely to be mined. These resources may also be located remotely from a potential market to be economically viable, due to the cost of transporting such resources. In spite of such possible constraints, current nonpermitted aggregate resources are the most likely future sources of construction aggregate potentially available to meet California's continuing demand.

Oil and Gas Extraction

Oil was first discovered in Kern County in the 1890s. In 2025, Kern County yielded 83 million barrels of crude oil (bbl) and was ranked number fourteen in the top oil-producing counties in the United States;[10] this amount represents 75 percent of California's oil production. As of 2025, Kern County produced 7.4 billion cubic feet (CF) of natural gas, representing 31.5 percent of the state's total natural gas production.[11]

---

9 Department of Conservation, California Geological Survey, *Aggregate Sustainability in California*, 2026. Available online at: https://conservation.ca.gov/cgs/Documents/Publications/Map-Sheets/MS_052-Aggregate-Sustainability-2026-Supplement-a11y.pdf, accessed April 6, 2026.

10 Kern Economic Development Corporation, *Kern County: Energy Capital of the West,* 2025. Available online at: https://kernedc.com/wp-content/uploads/2025/10/Kern-EDC-2025-Energy-Industry-Fact-Sheet.pdf, accessed April 6, 2026.

11 ShaleXP, Oil and Gas Activity in Kern County, CA, November 2025. Available online at: https://www.shalexp.com/california/kern-county, accessed April 30, 2026.

According to the Kern County Planning Department, the county issued 371 drilling permits in 2024.[12]

4.12.2 REGULATORY FRAMEWORK

4.12.2.1 Federal

Indian Mineral Development Act of 1982

The Indian Mineral Development Act of 1982 (25 U.S. Code [USC] 2101–2108) permits Indian tribes, through the Secretary of the Interior, to enter into a Minerals Agreement for the disposition of tribal mineral resources. A Minerals Agreement provides for the exploration for or extraction of oil, gas, uranium, coal, geothermal, or other energy or non-energy mineral resources for tribes that own a beneficial or restricted interest or provide for the sale or production of tribal mineral resources.[13]

4.12.2.2 State

Surface Mining and Reclamation Act (SMARA) of 1975

The SMARA (Public Resources Code [PRC] 2710–2796) requires that the State Department of Mines and Geology Board map areas throughout the state that contain regionally significant mineral resources. Construction aggregate resources (sand and gravel) deposits were the first commodity selected for classification by the Board. Once mapped, the Mines and Geology Board is required to designate for future use those areas that contain aggregate deposits that are of prime importance in meeting the region's future need for construction-quality aggregates. The primary objective of SMARA is for each jurisdiction to develop policies that would conserve important mineral resources, where feasible, that might otherwise be unavailable when needed. SMARA requires that once policies are adopted, local agency land use decisions must be in accordance with its mineral resource management policies. These decisions must also balance the mineral value of the resource to the market region as a whole, not just their importance to the local jurisdiction.[14]

---

12 Kern County Planning and Natural Resources Department. *Kern County Oil and Gas Permitting Program Annual Progress Report,* December 2024. Available online at: https://psbweb.kerncounty.com/planning/pdfs/oil_gas/kern_oil_gas_annual_progress_report_2024.pdf, accessed April 6, 2026.

13 U.S. Congress. *S. 1894 – Indian Mineral Development Act of 1982*. Available online at: https://www.congress.gov/bill/97th-congress/senate-bill/1894, accessed April 6, 2026.

14 California Department of Conservation, *Surface Mining and Reclamation Act of 1975 Statues and Regulations*, July 2018. Available online at: https://www.conservation.ca.gov/smgb/Regulations/Documents/SMARA-statutes-regs-7- 2018.pdf, accessed April 30, 2026.

Government Code Section 65302(d)

Government Code Section 65302(d) states that a conservation element of the general plan shall address minerals and other natural resources.[15]

4.12.2.3 Local

County and City General Plans

For the most part, local planning guidelines have been developed in county and city general plans to identify and encourage the utilization and conservation of mineral and energy resources, encourage sustainable management of resources, prevent or minimize adverse effects to the environment, and protect public health and safety. Pursuant to Government Code Section 65302, a general plan must include "A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources" (emphasis added).[16]

4.12.3 ENVIRONMENTAL IMPACTS

4.12.3.1 Thresholds of Significance

For the purposes of this PEIR, Kern COG has determined that implementation of the proposed 2026 RTP could result in significant adverse impacts to mineral resources if the Plan would result in any of the following:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

4.12.3.2 Methodology

The methodology for determining the significance of impacts on mineral resources compares the existing conditions (2025) to the future 2049 conditions under the Plan, as required by *State CEQA Guidelines* Section 15126.2(a). Specifically, the volume of aggregate material likely to be required to support the transportation projects and urban development encouraged by land use strategies in the Plan was evaluated in relation to

---

15 California Legislative Information. 1965. *ARTICLE 5. Authority for and Scope of General Plans [65300-65303.4].*

16 Ibid.

the availability of permitted mineral resources and other potential mineral resource recovery sites in Kern County. Mineral resources within Kern County were evaluated at the programmatic level of detail, in relation to the general plans of the 11 incorporated cities in Kern County, a review of California Minerals and Mines, and a review of related literature germane to the County.

Determination of Significance

The impact assessment for mineral resources focuses on the potentially significant effects of the Plan on mineral resources contained within the region. The methodology for determining the significance of these impacts compares a regional-level analysis of the future Plan conditions to existing mineral resources.

As noted above, areas within the region contain mineral deposits, aggregate, and oil and gas resources. Generally, with regard to mineral impacts, the greater the change from existing conditions, the more significant the impact on the mineral resources. For example, the construction of a new roadway generally has a greater impact on mineral resources than the widening of an existing one. Road widening, however, can have significant local impacts, especially when located in a Mineral Resources Zone.

The development of new transportation facilities may affect mineral resources, either by directly affecting a mineral resource zone or through indirect effects on adjacent areas by reducing the amount of resources available for extraction. The region contains numerous mineral resources; therefore, the potential for impacts to mineral resources exists. Improvements within existing rights-of-way are less likely to substantially affect existing mineral resources; however, new highway segments near mineral resource recovery sites would constitute a significant impact. In addition, reducing the availability of a known mineral resource that would be of value to the region and the residents of the state could cause significant impacts.

This document analyzes impacts to mineral resources at a programmatic level; project-level analysis of impacts is required as appropriate.

Approach to Mitigation

As discussed in **Section 1.0, Introduction**, Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as

appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

4.12.3.3 Impacts and Mitigation Measures

Impact MIN-1: Potential to result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

Regional and Transit Priority Area Impacts

Transportation projects contained in the Plan and development projects anticipated to occur under the Plan would require substantial amounts of aggregate resources for construction purposes. Aggregate is a low-unit-value, high-bulk-weight commodity or material required for the construction of most transportation projects and development projects that must be obtained from nearby sources in order to minimize costs to the consumer. The permitted aggregate reserve in the Bakersfield region is 1,690 million tons, and CGS has forecasted the fifty-year aggregate demand to be 207 million tons.[17] The projected demand will only constitute 12 percent of current permitted reserves, leaving 88 percent of construction aggregate available for use. These projections suggest that the Kern COG region can support the construction of the 2026 RTP transportation improvements, as well as development projects and growth influenced by the regional land use strategies identified in the Plan. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

None required

---

17 Department of Conservation, California Geological Survey, *Aggregate Sustainability in California*, 2026. Available online at: https://conservation.ca.gov/cgs/Documents/Publications/Map-Sheets/MS_052-Aggregate-Sustainability-2026-Supplement-a11y.pdf, accessed April 6, 2026.

Level of Significance after Mitigation

Less than significant.

IMPACT MIN-2: Potential to result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Regional and Transit Priority Area Impacts

As discussed in **Section 4.12.1, Environmental Setting**, there are MZR-1 and MRZ-2 areas mapped in Kern County, including an MRZ-2 in Metropolitan Bakersfield. Additionally, the Kern County General Plan Map identifies several areas within Kern County that contain producing or potentially productive petroleum fields, natural gas, geothermal resources, and mineral deposits of regional and Statewide significance. Uses shall include, but are not limited to, the following: mineral and petroleum exploration and extraction, including aggregate extraction; extensive and intensive agriculture; mineral and petroleum processing (excluding petroleum refining); natural gas and geothermal resources; pipelines; power transmission facilities; communication facilities; equipment storage yards; and borrow pits.

Transportation projects contained in the Plan and development projects anticipated to occur under the Plan have the potential to impact the availability of mineral resources if they are constructed in mineral resource zones. Improvements and modifications to existing rights-of-way, such as HOV lanes, toll lanes, bike lanes, other transportation facilities, and right-of-way maintenance, would have less potential to impact mineral resources because these transportation projects improve facilities that already exist and are already impeding access to resources. Construction of new transportation projects, like new freeways and even additional lanes, has the potential to intersect with mapped mineral resource zones and impact the availability of aggregate and mineral resources.

The Kern County General Plan identifies mineral resources as an essential part of Kern County's economy. Boron, cement production, and construction aggregates constitute major economic mineral resources. The Plan's transportation projects and anticipated development have the potential to reduce the availability of these resources, either directly by locating projects within mineral resource zones or indirectly through the use of aggregate and mineral resources in project development that may result in depletion of aggregate supply. As a result, impacts to mineral resources are potentially significant at the programmatic level of review, and mitigation is required. **Mitigation Measure MM MIN-1** would reduce these impacts.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measure

MM MIN-1: Kern COG through its intergovernmental review process, shall coordinate with the Department of Conservation, California Geological Survey to ensure that transportation projects avoid MRZs and areas identified through the General Plan to contain natural resources, and access to recoverable mineral and fuel resources is sustained through construction, operation and maintenance of projects. Efforts will be made to maintain portions of MRZ-2 areas in open space or other general plan land use categories and zoning that allow for mining of mineral resources. Where avoidance is infeasible, design transportation network improvements in a manner that does not preclude adjacent or nearby extraction of known mineral and aggregate resources following completion of the improvement and during long-term operations, such as buffer zones or screening. maintaining portions of MRZ-2 areas in open space or other general plan land use categories and zoning that allow for mining of mineral resources.

Level of Significance after Mitigation

Implementation of Mitigation Measure **MM MIN-1** would potentially reduce impacts, but not to a level below significance. Therefore, this impact is considered significant and unavoidable. However, this document evaluates impacts at the programmatic level, and all project circumstances are not foreseeable. The characteristics of any individual project and/or resource will affect the level of significance after mitigation, as well as the feasibility of mitigation that must be assessed on a project-by-project basis based on project-specific details.

4.12.4 CUMULATIVE IMPACTS

The proposed RTP encompasses all development (both transportation and land use changes) that would occur in the region through 2049. The impacts of anticipated development are discussed above; currently, there appear to be sufficient aggregate reserves available to meet the needs of Kern County. However, this is not the case in all regions, but the costs of transporting such materials are prohibitively high. Therefore, it is not anticipated that the RTP would substantially contribute to a cumulatively considerable impact on mineral resource availability. Implementation of **Mitigation Measure MM MIN-1** would reduce impacts related to mineral resource zones; however, as discussed above, impacts to mineral resource zones would remain potentially significant and could contribute to similar impacts in other jurisdictions.

4.13 NOISE

This section describes the existing noise and vibration levels within the region and evaluates the significance of the changes in short and long-term noise and groundborne vibration that could result from the 2026 RTP. In addition, this PEIR provides regional-scale mitigation measures as well as a framework of mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies to reduce identified impacts as appropriate and feasible.

4.13.1 NOISE CHARACTERISTICS AND EFFECTS

Characteristics of Sound. Sound is technically described in terms of the loudness (amplitude) and frequency (pitch) of the sound. The standard unit of measurement for sound is the decibel (dB). The human ear is not equally sensitive to sound at all frequencies. The "A-weighted scale," abbreviated dB(A), reflects the normal hearing sensitivity range of the human ear. On this scale, the range of human hearing extends from approximately 3 to 140 dB(A). **Figure 4.13-1, A-Weighted Decibel Scale**, provides examples of A-weighted noise levels from common sounds.

Noise Definitions. Environmental noise levels typically fluctuate across time of day; different types of noise descriptors are used to account for this variability, and different types of descriptors have been developed to differentiate between cumulative noise over a given period and single noise events. Cumulative noise descriptors include the energy-equivalent noise level (Leq), Day-Night Average Noise Level (DNL), and Community Noise Equivalent Level (CNEL). The Leq is the actual time-averaged, equivalent steady-state sound level, which, in a stated period, contains the same acoustic energy as the time-varying sound level during the same period. DNL and CNEL values result from the averaging of Leq values (based on A-weighted decibels) over a 24-hour period, with weighting factors applied to different periods of the day and night to account for their perceived relative annoyance. For DNL, noise that occurs during the nighttime period (10:00 PM to 7:00 AM) is "penalized" by 10 dB. CNEL is similar to DNL, except that it also includes a "penalty" of approximately 5 dB for noise that occurs during the evening period (7:00 PM to 10:00 PM).

Individual noise events, such as train pass-bys or aircraft over-flights, are further described using single-event and cumulative noise descriptors. For single events, the maximum measured noise level (Lmax) is often cited, as is the Sound Exposure Level (SEL). The SEL is the energy-based sum of a noise event of given duration that has been "squeezed" into a reference duration of one second, and is typically a value five to 10 dB higher than the Lmax.

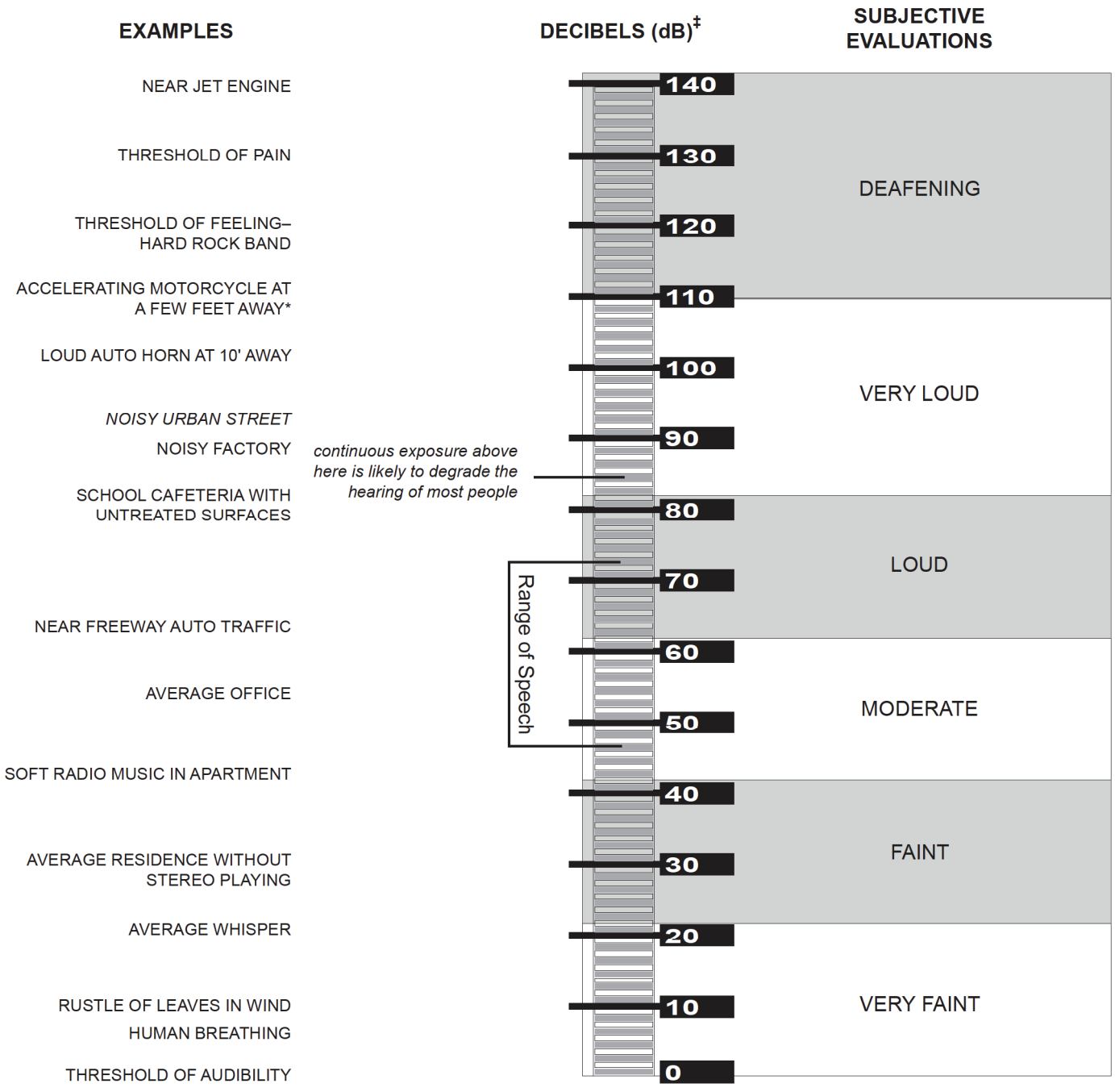
Effects of Noise. Noise is generally defined as unwanted sound. The degree to which noise can impact the human environment ranges from levels that interfere with speech and sleep (annoyance and nuisance) to levels that cause adverse health effects (hearing loss and psychological effects). Human response to noise is subjective and can vary greatly from person to person. Factors that influence individual response include the intensity, frequency, and pattern of noise, the amount of background noise present before the intruding noise, and the nature of work or human activity that is exposed to the noise source.

Audible Noise Changes. Studies have shown that the smallest perceptible change in sound level for a person with normal hearing sensitivity is approximately 3 dB(A). A change of at least 5 dB(A) would be noticeable and would likely evoke a community reaction. A 10-dB(A) increase is subjectively heard as a doubling in loudness and would cause a community response.

Noise levels decrease as the distance from the noise source to the receiver increases. Noise generated by a stationary noise source, or "point source," will decrease by approximately 6 dB(A) over hard surfaces (e.g., reflective surfaces such as parking lots or smooth bodies of water) and 7.5 dB(A) over soft surfaces (e.g., absorptive surfaces such as soft dirt, grass, or scattered bushes and trees) for each doubling of the distance. For example, if a noise source produces a noise level of 89 dB(A) at a reference distance of 50 feet, then the noise level would be 83 dB(A) at a distance of 100 feet from the noise source, 77 dB(A) at a distance of 200 feet, and so on. Noise generated by a mobile source will decrease by approximately 3 dB(A) over hard surfaces and 4.8 dB(A) over soft surfaces for each doubling of the distance.

Generally, noise is most audible when traveling by direct line-of-sight. Barriers, such as walls, berms, or buildings, that break the line-of-sight between the source and the receiver greatly reduce noise levels from the source since sound can only reach the receiver by bending over the top of the barrier. Sound barriers can reduce sound levels by up to 20 dB(A). However, if a barrier is not high or long enough to break the line-of-sight from the source to the receiver, its effectiveness is greatly reduced.

Decibels are logarithmic units. Two decibel levels cannot be added by ordinary arithmetic means. If one automobile produces a 70-dB noise level when it passes an observer, two cars passing simultaneously would not produce 140 dB. They would combine to produce a 73-dB noise level. As an example, consider a receptor located near the interchange of two freeways. One freeway generates a 72-dB(A) noise level, and the other freeway generates a 66-dB(A) noise level. The combined noise exposure from the freeways would be 73 dB(A). Another example is a receptor located near a freeway and underneath an airport flight path. The noise levels at a receptor could be 75 dB(A) from aircraft noise and 72 dB(A) from freeway noise. The combined noise level from aircraft and freeway noise exposure would be 77 dB(A).



** NOTE: 50' from motorcycle equals noise at about 2000' from a four-engine jet aircraft.*

‡*NOTE: dB are "average" values as measured on the A–scale of a sound–level meter.*

SOURCE: Impact Sciences Inc., 2026

FIGURE **4.13-1**

IMPACT SCIENCES

A-Weighted Decibel Scale

1170.004•04/26

4.13.2 VIBRATION CHARACTERISTICS AND EFFECTS

Vibration is a unique form of noise. It is unique because its energy is carried through structures and the earth, whereas noise is simply carried through the air. Thus, vibration is generally felt rather than heard. Some vibration effects can be caused by noise; e.g., the rattling of windows from truck pass-bys. This phenomenon is related to the coupling of the acoustic energy at frequencies that are close to the resonant frequency of the material being vibrated. Typically, groundborne vibration generated by man-made activities attenuates rapidly as the distance from the source of the vibration increases. Vibration, which spreads through the ground rapidly, diminishes in amplitude with distance from the source. The ground motion caused by vibration is measured as particle velocity in inches per second and, in the U.S. is referenced as vibration decibels (VdB).

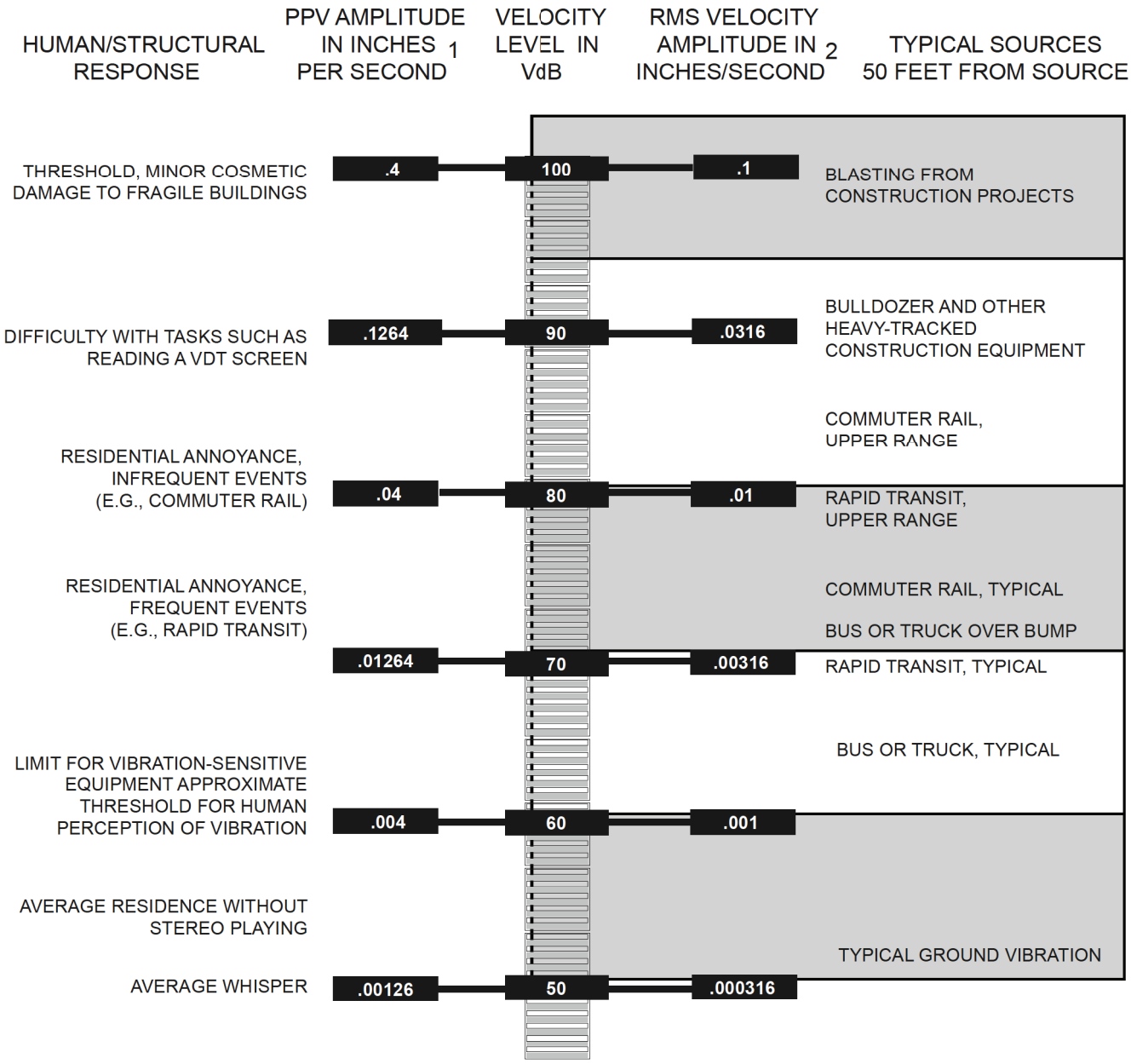
The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, the movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is barely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

Figure 4.13-2, Typical Levels of Groundborne Vibration, identifies the typical groundborne vibration levels in VdB and human response to different levels of vibration.

Vibration Definitions. There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings and is usually measured in inches per second. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. VdB is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration.[1]

Effects of Vibration. High levels of vibration may cause physical personal injury or damage to buildings. However, groundborne vibration levels rarely affect human health. Instead, most people consider groundborne vibration to be an annoyance that can affect concentration or disturb sleep. In addition, high

1 Federal Transit Administration, Transit Noise and Vibration Impact Assessment. 2006.



[1] PPV is typically a factor 1.7 to 6 times greater than RMS vibration velocity. A factor of 4 was used to calculate noise levels.

[2] Vibration levels in terms of velocity levels are defined as: $V=20 \times \log_{10} (a/r)$
V=velocity levels in decibels
a=RMS velocity amplitude
r=reference amplitude (accepted reference quantities for vibration velocity are 1×10^{-6} inches/second in the United States)

SOURCE: Impact Sciences Inc., 2026

FIGURE **4.13-2**

IMPACT SCIENCES

Typical Levels of Groundbourne Vibration

levels of groundborne vibration can damage fragile buildings or interfere with equipment that is highly sensitive to groundborne vibration (e.g., electron microscopes).

Perceptible Vibration Changes. In contrast to noise, groundborne vibration is not a phenomenon that most people experience every day. The background vibration velocity level in residential areas is usually 50 RMS or lower, well below the threshold of perception for humans, which is around 65 RMS. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, the movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible.

4.13.3 ENVIRONMENTAL SETTING

4.13.3.1 Sources of Noise Generation in Kern County

Many principal noise generators within the County are associated with transportation (i.e., airports, freeways, arterial roadways, and railroads). Additional noise generators include stationary sources, such as industrial manufacturing plants, construction sites, and wind turbines. Local collector streets are not considered to be a significant source of noise since traffic volume and speed are generally much lower than for freeways and arterial roadways. Generally, transportation-related noise sources characterize the ambient noise environment of an area.

Solid walls and berms may reduce noise levels by 5 to 10 dB(A).[2] The minimum attenuation of exterior to interior noise provided by typical structures in California is provided in **Table 4.13-1, Outside to Inside Noise Attenuation (dB(A))**.

When assessing community reaction to noise, there is an obvious need for a scale that averages sound pressure levels over time and quantifies the result in terms of a single numerical descriptor. Several scales have been developed that address community noise levels.

2 U.S. Department of Transportation, Federal Highway Administration, Highway Noise Mitigation, (Springfield, Virginia: U.S. Department of Transportation, Federal Highway Administration, September 1980), p. 18.

Table 4.13-1
Outside to Inside Noise Attenuation (dB(A))

Building Type	Open Windows	Closed Windows
Residences	17	25
Schools	17	25
Churches	20	30
Hospitals/Convalescent Homes	17	25
Offices	17	25
Theaters	20	30
Hotels/Motels	17	25

Source: Transportation Research Board, National Research Council, Highway Noise: A Design Guide for Highway Engineers, National Cooperative Highway Research Program Report 117.

Freeways and Arterial Roadways

The extent to which traffic noise levels along the County's roads affect sensitive land uses depends upon a number of factors. These include whether the roadway itself is elevated above grade or depressed below grade, whether there are intervening structures or terrain between the roadway and the sensitive uses, and the distance between the roadway and such uses. For example, measurements show that depressing a freeway by approximately 12 feet yields a reduction in traffic noise relative to an at-grade freeway of 7 to 10 dB at all distances from the freeway.[3]

Traffic noise from an elevated freeway is typically 2 to 10 dB less than the noise from an equivalent at-grade facility within 300 feet of the freeway, but beyond 300 feet, the noise radiated by an elevated and at-grade freeway (assuming equal traffic volumes, fleet mix, and vehicle speed) is the same.[4]

Additionally, the County has a number of arterial roadways. Typical arterial roadways have one or two lanes of traffic in each direction, with some containing as many as four lanes in each direction. Noise from these sources can be a significant environmental concern where buffers (e.g., buildings, landscaping, etc.) are inadequate or where the distance from the centerline to sensitive uses is relatively small. An additional factor where trucks are present is gradient, road alignment, and signalization. Trucks going up or down a grade can produce significantly more noise due to deceleration or acceleration.

3 Beranek, L. L. 1988. *Noise and Vibration Control* (pp. 182). New York: McGraw-Hill.

4 Ibid.

Airports

Kern County contains 19 established air carrier airports, including two commercial airports. Meadows Field in Bakersfield is the largest, with approximately 58 daily commercial flights. Inyokern, the other commercial airport, averages about 10 flights a day to and from Los Angeles. There are 16 public-use aviation airports in Kern County operated by the County, public districts, cities, or privately owned. The major private civilian facilities having potential for significant noise level impacts are Meadows Field and Bakersfield Municipal Air Park in Bakersfield, Shafter Airport, and Mojave Airport.

In addition to the civilian airports, there are two major defense-related air bases. China Lake Naval Air Weapons Station is located near Ridgecrest. Edwards Air Force Flight Test Center is located near Rosamond. Both bases have associated air corridors. Both of the military facilities are principal bases for research and development, and testing and evaluation for air warfare and missile weapons systems. In support of these activities, many varied aircraft utilize the airfield facilities. Kern County noise contours for airports in Kern County can be found in the Kern County Airport Land Use Compatibility Plan.

Airport noise contours have been established for all airport facilities in the County. In addition, noise contours for existing and future conditions at each of the airports are contained in plans or studies, including: Airport Master Plans, Airport Land Use Compatibility Plan, Comprehensive Airport Land Use Plans, Airspace Plans, and Airport Layout Plans, which are all incorporated by reference. Each of these plans or studies includes implementation goals, objectives, and policies and/or recommendations to address noise impacts.

Railroad Operations

Railroad operations generate high, relatively brief, intermittent noise events. These noise events are an environmental concern for sensitive uses located along rail lines and in the vicinity of switching yards. Locomotive engines and the interaction of steel wheels and rails primarily generate rail noise. The latter source creates three types of noise: (1) rolling noise due to continuous rolling contact, (2) impact noise when a wheel encounters a rail joint, turnout, or crossover, and (3) squeal generated by friction on tight curves. For very-high-speed rail vehicles, air turbulence can be a significant source of noise. In addition, the use of air horns and crossing bell gates contributes to noise levels in the vicinity of grade crossings. **Table 4.13-2, Reference Noise Levels for Various Rail Operations,** provides reference noise levels in terms of Sound Exposure Levels for different types of rail operations.

High noise impacts can be expected within approximately 100 feet of the main line railroad tracks, moderate impacts from 100 to 700 feet, and low impacts at distances greater than about 700 feet. The above-

noted impacts may be lesser or greater depending on site-specific factors such as sound walls and grade crossings. and topographic shielding.

Table 4.13-2
Reference Noise Levels for Various Rail Operations

Source/Type		Reference Condition	Reference Noise Level (SEL, dB(A)
Commuter Rail, At-Grade	Locomotives	Diesel-electric, 3,000 horsepower, throttle 5	92
		Electric	90
	Diesel Multiple Unit	Diesel-powered, 1,200 horsepower	85
	Horns	Within 0.25 mile of grade crossing	110
	Cars	Ballast, welded rail	82
Rail Transit		At-grade, ballast, welded rail	82
Transit Whistles/Warning Devices		Within 0.125 mile of grade crossing	93
Automated Guideway Transit	Steel Wheel	Aerial, concrete, welded rail	80
	Rubber Tire	Aerial, concrete, guideway	78
Monorail		Aerial, straddle beam	82
Maglev		Aerial, open guideway	72

Source:
FTA, Transit Noise and Vibration Impact Assessment, 2006

The County is also affected by freight and passenger railroad operations. While these operations generate significant noise levels in the immediate vicinity of the railroad tracks during train passages, these operations are intermittent, and the tracks are widely dispersed throughout the County.

Freight Trains

Noise levels generated by freight train passby events reflect locomotive engine noise and rail car wheel rail interaction. The former depends upon track grade conditions (i.e., uphill versus downhill) and is largely independent of speed, whereas the latter is highly speed dependent, increasing approximately 6 dB for each doubling of train velocity. In addition to noise, freight trains also generate substantial amounts of groundborne noise and vibration in the vicinity of the tracks. Groundborne noise and vibration are functions of both the quality of the track and the operating speed of the vehicles.

The County has an extensive network of railroad lines belonging primarily to two major railroads: Union Pacific (UP) and Burlington Northern/Santa Fe Railway (BNSF). Within the County, Union Pacific follows SR 99, while BNSF follows SR 43. Both railroads parallel each other north of Bakersfield through the San

Joaquin Valley. A rail line supporting 40 freight trains per day generates approximately DNL 75 dB at 200 feet from the tracks. **Table 4.13-3, Exterior Noise Exposure Adjacent to Nearby Rail Lines,** provides the CNEL for several segments of both the UP and BNSF railroads.

Table 4.13-3
Exterior Noise Exposure Adjacent to Rail Lines
Distance (Feet) from Center of Track to CNEL Contour Values
for Railroad Operations (1986)

Railroad	Segment	CNEL 65 dB	CNEL 60 DB
UP	UP Mainline Yard to the northwest.	342	730
	(within 1,000 feet of grade crossings)	(631)	(1,360)
UP/BNSF	UP Mainline combined operations. Yard to Edison. (within 1,000 feet of grade crossings)	464	1,000
		(858)	(1,848)
BNSF	AT&SF Mainline. Yard to northwest.	342	730
	(within 1,000 feet of grade crossings)	(631)	(1,360)
BNSF	UP Arvin Branchline.	369	794
	(within 1,000 feet of grade crossings)	(681)	(1,468)
UP	UP McKittrick Branchline.	25	54
	(within 1,000 feet of grade crossings)	(46)	(100)
BNSF	UP Oildale Branchline.	25	54
	(within 1,000 feet of grade crossings)	(46)	(100)

Source: Bakersfield General Plan Update, EIR.
Note:
UP= Union Pacific
BNSF= Burlington Northern/Santa Fe Railway

Regional service is provided by the San Joaquin Valley Railroad (SJVR). The SJVR interchanges with the Union Pacific Railroad at Fresno, Goshen Junction, and Bakersfield, and the Burlington Northern Santa Fe at Fresno and Bakersfield.

Commuter Passenger Trains

In general, the noise generated by commuter rail facilities (powered by either diesel or electric locomotives) is from the locomotives themselves as well as some noise from rail car wheel rail interaction. In the County, Amtrak provides commuter passenger train service. Amtrak operates trains between Bakersfield, Wasco, and destinations north, with bus connector destinations to Los Angeles, Las Vegas, San Diego, and San Luis Obispo. A typical Amtrak passby event generates SEL 107 dB at 50 feet; two such events during the daytime or evening periods generate approximately DNL 61 dB at 50 feet and approximately DNL 52 dB at 200 feet. Nine such events generate approximately DNL 67 dB at 50 feet and 58 DNL dB at 200 feet. The

San Joaquin Amtrak passenger cars provide passenger service throughout California's Central Valley with seven northbound and seven southbound trains every day.

Industrial, Manufacturing, and Construction

Noise from industrial complexes, manufacturing plants, and construction sites is characterized as stationary, or point, sources of noise even though they may include mobile sources, such as forklifts and graders. Local governments typically regulate noise from industrial, manufacturing, and construction equipment and activities through enforcement of noise ordinance standards, implementation of general plan policies, and imposition of conditions of approval for building or grading permits. Industrial complexes and manufacturing plants are generally located away from sensitive land uses, and, as such, noise generated from these sources generally has less effect on the local community.

In contrast to industrial and manufacturing plants, construction sites are located throughout the region and are often located within, or adjacent to, residential districts. In general, construction activities generate high noise levels intermittently on and adjacent to the construction sites, and the related noise impacts are short-term in nature. The dominant source of noise from most construction equipment is the engine, usually a diesel engine, with inadequate muffling. In a few cases, however, such as impact pile driving or pavement breaking, noise generated by the process dominates.

Construction equipment can be considered to operate in two modes: stationary and mobile. Stationary equipment operates in one location for one or more days at a time, with either a fixed-power operation (pumps, generators, compressors) or a variable noise operation (pile drivers, pavement breakers). Mobile equipment moves around the construction site with power applied in a cyclic fashion (bulldozers, loaders), or movement to and from the site (trucks).

Construction-related noise levels generally fluctuate depending on the construction phase, equipment type, and duration of use, distance between noise source and receptor, and presence or absence of barriers between noise source and receptor. **Table 4.13-4, Demolition and Construction of Equipment Source Noise Levels,** shows typical noise levels associated with various types of construction-related machinery. These noise levels, which correspond to a distance of 50 feet, decrease by approximately 6 dB with each doubling of distance from the construction site (e.g., noise levels from excavation might be approximately 83 dB at 100 feet from the site, and about 77 dB at 200 feet from the site). Interior noise levels from construction are approximately 10 dB (open windows) to 20 dB (closed windows) less than exterior noise levels due to the attenuation provided by building facades.

Table 4.13-4
Demolition and Construction of Equipment Source Noise Levels

Equipment	Levels in dB(A) at 50 feet
Front Loader	81
Pickup Truck	55
Cranes (Moveable or Stationary)	85
Chain Saw	85
Pneumatic Impact Equipment	85
Jackhammers	85
Pumps	77
Generators	70-82
Compressors	80
Concrete Mixers	85
Concrete Pumps	82
Back Hoe	80
Pile Driving (Peaks)	95
Tractor	84
Scraper	85
Paver	85

Source: Federal Highway Administration. *Roadway Construction Noise Model User's Guide*. 2006.

Kern County has three zoning designations for industrial activity: Light Industrial, Service Industrial, and Heavy Industrial. Although some industrial uses are allowed under site plan review, such as wholesale businesses and storage yards, there are specific siting policies in the zoning ordinance for distance from an existing residential use. Other industrial facilities require a conditional use permit (CUP), which is a discretionary process as industrial uses typically have other impacts that need to be evaluated under CEQA. Other jurisdictions have similar land use controls for industrial use.

Siting of an industrial facility so that noise generated beyond the boundaries of the project site does not affect sensitive receptors is the most effective mitigation. Reduction of noise can also occur through changes in operations and the installation of sound-dampening equipment.

Energy Development Oil and Gas Production

Noise effects related to the exploration and production of oil and gas wells is minimal. The predominant areas where oil and gas production occurs are located in agricultural and industrially zoned areas, which are generally separated from sensitive noise receptors. Development standards in Chapter 19.98 Oil and

Gas Production of the County's Zoning Ordinance require minimum spacing standards for new wells from sensitive land uses, which minimizes land uses and noise conflicts. Within the residential zone districts (R-1 (Low Density Residential), R-2 (Medium Density Residential), E (Estate) a CUP is required for oil and gas production facilities. The CUP affords a discretionary process that is subject to CEQA, where noise issues relative to a specific project can be addressed. Other jurisdictions have similar land use controls for oil and gas production.

Energy Development Wind Turbines

Kern County has a significant concentration of wind turbines in the Tehachapi-Mojave area, with more than 4,000 installed turbines.[5] Turbines can generate significant noise and have become more efficient, although more powerful and taller (330 feet) than the first installations in the 1980s, which generally did not exceed 80 feet in height. Development standards in Chapter 19.64 Wind Energy (WE) District of the County's Zoning Ordinance include comprehensive requirements and standards to address noise impacts on sensitive receptors. The siting and setback criteria in the ordinance are designed to ensure sufficient distance from roadways and sensitive receptors such as residences.

4.13.3.2 Vibration

Similar to the environmental setting for noise, the vibration environment is typically dominated by traffic from nearby roadways and activity on construction sites. Heavy trucks can generate groundborne vibrations that vary depending on vehicle type, weight, and pavement conditions. Heavy trucks typically operate on major streets. Nonetheless, vibration levels adjacent to roadways are typically not perceptible.

As shown in **Table 4.13-5, Vibration Levels Associated with Construction Equipment**, the highest impact is associated with the heaviest equipment, such as pile drivers or large bulldozers, which can generate vibrations of 1.518 to 0.089 inches per second PPV at a distance of 25 feet.

5 USGS, *The U.S. Wind Turbine Database.* Available online at: https://energy.usgs.gov/uswtdb/viewer/#9.43/35.1636/-118.2884 , accessed April 8, 2026.

Table 4.13-5
Vibration Levels Associated with Construction Equipment

Equipment		PPV at 25 feet (inches per second)	Approximate Vdb at 25 feet
Pile Driver (Impact)	Upper Ranges	1.518	112
	Typical	0.644	104
Pile Driver (Sonic)	Upper Range	0.734	105
	Typical	0.170	93
Vibratory Roller		0.210	95
Clam Shovel Drop (Slurry Wall)		0.202	94
Hydrol Mill (Slurry Wall)	In Soil	0.008	66
	In Rock	0.017	75
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006.

4.13.3.3 Sensitive Receptors

Some land uses are considered more sensitive to ambient noise levels than others due to noise exposure (in terms of both exposure time and "insulation" from noise) and the types of activities typically involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, natural areas, parks, and outdoor recreation areas are generally more sensitive to noise than are commercial and industrial land uses. Consequently, the noise standards for sensitive land uses are more stringent than those for less sensitive uses, such as commercial and industrial.

To protect various human activities and sensitive land uses (e.g., residences, schools, and hospitals), lower noise levels are needed. A noise level of DNL 55 to 60 dB(A) outdoors is the upper limit for intelligible speech communication inside a typical home. In addition, social surveys and case studies have shown that complaints and community annoyance in residential areas begin to occur at DNL 55 dB. Sporadic complaints associated with the DNL 55 to 60 dB range give way to widespread complaints and individual threats of legal action within the DNL 60 to 70 dB range. At DNL 70 dB and above, residential community reaction typically involves threats of legal action and strong appeals to local officials to stop the noise.

Kern County encompasses a large area with a wide variety of noise sources and noise levels. The ambient noise environment ranges from low levels associated with wilderness areas to high levels associated with

airports and heavily trafficked roadways. Given the size of the County and the variation in sources it is not possible to complete a detailed noise monitoring study for this Program EIR. Rather, this Program EIR presents a discussion of noise levels associated with different noise sources and thereby allows the reader to infer the noise level at different locations depending on the proximity of a location to a noise source.

4.13.4 REGULATORY FRAMEWORK

The federal government sets noise standards for transportation-related noise sources that are closely linked to interstate commerce, such as aircraft, locomotives, and trucks, and, for those noise sources, the state government is preempted from establishing more stringent standards.

The state sets noise standards for those transportation noise sources that are not preempted from regulation, such as automobiles, light trucks, and motorcycles. Noise sources associated with industrial, commercial, and construction activities are generally subject to local control through noise ordinances and general plan policies.

4.13.4.1 Federal

Noise Control Act of 1972

The Noise Control Act of 1972, as codified in 42 U.S. Code §4901 *et seq.*, establishes a means for effective coordination of federal research and activities in noise control, authorizes the establishment of federal noise emission standards for products distributed in commerce, and provides information to the public with respect to the noise emission and noise reduction characteristics of such products.

Noise Abatement and Control (Title 24 Code of Federal Regulations, Part 51, Subpart B)

The Department of Housing and Urban Development (HUD) has developed a standard for noise criteria to facilitate the creation of suitable living environments. The mission of HUD includes fostering "a decent, safe, and sanitary home and suitable living environment for every American." Accounting for acoustics is intrinsic to this mission, as an environment's safety and comfort can be compromised by excessive noise. The basic foundation of the HUD noise program is set out in the noise regulation 24 CFR Part 51 Subpart B, Noise Abatement and Control.

HUD's noise policy clearly requires noise attenuation measures to be provided when proposed projects are to be located in high noise areas. Within the HUD Noise Assessment Guidelines, potential noise sources are examined for projects located within 15 miles of a military or civilian airport, 1,000 feet from a road, or 3,000 feet from a railroad.

HUD exterior noise regulations state that 65 dB(A) DNL noise levels or less are acceptable for residential land uses, and noise levels exceeding 75 dB(A) DNL are unacceptable. HUD's regulations do not contain standards for interior noise levels. Rather, a goal of 45 decibels is set forth, and the attenuation requirements are geared toward achieving that goal. It is assumed that with standard construction, any building will provide sufficient attenuation so that if the exterior level is 65 dB(A) DNL or less, the interior level will be 45 dB(A) DNL or less.

Federal Noise Regulations for Locomotives and Trucks

Federal regulations for railroad noise are contained in 40 Code of Federal Regulations (CFR) Part 201 and 49 CFR Part 210. The regulations set noise limits for locomotives and are implemented through regulatory controls on locomotive manufacturers. Federal regulations also establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 CFR Part 205, Subpart B. The federal truck passby noise standard is 80 dB at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers. The Federal Highway Administration (FHWA) regulations for noise abatement must be considered for federal or federally funded projects involving the construction of a new highway or significant modification of an existing freeway when the project would result in a substantial noise increase or when the predicted noise levels approach or exceed the Noise Abatement Criteria (NAC).

Federal Noise Regulations for Federal and Federal-aid Highway Projects

Title 23 of the Code of Federal Regulations (23 CFR § 772) provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. Under 23 CFR § 772.7, projects are categorized as Type I or Type II projects. FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location, or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment, or increases the number of through-traffic lanes. A Type II project is a noise barrier retrofit project that involves no changes to highway capacity or alignment.

Type I projects include those that create a completely new noise source, as well as those that increase the volume or speed of traffic or move the traffic closer to a receiver. Type I projects include the addition of an interchange, ramp, auxiliary lane, or truck-climbing lane to an existing highway, or the widening of an existing ramp by a full lane width for its entire length. Projects unrelated to increased noise levels, such as striping, lighting, signing, and landscaping projects, are not considered Type I projects.

Under 23 CFR § 772.11, noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact. In such cases, 23 CFR § 772 requires that the project sponsor "consider"

noise abatement before adoption of the environmental document. This process involves the identification of noise abatement measures that are reasonable, feasible, and likely to be incorporated into the project, and of noise impacts for which no apparent solution is available.

Traffic noise impacts, as defined in 23 CFR § 772.5, occur when the predicted noise level in the design year approaches or exceeds the NAC specified in 23 CFR § 772, or a predicted noise level substantially exceeds the existing noise level (a "substantial" noise increase). Under these regulations, an impact could result unrelated to the Plan if existing noise levels already exceed the NAC. A "substantial increase" is defined as an increase in Leq of 12 dB during the peak hour of traffic noise. For sensitive uses, such as residences, schools, churches, parks, and playgrounds, the NAC for interior and exterior spaces is Leq 57 and 66 dB, respectively, during the peak hour of traffic noise. **Table 4.13-6, Noise Abatement Criteria,** summarizes NAC corresponding to various land use activity categories. Activity categories and related traffic noise impacts are determined based on the actual land use in a given area.

Table 4.13-6
Noise Abatement Criteria

NAC, Hourly A-Weighted Noise Level	Description of Activities
57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
72 (Exterior)	Developed lands, properties, or activities not included in above.
52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: Caltrans, Technical Noise Supplement, November 2009

Federal Regulations for Aircraft Noise

Aircraft operated in the US are subject to certain federal requirements regarding noise emissions levels. These requirements are set forth in Title 14 CFR, Part 36. Part 36 establishes maximum acceptable noise levels for specific aircraft types, taking into account the model year, aircraft weight, and number of engines. Pursuant to the federal Airport Noise and Capacity Act of 1990, the Federal Aviation Administration (FAA) established a schedule for complete transition to Part 36 "Stage 3" standards by year 2000. This transition schedule applies to jet aircraft with a maximum takeoff weight in excess of 75,000 pounds, and thus applies to passenger and cargo airlines, but not to operators of business jets or other general aviation aircraft.

National Environmental Policy Act

The National Environmental Policy Act (NEPA) is implemented by regulations included in the Code of Federal Regulations (40 CFR § 1500 *et seq*.), which require careful consideration of the harmful effects of federal actions or plans, including projects that receive federal funds, if they may have a significant adverse effect on the environment. NEPA mandates that all federal agencies carry out their regulations, policies, and programs in accordance with NEPA's policies of environmental protection. NEPA encourages the protection of all aspects of the environment and requires federal agencies to utilize a systematic, interdisciplinary approach to agency decision-making that will ensure the integrated use of natural sciences such as geology. Although NEPA does not establish specific noise standards, the noise impacts of projects are routinely considered as one of the potential environmental consequences of federal actions subject to NEPA. While NEPA compliance is not required for the project, NEPA compliance will be required for transportation improvement projects that will be financed using federal funds. Some development projects (such as low-income housing) also use federal funds and are subject to NEPA. The regulations also require projects requiring NEPA review to seek to avoid or minimize adverse effects of proposed actions, and restore and enhance environmental quality as much as possible.

Federal Transit Administration Noise and Vibration Guidance

The Federal Transit Administration (FTA) has published guidance relative to vibration impacts. According to the FTA, engineered concrete and masonry buildings can be exposed to groundborne vibration levels of 0.3 inch per second without experiencing structural damage. Buildings extremely susceptible to vibration damage can be exposed to groundborne vibration levels of 0.12 inch per second without experiencing structural damage.[6] The levels are shown in **Table 4.13-7, Construction Vibration Damage Criteria**.

Table 4.13-7
Construction Vibration Damage Criteria

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

Source: Adapted from: Federal Transit Administration. May 2006. Transit Noise and Vibration Impact Assessment. Washington, DC.

6 Federal Transit Administration. *Transit Noise and Vibration Impact Assessment.* 2006.

4.13.4.2 State

California Noise Control Act of 1973

The California Noise Control Act (California Health and Safety Code, Division 28, § 46000 *et seq.*), declares that excessive noise is a serious hazard to public health and welfare, and establishes the Office of Noise Control with responsibility to set standards for noise exposure in cooperation with local governments or the state legislature.

California Environmental Quality Act (CEQA)

Methods of controlling noise exist through the environmental review process required by the CEQA. Noise control measures can be required as mitigation measures under CEQA at the project level for projects that would generate excessive noise or would be impacted by existing noise sources. Under the California Administrative Code, all multi-family dwellings that are in noise impact areas must undergo acoustical analysis and must contain structural or design features that would mitigate excessive noise levels. All other residential uses must comply with the Kern County General Plan Noise Element. Through discretionary permit processing, residential uses are evaluated during the CEQA review.

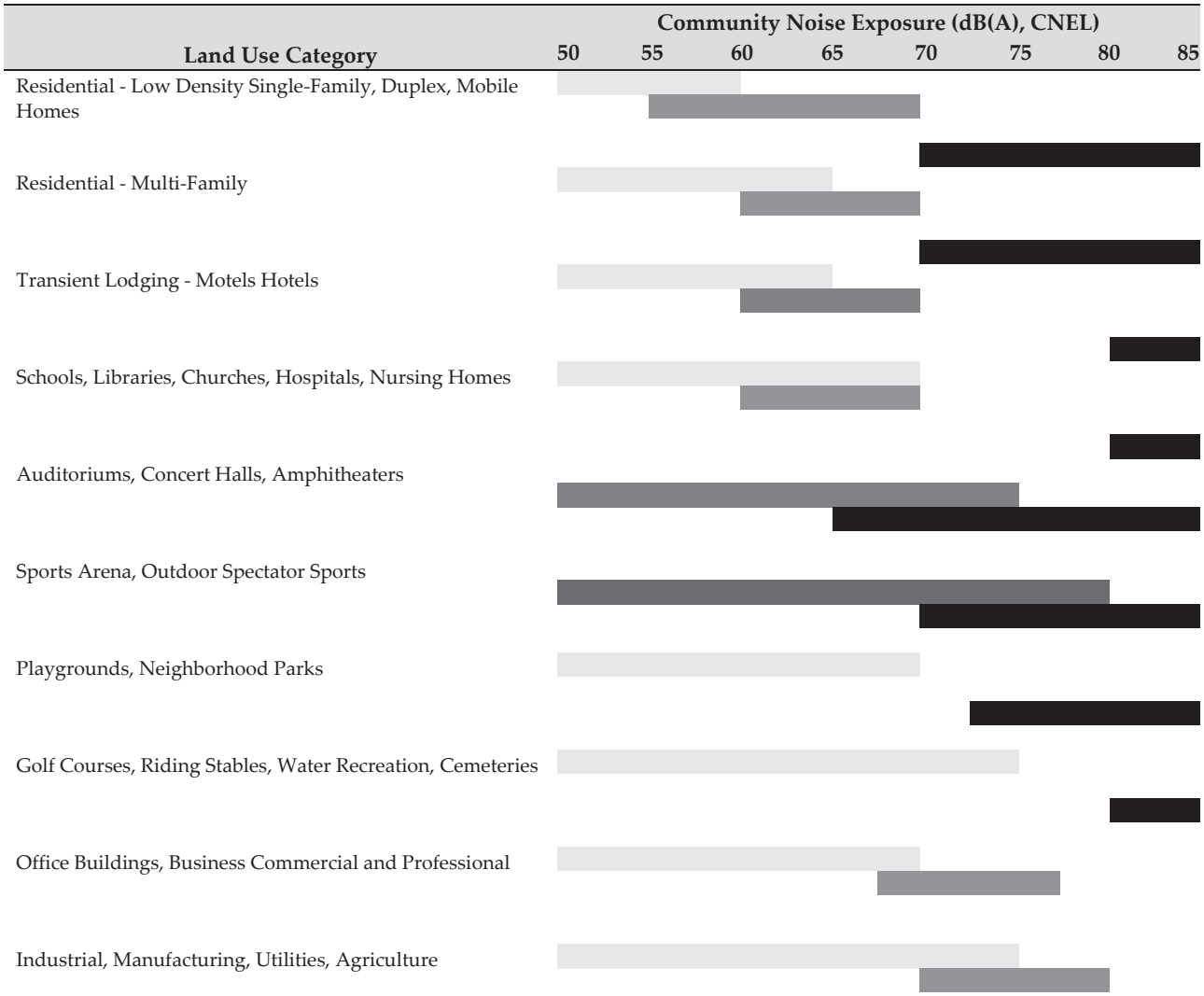
California Department of Health Services Land Use Guidelines for Community Noise Exposure

The state has published guidance for locating land uses in areas compatible with the existing noise environment. These guidelines are shown in **Table 4.13-8, Land Use Compatibility for Community Noise Environments**. For example, it would normally be acceptable for a single-family residence to be located in an area with an existing noise level of 60 dB(A) CNEL or less.

California Airport Noise Standards

The State of California has the authority to establish regulations requiring airports to address aircraft noise impacts on land uses in their vicinities. The State of California's Airport Noise Standards, found in Title 21 of the California Code of Regulations section 5000 *et seq.* identify a noise exposure level of CNEL 65 dB as the noise impact boundary around airports. Within the noise impact boundary, airport proprietors are required to ensure that all land uses are compatible with the aircraft noise environment or the airport proprietor must secure a variance from the California Department of Transportation.

Table 4.13-8
Land Use Compatibility for Community Noise Environments



Normally Acceptable - Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Conditionally Acceptable - New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply system or air conditionally will normally suffice.

Normally Unacceptable - New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable - New construction or development should generally not be undertaken.

Source: California Office of Noise Control, Department of Health Services.

California Streets and Highways Code and California Department of Transportation (Caltrans) Noise Abatement Criteria

The State of California establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the state passby standard is consistent with the federal limit of 80 dB. The state passby standard for light trucks and passenger cars (less than 4.5 tons gross vehicle rating) is also 80 dB at 15 meters from the centerline. For new roadway projects, Caltrans employs the Noise Abatement Criteria, discussed above in connection with FHWA.

Section 216 of the California Streets and Highways Code relates to the noise effects of a proposed freeway project on public and private elementary and secondary schools. Under this code, a noise impact occurs if, as a result of a proposed freeway project, noise levels exceed 52 dB(A) Leq in the interior of public or private elementary or secondary classrooms, libraries, multipurpose rooms, or spaces. If a project results in a noise impact under this code, noise abatement must be provided to reduce classroom noise to a level that is at or below 52 dB(A) Leq. If the noise levels generated from freeway and non-freeway sources exceed 52 dB(A) Leq prior to the construction of the proposed freeway project, then noise abatement must be provided to reduce the noise to the level that existed prior to construction of the project.

California Noise Insulation Standards

The California Noise Insulation Standards found in Title 24 of the California Code of Regulations set requirements for new multi-family residential units, hotels, and motels that may be subject to relatively high levels of transportation-related noise. For exterior noise, the noise insulation standard is DNL 45 dB in any habitable room and requires an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than DNL 60 dB.

State Vibration Regulations

There are no adopted state policies or standards for groundborne vibration. However, Caltrans recommends that extreme care be taken when sustained pile driving occurs within 7.5 meters (25 feet) of any building, and 15 to 30 meters (50 to 100 feet) of a historic building or a building in poor condition.

4.13.4.3 Local

General Plans

To identify, appraise, and remedy noise problems in local communities, the County and each city in the County is required to adopt a noise element as part of its General Plan. Each noise element is required to

analyze and quantify current and projected noise levels associated with local noise sources, including, but not limited to, highways and freeways, primary arterials and major local streets, rail operations, air traffic associated with the airports, local industrial plants, and other ground stationary sources that contribute to the community noise environment. Beyond statutory requirements, local jurisdictions are free to adopt their own goals and policies in their noise elements, although most jurisdictions have chosen to adopt noise/land use compatibility guidelines that are similar to those recommended by the state. The overlapping DNL ranges indicate that local conditions (existing noise levels and community attitudes toward dominant noise sources) should be considered in evaluating land use compatibility at specific locations.

In addition to regulating noise through noise element policies, local jurisdictions regulate noise through the enforcement of local ordinance standards. These standards generally relate to noisy activities (e.g., use of loudspeakers and construction) and stationary noise sources and facilities (e.g., air conditioning units and industrial activities).

In terms of airport noise, some of the actions that airport proprietors have been allowed to take to address local community noise concerns include runway use and flight routing changes, aircraft operational procedure changes, and engine run-up restrictions. These actions generally are subject to approval by the FAA, which has the authority and responsibility to control aircraft noise sources, implement and enforce flight operational procedures, and manage the air traffic control system. Airport proprietors may also consider limitations on airport use, but such restrictions can be overridden by the Federal Aviation Administration if it is determined that they unjustly discriminate against any user, impede the federal interest in safety and management of the air navigation system, or unreasonably interfere with interstate commerce.

The general plans of the two largest jurisdictions that are anticipated to receive the most impact from the RTP (Kern County and the City of Bakersfield) are discussed below. Other jurisdictions in the County have similar policies.

Kern County General Plan

Applicable policies from the Kern County General Plan include:

- Require that industrial uses provide design features such as screen walls, landscaping, increased height and/or setbacks, and lighting restrictions between the boundaries of adjacent residential land use designations so as to reduce impacts on residences due to light, noise, sound, and vibration.

- Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.
- Require noise levels criteria applied to all categories of land uses to be consistent with the recommendations of the California Division of Occupational Safety and Health (DOSH).
- Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise.
- Utilize good land use planning principles to reduce conflicts related to noise emissions.
- Prohibit new noise-sensitive land uses in noise-impacted areas unless effective mitigation measures are incorporated into the project design. Such mitigation shall be designed to reduce noise to the following levels:
  - 65 dB Ldn (day night average noise level) or less in outdoor activity areas.
  - 45 dB or less within interior living spaces or other noise sensitive interior spaces.
- Ensure that new development in the vicinity of airports will be compatible with existing and projected airport noise levels as set forth in the Airport Land Use Compatibility Plan (ALUCP).
- Employ the best available methods of noise control.
- Enforce the state Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code concerning the construction of new multiple-occupancy dwellings such as hotels, apartments, and condominiums.

Bakersfield General Plan

Applicable policies from the Bakersfield General Plan include:

- Provide for the mitigation of significant noise impacts on adjacent sensitive uses from transportation corridor improvements.
- Review and evaluate the land use designations of the plan on agreement of a final route alignment of the Route 178/58 Freeway, and any other future freeways, to ensure appropriate land use relationships, including:
  - Adequate setbacks, buffers, and/or restrictions on residential density to prevent noise impacts.

- Design transportation improvements to minimize noise impacts on adjacent uses.
- Identify noise-impact areas exposed to existing or projected noise levels exceeding 65 dB CNEL (exterior) or the performance standards described in **Table 4.13-9** (taken from Bakersfield General Plan below). The noise exposure contour maps on file at the City of Bakersfield and County of Kern indicate areas where existing and projected noise exposures exceed 65 dB CNEL.
- Prohibit new noise-sensitive land uses in noise-impacted areas unless effective mitigation measures are incorporated into project design to reduce noise to acceptable levels.
- Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.
- Require noise level criteria applied to land uses other than residential or other noise-sensitive uses to be consistent with the recommendations of the California Office of Noise Control.
- Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise.
- Encourage interjurisdictional coordination and cooperation with regard to noise impact issues.
- Establish threshold standards for the determination of the existence of cumulative noise impacts that are significant and will, therefore, require mitigation to achieve acceptable noise standards that do not exceed the standards contained in this element.

Table 4.13-9
City of Bakersfield General Plan, Noise Level Performance Standards*
Exterior Noise Level Standards

Category	Cumulative Number of Minutes in Any 1-Hour Period	Daytime 7:00 AM to 10:00 PM	Nighttime 10:00 PM to 7:00 AM
1	30	55	50
2	15	60	55
3	5	65	60
4	1	70	65
5	0	75	70

Source: Bakersfield General Plan, Noise Element
**Each of the noise level standards specified in this table shall be reduced by 5 dB(A) for pure tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards should be applied at a residential or other noise-sensitive land use and not on the property of a noise generating land use.*

Kern County Airport Land Use Compatibility Plan (ALUCP)

The ALUCP was adopted by Kern County in 2011 to satisfy the state's aviation law requirements. The ALUCP provides for the orderly growth of each public use airport over a 20-year span and minimizes land use conflicts over height and noise with the surrounding area. The ALUCP may include building height restrictions, specify allowable land uses, and determine building standards that all airports within the County are required to comply with the measures set forth in the ALUCP. In addition to the ALUCP, major Airports within the County have established master plans that will guide future development and operations at these airport sites.

Inclusion of land use compatibility criteria for the area surrounding military installations was optional in state airport law until the passage of SB 1468 (Knight) in 2002. A portion of this bill now requires the ALUCP to conform to the Air Installation Compatible Use Zones (AICUZ) study required by the Department of Defense. The primary purpose of the AICUZ study is to protect public safety and health, encourage appropriate development in the vicinity of military airfields, and to protect the taxpayer's investment in national defense. Staff determined that amending the ALUCP to include the eastern Kern military installations (add China Lake Naval Air Weapons Station, Edwards Air Force Base, and the Joint Service Restricted R-2508 Complex) would address the provisions of SB 1468 as well as support other efforts in the County.

Local Vibration Regulations

Many jurisdictions do not regulate vibration. But some local jurisdictions regulate vibration through the enforcement of local ordinance standards. These standards generally relate to preventing perceptible vibration from being generated past the property line of the source location.

4.13.5 ENVIRONMENTAL IMPACTS

4.13.5.1 Thresholds of Significance

For the purposes of this PEIR, Kern COG has determined that adoption and/or implementation of the 2026 RTP would result in significant impacts related to noise and vibration, if any of the following could occur:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Generation of excessive groundborne vibration or groundborne noise levels.

- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

4.13.5.2 Methodology

The analysis assesses the potential impacts from noise and vibration that could result from implementation of the proposed 2026 RTP. For each potential impact, implementation of the proposed 2026 RTP is analyzed at the regional level.

Impacts are assessed in terms of both land use and transportation impacts. By 2046, implementation of the proposed 2026 RTP would result in a land use pattern and transportation network that is different from existing conditions.

Since noise is a highly localized impact, specific and detailed analyses are most appropriate at the individual improvement project level. Subsequent project-specific EIRs will be required to further analyze the transportation improvements proposed by the Project to determine the magnitude of noise and vibration impacts, and to identify appropriate potential mitigations for each individual improvement project.

For purposes of this EIR, an increase of 3 dB(A) is considered a significant impact. In general, an increase of 3 dB(A) is perceptible to the average human ear. In order to assess where noise levels could increase by 3 dB(A) or more, the Kern COG model was used to identify roadway segments where one or more of the following conditions could occur: 1) truck (medium and heavy-duty) volume would increase 130 percent from existing conditions; and/or 2) truck (medium and heavy-duty) volume would increase by 100 percent with an increase in other vehicles of 50 percent and/or 3) total traffic volume would increase by 100 percent.

Determination of Significance

The methodology for determining the significance of noise and vibration impacts compares the existing conditions to the conditions in 2049 under the 2026 RTP, as required by *State CEQA Guidelines* Section 15126.2(a). Changes in noise levels in the region were evaluated using the criteria set forth by the California Department of Conservation (CDC) and the *State CEQA Guidelines*.

The analysis is based on an assessment of growth (population, housing, and employment) projected for the region by 2049, and an assessment of how that growth, combined with proposed transportation improvements, could impact noise and vibration. Individual project sites within Kern County were not

physically surveyed, rather this is a programmatic analysis based on a brief description of the types of noise and vibration issues found within the region.

Roadway transportation projects consist of freeway, high-occupancy vehicle (HOV) lanes, auxiliary, arterial/expressway miles, collector and local streets, Class I bicycle and pedestrian facilities, and Class II bicycle lanes. Different project types will have different impacts on or be differently impacted by, noise and vibration.

The evaluation of noise and vibration impacts in this section assumes that construction and development in Kern County will adhere to applicable federal, state, and local regulations, and will conform to the applicable industry standards, as appropriate for individual projects.

Approach to Mitigation

As discussed in **Chapter 1.0, Introduction**, Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

4.13.5.3 Impacts and Mitigation Measures

Impact NOISE-1 **Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.**

Regional and Transit Priority Areas Impacts

Construction

Construction activities are typically subject to local ordinances that stipulate hours of construction and, in some cases, maximum noise levels.

Grading and construction activities associated with the proposed 2026 RTP transportation projects could intermittently and temporarily generate noise levels above ambient background levels, including noise levels above those permissible by local general plans, noise ordinances, and other applicable standards. Noise levels in the immediate vicinity of the construction sites, including adjacent sensitive receptors, would increase substantially, sometimes for extended durations. **Table 4.13-10, Sensitive Receptors within 0.25 mile of Proposed 2026 RTP Transportation Projects,** shows the number of existing sensitive receptors located within 0.25 miles of transportation projects anticipated to occur under the No Project condition and the 2026 RTP.

Table 4.13-10
Sensitive Receptors within 0.25 Mile of Proposed 2026 RTP Projects

Sensitive Receptors	No Project	2026 RTP
Schools	0	3
Hospitals	0	21
Residential (households)	1,006	23,642

Source: Kern COG GIS 2026

As shown in **Table 4.13-10,** a number of noise-sensitive land uses are located near 2026 RTP transportation projects, including hospitals, schools, and residences. Generally, construction, ground clearing, grading, structural, and other noise-generating activities would occur at project sites between the hours designated in accordance with the applicable jurisdiction's Municipal Code Noise Ordinance and any additional applicable plans or standards.

Many RTP transportation projects include the development of new infrastructure, such as bridges, transit facilities, and highways, or modifications to existing infrastructure, including the widening of roads, grade crossings, and maintenance and service alterations. Due to its focus on infill development, the 2026 RTP has the potential to impact substantially more urban uses, particularly residences, as compared to the No Project scenario.

Table 4.13-11, Types and Duration of Construction Noise Generated from Transportation Projects, presents the different types of freeway and transit which typically emit noise during construction and the relative duration of construction noise created by project type.

Table 4.13-12, Outdoor Construction Noise Levels, shows typical noise from construction of development projects; the variety and duration of development projects are not easily categorized by duration.

Impacts to sensitive receptors resulting from the construction of transportation and development projects would depend on several factors, such as the type of project proposed, adjacent land use, and duration of proposed construction activities.

Table 4.13-11
Types and Duration of Construction Noise Generated from Transportation Projects

	Noise Levels			Duration		
Project Type	**High**	**Medium**	**Low**	**Extended**	**Medium**	**Short**
FREEWAYS AND ARTERIALS						
Arterials/Interchanges	X			X		
Freeway – Mixed-flow	X			X		
HOV Ramp	X			X		
Reconfigure Ramp	X			X		
Replace Overcrossing	X			X		
Capacity Enhancement Facilities	X			X		
Road Widening	X			X		
Grade Separation	X				X	
Auxiliary Lanes		X			X	
Interchange Upgrade		X			X	
Capacity Enhanced Arterial		X				X
Interchange Improvement		X			X	
Park & Ride		X				X
Roadway Operations & Maintenance			X			X
Smart Street Improvements			X			X
Transit						
Passenger Rail	X			X		
High Speed Rail	X			X		

Project Type	Noise Levels			Duration		
	High	Medium	Low	Extended	Medium	Short
Inter-city Rail	X			X		
Rail Improvement	X			X		
Rail Yard Expansion	X			X		

Source: Kern COG/Impact Sciences, 2026
Note:
Project-specific impacts depend on location and location of sensitive receptors. This table provides a general assessment of noise-generated by different types of impacts irrespective of the relationship to sensitive receptors.
*Projects included in the "high" category are those that use the nosiest equipment (i.e., impact devices), those in the medium range use a range of construction equipment that generates engine noise operating simultaneously but no impact devices, projects in the low range are comprised of minor improvements that would not require either multiple pieces of equipment or impact devices (see **Table 4.13-4** for general equipment noise ranges).*
Extended duration refers to multi-year projects, medium refers to projects that extend over several months and possibly 1 to years and short refers to a few days to a few months.

Table 4.13-12
Outdoor Construction Noise Levels

Construction Phase	Noise Level at 50 Feet (dB(A), Leq)	Noise Level at 50 Feet with Mufflers (dB(A), Leq)
Ground Clearing	84	82
Grading/Excavation	89	86
Foundations	78	77
Structural	85	83
Finishing	89	86

Source:
U.S. EPA, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, PB 206717, 1971.

Construction noise is expected in urban areas. It generally results in substantial increases in noise adjacent to where construction is occurring, but this activity is generally intermittent, of finite duration, and regulated by existing ordinances. Determination of the significance of construction noise may vary by jurisdiction. For purposes of this PEIR, it is considered potentially significant.

Operation

During long-term operation of projects, noise impacts from new highways, highway widening, new HOV lanes, new transit corridors, increased frequency along existing transit corridors, and added freight service (including additional freight tracks) could generate noise levels in excess of standards established in the local general plan or noise ordinance.

Caltrans has identified noise abatement criteria (see **Table 4.13-6** above) where sensitive receptors are located adjacent to freeways and collectors/arterials, and, as such, any increase in noise levels adjacent to these facilities would be subject to abatement measures. Most heavily traveled roadways meet this criterion. In general, an increase of 3 dB(A) is perceptible to the average human ear. Noise levels could increase by 3 dB(A) or more, the locations where one or more of the following criteria are met:

1. Truck (medium and heavy-duty) volume is anticipated to increase 130 percent from existing conditions.

2. Truck (medium and heavy-duty) volume is anticipated to increase by 100 percent with an increase in other vehicles of 50 percent.

3. Total traffic volume would increase by 100 percent.

Urban areas would be significantly impacted when compared to existing conditions as a result of increasing traffic in the region. However, the Plan would result in result in fewer impacted segments as compared to the No Project Alternative. With the focus on increased development in urban areas (TPAs) increased congestion and associated noise is expected in urban areas. However, the No Project alternative could significantly increase traffic-related noise on routes that are currently low volume. Likely resulting in more segments being impacted than under the Plan.

Some transportation and development projects would be sufficiently small that they would not require environmental review, and some projects may receive streamlined environmental review as a result of SB 375, SB 743 or other legislation. For projects that would not receive project-specific review it is anticipated that they would comply with local general plans and ordinances designed to reduce potential impacts. Projects with identified long-term operational impacts would be subject to environmental review before construction activities begin.

Increases in noise levels are expected adjacent to transportation facilities including highways, freeways, rail transit, toll-ways, truck-climbing lanes, freeway interchanges, passenger and high-speed rail projects and freight rail project. For example, the Tehachapi Rail Improvement Project (which would increase the frequency of 8,000-foot trains through the Tehachapi Trade Corridor), found there would be a 0.1 to 1.0 dB(A) increase in noise levels for nearby receptors. These projects are subject to rigorous federal and local environmental review and would be required to abate increases in noise levels in accordance with applicable criteria.

In general, other than the associated mobile-source noise levels on local roadways (discussed above), operation of most urban land uses results in relatively minor increases in noise. Local schools and

recreational facilities can sometimes receive noise complaints, as well as some open-air bars and restaurants. Industrial uses can generate noticeable increases in noise, but such uses are generally located in zones that are buffered from sensitive uses. Many development projects, especially larger projects, would receive project-specific environmental review and would be required to adhere to the local general plans and noise ordinances, as part of the design and approval process for each facility. Nonetheless, due to the potential for increases in noise levels, operational impacts would be significant.

Given the potential construction and operational noise impacts from implementation of the 2026 RTP, mitigation is required. **Mitigation Measures MM NOISE-1** and **MM NOISE-2** below would mitigate these impacts.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

MM NOISE-1: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to assess and mitigate to the extent feasible short- and long-term noise impacts in accordance with applicable regulations and to implement site-specific noise reduction measures, including the following as applicable:

- Equipment and trucks used for project construction can and should use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds, wherever feasible).

- Tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction can and should be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust should be used; this muffler can lower noise levels from the exhaust by up to about 10 dB(A). External jackets on the tools themselves should be used, if such jackets are commercially available and this could achieve a reduction of 5 dB(A). Quieter procedures should be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.

- Stationary noise sources can and should be located as far from adjacent sensitive receptors as possible and they should be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the Lead Agency (or other appropriate government agency) to provide equivalent noise reduction.

- A procedure and phone numbers for notifying the Lead Agency staff and local Police Department; (during regular construction hours and off-hours).

- A sign posted on-site pertaining with permitted construction days and hours and complaint procedures and who to notify in the event of a problem. The sign should also include a listing of both the Lead Agency and construction contractor's telephone numbers (during regular construction hours and off-hours).

- The designation of an on-site construction complaint and enforcement manager for the project.

- Notification of neighbors and occupants within 300 feet of the project construction area at least 30 days in advance of extreme noise generating activities about the estimated duration of the activity.

- A preconstruction meeting can and should be held with the job inspectors and the general contractor/on-site project manager to confirm that noise measures and practices (including construction hours, neighborhood notification, posted signs, etc.) are completed.

- Use of portable barriers in the vicinity of sensitive receptors during construction.

- Projects that require pile driving or other construction noise above 90 dB(A) in proximity to sensitive receptors, should reduce potential pier drilling, pile driving and/or other extreme noise generating construction impacts greater than 90 dB(A), a set of site-specific noise attenuation measures should be completed under the supervision of a qualified acoustical consultant.

- Implement noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings (for instance by the use of sound blankets) and implement if such measures are feasible and would noticeably reduce noise impacts.

- Monitor the effectiveness of noise attenuation measures by taking noise measurements.

- Maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other new noise-generating facilities.

- Construct sound reducing barriers between noise sources and noise-sensitive land uses.

MM NOISE 2: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to assess and mitigate to the extent feasible short- and long-term noise impacts in accordance with applicable regulations and to implement site-specific noise reduction measures, including the following as applicable: Such measures include, but are not limited to, the following:

- Stationary noise sources can and should be located as far from adjacent sensitive receptors as possible and they should be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the Lead Agency (or other appropriate government agency) to provide equivalent noise reduction.

- Implement, to the extent feasible and practicable, speed limits and limits on hours of operation of rail and transit systems, where such limits may reduce noise impacts.

- Use techniques such as grade separation, buffer zones, landscaped berms, dense plantings, sound walls, reduced-noise paving materials, and traffic calming measures.

- Maximize the distance of new route alignments from sensitive receptors.

- Locate transit-related passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations away from sensitive receptors to the maximum extent feasible.

- Use land use measures such as zoning, site design, and buffers to ensure that future development is noise compatible with adjacent transportation facilities and land uses.

Level of Significance After Mitigation

Mitigation Measures MM NOISE-1 and **MM NOISE-2** would reduce potential noise impacts. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts are considered significant and unavoidable.

Impact NOISE-2 Generation of excessive groundborne vibration or groundborne noise levels.

Regional and Transit Priority Areas Impacts

Noise and vibration impacts from the construction and operation of transportation projects and development of the surrounding area could generate excessive groundborne vibration and noise levels. Construction-related vibration has the potential to damage structures, cause cosmetic damage (e.g., crack plaster), or disrupt the operation of vibration-sensitive equipment. Vibration can also be a source of annoyance to individuals who live or work close to vibration-generating activities. Heavy construction operations can cause substantial vibration in close proximity to the source. Typical vibration levels from construction equipment are shown in **Table 4.13-13**, **Vibration Source Levels for Construction Equipment**.

Table 4.13-13
Vibration Source Levels for Construction Equipment

Equipment	Approximate Vdb			
	25 Feet	50 Feet	75 Feet	100 Feet
Pile Driver (Impact)	112	106	102	100
Pile Driver (Sonic)	105	96	91	87
Caisson Drilled Piles	87	81	77	75
Large Bulldozer	87	81	77	75
Loaded Trucks	86	80	76	74
Jackhammer	79	73	69	67
Small Bulldozer	58	52	48	46

Source: FTA, Transit Noise and Vibration Impact Assessment, May 2006.

Use of pile drivers, jackhammers, and other high-power or vibratory tools, compactors, and tracked equipment could also generate substantial vibration in the immediate vicinity, typically within 15 feet of the equipment. By use of administrative controls, such as scheduling, typical construction activities would

be restricted to hours with the least potential to affect nearby properties. Thus, perceptible vibration can be kept to a minimum and not result in human annoyance or structural damage.

Pile driving has the potential to generate the highest vibration levels and is the primary concern for structural damage when it occurs within 50 feet of structures. Vibration levels generated by pile driving activities would vary depending on project conditions, such as soil conditions, construction methods, and equipment used. Pile driving activities may result in short-term annoyance. Depending on the proximity of existing structures to each construction site, the structural soundness of the affected buildings, and the methods of construction used, vibration levels caused by pile driving or other foundation work with a substantial impact component such as blasting, rock or caisson drilling, and site excavation or compaction could be high enough to be perceptible within 100 feet and may be high enough to damage existing structures within 50 feet.

Light industrial and commercial operations have, on occasion, been known to use equipment or processes in the manufacture and distribution of materials that have the potential to generate vibration. However, vibrations found to be excessive for human exposure that are the result of a manufacturing process or industrial machinery are generally addressed from an occupational health and safety perspective. The residual vibrations from industrial processes or machinery are typically of such low amplitude that they quickly dissipate into the surrounding soil and are rarely perceivable at the surrounding land uses.

Distribution of materials to and from industrial and commercial land uses can have the potential to generate more substantial levels of vibration than that of the mechanical equipment. Heavy trucks used for the delivery and distribution of materials to and from industrial and commercial sites generally operate at very low speeds while on the industrial or commercial site. Therefore, the vibration induced by heavy truck traffic at industrial or commercial land uses is not anticipated to be perceptible at distances greater than 25 feet (typical distance from roadway centerline to edge of roadway right-of-way for a single-lane road).

The Plan anticipates a moderate increase in population in TPAs, potentially increasing the number of people at sensitive receptor locations in closer proximity to arterials and freeways, as well as higher traffic volumes and congestion. This may cause increased levels of noise and vibration within and in close proximity to the TPAs.

Rail/Transit

The 2026 RTP includes investments in freight rail. This plan lays out an investment strategy of incremental speed and capacity improvements to existing Amtrak and freight service to provide interim high-speed service within the County, while building towards an eventual connection to the statewide high-speed

network. A series of grade separations, grade closures, track expansions, station improvements, earthen works, and other improvements will allow more and faster service in the San Joaquin Valley Corridor.

Improvements, additions, and extensions of transit corridors, specifically associated with bus rapid transit, passenger rail, and high-speed rail activity, would expose existing and future noise-sensitive land uses to high levels of noise generated by high-volume transit corridors. Noise levels would increase along bus and rail corridors where speeds are increased, trains are double-tracked, and/or the number of trains increases as a result of physical and/or programmatic changes.

Noise would also increase adjacent to new bus and rail corridors where there were previously no buses or trains. Increased noise levels would only be relevant where adjacent sensitive receivers are located along existing or proposed corridors. Crossings also use audible warning signals that could impact nearby residents. Increases in bus and rail traffic could also lead to more horns and/or whistles at crossings near residential areas, which is a source of annoyance, especially at night or in early morning or evening.

Impacts from exposure to excessive groundborne vibration as a result of the 2026 RTP are considered significant at the regional level for **Impact NOISE-2**. Mitigation is required. **Mitigation Measure MM NOISE-1** and **MM NOISE-2** also address vibration and would reduce these impacts.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measure

See **Mitigation Measures MM NOISE-1** and **MM NOISE-2** above.

Level of Significance After Mitigation

Mitigation Measures MM NOISE-1 and **MM NOISE-2** would reduce potential groundborne vibration impacts. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts are considered significant and unavoidable.

Impact NOISE-3 **For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a**

public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

Regional and Transit Priority Areas Impacts

Some land use projects under the 2026 RTP could be located within an area covered by an airport land use plan or in the vicinity of a private airstrip. However, existing plans and regulations, including the Kern County Comprehensive Airport Land Use Plan (ALUP) and Federal Aviation Administration regulation of airports and airstrips, would minimize noise exposure for people residing or working in the project area. Therefore, implementation of the 2026 RTP would not expose people residing or working in the project area to excessive noise levels if an individual transportation or development project were located within an area covered by the ALUP or in the vicinity of a private airstrip.

Level of Significance Before Mitigation

Less than significant at the regional and TPA levels.

Mitigation Measures

None required.

Level of Significance After Mitigation

The noise impact to people residing or working in a project area located within an area covered by an ALUP or in the vicinity of a private airship would be less than significant.

4.13.6 CUMULATIVE IMPACTS

The 2026 RTP includes transportation projects and land use strategies that would shape the region over the next 24 years. These changes include the extension of transportation and related infrastructure that would result in new noise sources as well as increased noise from some existing sources. Many of the transportation projects could facilitate access not only within the County but also to areas outside the region. In addition, Plan projects will connect with projects outside the region, facilitating and potentially inducing the construction of transportation infrastructure outside the region. This additional infrastructure outside the County could lead to development outside the region. Construction noise and vibration impacts are generally site-specific, although to the extent that the 2026 RTP would induce growth outside the region, it could result in construction noise outside the region. The Plan could facilitate movement in other regions, which would increase noise levels outside the County. The proposed 2026 RTP encompasses all development (both transportation and land use changes) that would occur in the region through 2049. The

impacts of anticipated development are discussed fully above; the 2026 RTP could contribute to a cumulatively considerable increase in noise and vibration outside the region as a result of increased activity resulting from the Plan (increased travel outside the region and/or induced growth outside the region). This activity would include aircraft overflights, railroads, as well as freeway, arterial, and transit noise. Implementation of **Mitigation Measures MM NOISE-1** and **MM NOISE-2** would reduce impacts related to noise and vibration levels. Because this document evaluates impacts at a programmatic level, all project circumstances are not foreseeable and therefore impacts from noise and vibration are considered significant and unavoidable, and could add to such impacts from development resulting from RTPs for regions outside Kern County.

4.14 POPULATION, HOUSING, & EMPLOYMENT

This section describes the current population, housing, and employment for Kern County and identifies the potential impacts of the 2026 RTP on these three factors. In addition, this PEIR provides regional-scale mitigation measures to reduce identified impacts as appropriate and feasible. Residual impacts after mitigation are also identified. The data used in this section represents Kern COG's most reliable available data for population, housing, and employment information.

4.14.1 ENVIRONMENTAL SETTING

4.14.1.1 Existing Population, Housing, and Employment

Population

As of 2025, the population in Kern County was estimated to be 923,961 persons.[1] Between 2022 and 2025, the population of Kern County grew by 13,217 people, or 1.4 percent.[2,3] Kern has recently surpassed San Francisco and Ventura counties in total population and is now the eleventh most populous county in the state.[4]

The 2026 RTP forecasts that between 2026 and 2049, population growth will continue but at a reduced rate, with a total increase of 10.1 percent. That is an average rate of 0.4 percent per year, down from the historic growth rate of 2.1 percent since 1980.[5] The approximate 50 percent decrease in the growth rate translates into a dramatic 51 percent reduction in population growth compared to prior RTP assumptions.[6]

Over the next 23 years, growth in the Kern region could vary widely based on several factors, including spillover from Southern California's urban areas, water availability, employment opportunities, housing costs, interest rates, high-speed rail, air quality regulations, and land availability. The combined general

1 California Department of Finance (DOF), *E-5 County/State Population and Housing Estimates, 2020-2025.* Available online at: https://dof.ca.gov/Forecasting/Demographics/Estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2025/, accessed on April 29, 2026.

2 Ibid.

3 California Department of Finance (DOF), *E-5 County/State Population and Housing Estimates, 2020-2025.* Available online at: https://dof.ca.gov/Forecasting/Demographics/Estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2025/, accessed on April 29, 2026.

4 Ibid.

5 Kern COG. 2022. *2026 RTP, Table 3-1: Recent Population Forecast Comparison*. p. 3-2.

6 Kern COG 2026

plans within Kern County designate sufficient land to absorb growth at twice the rate forecasted by 2049, assuming water and urban services are available.

In the near term, natural increases will continue to help fuel population growth as more people are born than die. At the same time, a huge "baby boomer" population group is retiring and has set the stage for the conversion of existing vacation homes in the mountain areas to primary residences. The increase in telecommuting workers will also allow more remote locations to become primary residences.

Employment

According to the California Economic Development Department, Kern has added an average of 4,310 jobs per year over the past 37 years. The largest job gains since 1990 were in the agriculture (32,700) and government/education sector (18,700), while the largest losses were observed in mining and natural resources and construction (-3,500). The top industries in the County for employment are farm work, transportation/trade, and private education and health services, consistent with historic data.[7] The unemployment rate in Kern County was 8.3 percent in December 2025, down from a revised 7 percent in November 2025, and above the 2024 estimate of 8.2 percent. This compares with an unadjusted unemployment rate of 5.1 percent for California and 4.1 percent for the nation during the same period.[8]

Housing

Kern County had approximately 301,009 housing units by 2020.[9] Population growth increased between 2024 and 2025 by 4,539 persons, and the average persons per household decreased from 3.17 in 2019 to 3.12 in 2024.[10]

Following the national trend, the percentage of housing considered crowded (1.5 or more occupants per room) decreased in the Kern region from 2010 to 2016, as the recession subsided. Approximately 13.5 percent of renter-occupied units are overcrowded, and in unincorporated areas, 16.5 percent of renter-occupied units are overcrowded.[11] Of the largest metropolitan areas, Kern still maintains the most affordable housing stock in California; however, high unemployment and relatively low-paying jobs

---

7 California Employment Development Department. Labor Market Information, Bakersfield MSA, Industry Employment & Labor Information – by Annual Average *January 2026 Benchmark*. 2026. Available online at: https://www.labormarketinfo.edd.ca.gov/file/lfmonth/bake$pds.pdf.

8 Ibid.

9 Kern COG. *2026 RTP.*

10 US Census. American FactFinder Community Facts- Kern County. 2020. Available online at: https://www.census.gov/quickfacts/kerncountycalifornia.

11 County of Kern, *2024-2031 Housing Element Update-Volume 1,* May 2025*.* Available online at: https://psbweb.kerncounty.com/planning/pdfs/he/KCHE_2024-2031_Vol1_May2025.pdf, accessed April 29, 2026.

appear to be fueling an increase in overcrowded conditions. It is estimated that in 2024, 2.2 percent of the population of Kern County, or 20,366 people, resided in group quarters. Group quarters population have declined since 2020, largely due to the closure of prison facilities. It is expected that the population living in group quarters will continue to decline over the lifetime of the plan and is estimated to be approximately one percent in 2049.[12]

Housing Preference

Housing trends and housing preferences in the region were evaluated by a number of sources to inform the 2026 RTP and SCS scenarios. The 2025 Community Survey, administered by Kern COG, on this concept finds (based on consumer preference data and economic trends) that there is a demand for apartments, townhomes, and small-lot single-family homes in walkable neighborhoods that will continue grow in the Kern COG region.[13] **Table 4.14-1, Housing Option Preferences**, presents the results of the Kern COG 2025 Community Survey.

Table 4.14-1
Housing Option Preferences

Housing Type	Year	Definitely Yes (percent of survey group)	Probably Yes (percent of survey group)	No (percent of survey group)	Don't Know/N/A (percent of survey group)
Single Family Home with a small yard	2025	31.9	40.8	20.1	7.2
	2023	33.0	40.4	21.3	5.4
	2021	28.8	39.4	24.6	7.2
Single family home with a large yard	2025	54.0	23.0	17.5	5.5
	2023	57.2	24.2	14.1	4.5
	2021	58.6	23.9	12.1	5.4
Townhome or Condominium	2025	11.9	31.5	46.7	9.9
	2023	12.6	27.5	51.3	8.6
	2021	11.7	28.1	52.1	8.0
A building with offices on the first floor and condominiums on upper floors	2025	11.0	24.5	55.6	8.9
	2023	7.8	19.0	64.0	9.1
	2021	7.5	19.2	63.8	9.5

12 Kern COG 2026, *Chapter 3 Planning Assumptions, Table 3-2 Growth Trends for Kern County and Selected Communities*.

13 Godbe Research, 2025. Available online at: https://www.kerncog.org/wp-content/uploads/2025/10/community_survey_2025.pdf

Housing Type	Year	Definitely Yes (percent of survey group)	Probably Yes (percent of survey group)	No (percent of survey group)	Don't Know/N/A (percent of survey group)
An apartment	2025	15.0	19.0	59.1	7.0
	2023	10.0	19.1	66.0	4.9
	2021	8.8	21.3	63.3	6.6

Source: Godbe Research, 2025. Available online at: https://www.kerncog.org/wp-content/uploads/2025/10/community_survey_2025.pdf

Sub Regional Forecast Distributions

Over the past decade, growth has concentrated in Metropolitan Bakersfield and the communities of Delano, Wasco, Ridgecrest, California City, Arvin, Tehachapi, and the unincorporated communities around Tehachapi, Rosamond, and Frazier Park. In addition, strategic growth occurred at Kern's southern gateway to Los Angeles County involving the Tejon Ranch Commerce Center and related development that supports transportation, logistics, commerce, tourism, and other sustainable uses important to the region's economy.

In Metropolitan Bakersfield, approximately 75 percent of new housing has been built on the west side, with roughly 35 percent north of the Kern River and another 40 percent in the southwest. Recent infrastructure investment, including the completion of a new water delivery system, has supported a resumption of development in the eastern portion of Greater Bakersfield as well.

Looking ahead to the post-2035 period, significant growth is anticipated in Kern's southern gateway region, particularly through large-scale, master-planned development projects tied to the Tejon Ranch. The Tejon Mountain Village Specific Plan, located along the east side of Interstate 5 near the Lebec Road interchange, approximately 35 miles south of Bakersfield, would introduce a mixed-use community with 3,450 residences and up to 160,000 square feet of commercial development. The Grapevine project, a smart growth master-planned community with approximately 12,000 residential units and commercial infrastructure, is expected to begin construction during the planning period. These developments are designed with a strong jobs-housing balance, supported by employment opportunities at the nearby Tejon Ranch Commerce Center. This balance aims to reduce long-distance commutes, diversify housing options, and support sustainable growth patterns.

Over the past two decades, Kern workers commuting to Los Angeles County (3 percent) have kept pace with the County's growth rate, reflecting Kern's mostly self-contained labor market. Of those who commute out of the County, most commute to Los Angeles County from communities along the southern edge of the County, such as Rosamond, Tehachapi, and Frazier Park. However, a greater number of

inbound commuters travel from Los Angeles County to jobs in Kern County. Most of the imported workers commute to Edwards AFB, Kern's largest employer, with more than 10,000 jobs.[14]

Much of Kern's employment is dispersed across sectors such as agriculture, energy, manufacturing, defense, logistics, and corrections. Consequently, the Metropolitan Bakersfield area experiences a "reverse commute" whereby a segment of workers commute to outlying areas such as farm fields, food processing facilities, warehousing, wind farms, oil fields, prisons, power plants, and government installations. Historically, this reverse commute has influenced housing development on the urban fringe, allowing some commuters to shorten work trips—although such patterns can increase travel for non-work purposes such as retail, services, or education. Residential growth in suburban areas is also driven by demand for newer housing stock and perceived quality-of-life benefits, including access to newer schools. These preferences continue to shape development patterns in Bakersfield and surrounding communities.

Table 4.14-2, Growth Trends for Kern County and Cities, provides anticipated population and housing forecasts for the county and its incorporated cities through 2049.

14 Kern COG 2026, *Chapter 3 Planning Assumptions*.

Table 4.14-2
Growth Trends for Kern County and Cities

Region	Year	Census 1980	Census 1990	Census 2000	Census 2010	Census 2020	Estimate 2024	Forecast 2035	Forecast 2049	1980–2020 Average Annual Historic Growth		2024–2049 Average Annual Forecast Growth	
										Rate	Increase	Rate	Increase
Kern County	Population	403,089	543,477	661,653	839,600	909,235	910,300	975,900	1,017,200	2.0%	12,421	0.4%	4,276
	Households	139,881	181,480	208,655	254,610	281,498	290,847	328,200	351,900	1.7%	3,475	0.8%	2,442
Metro Bakersfield	Population	228,000	329,100	409,800	578,300	598,428	604,289	642,100	658,500	2.3%	9,090	0.3%	2,168
	Households	89,500	120,000	134,100	176,600	187,362	192,281	214,100	227,700	1.8%	2,402	0.7%	1,417
Arvin	Population	6,863	9,286	12,956	19,304	19,495	19,651	20,400	21,000	2.5%	310	0.3%	54
	Households	1,946	2,385	3,010	4,228	4,753	4,836	5,100	5,300	2.2%	69	0.4%	19
Bakersfield	Population	105,611	174,820	247,057	347,483	403,455	411,109	459,400	462,100	3.2%	7,309	0.5%	2,040
	Households	39,602	62,516	83,441	111,132	127,864	133,484	154,600	165,500	2.8%	2,166	0.9%	1,281
California City	Population	2,743	5,955	8,385	14,120	14,973	13,079	13,500	13,700	4.1%	300	0.2%	25
	Households	990	2,119	3,067	4,102	4,628	4,781	5,000	5,200	3.7%	89	0.3%	17
Delano	Population	16,491	22,762	38,824	53,041	51,428	52,484	53,400	54,500	2.8%	857	0.2%	81
	Households	4,912	6,236	8,409	10,260	11,113	11,915	13,100	14,000	2.0%	152	0.6%	83
Maricopa	Population	946	1,193	1,111	1,154	1,026	1,004	1,080	1,130	0.2%	2	0.5%	5
	Households	338	416	404	414	372	372	390	400	0.2%	1	0.3%	1
McFarland	Population	5,151	7,005	9,618	12,707	14,161	13,965	15,500	15,900	2.5%	221	0.5%	77
	Households	1,399	1,685	1,990	2,599	3,345	3,463	4,000	4,100	2.1%	48	0.7%	25
Ridgecrest	Population	15,929	28,295	24,927	27,616	27,959	27,940	28,800	29,300	1.4%	295	0.2%	54
	Households	5,762	10,349	9,826	10,781	11,186	11,487	12,100	12,500	1.6%	133	0.3%	41
Shafter	Population	7,010	8,409	12,731	16,988	19,953	22,226	25,400	28,000	2.5%	318	0.9%	231
	Households	2,284	2,558	3,292	4,230	5,204	6,116	8,900	10,900	2.0%	72	2.3%	191
Taft	Population	5,316	5,902	6,400	9,327	8,546	6,953	7,700	7,900	1.2%	79	0.5%	38
	Households	2,096	2,209	2,233	2,254	2,379	2,391	2,600	2,700	0.3%	7	0.5%	12
Tehachapi	Population	4,126	5,791	10,957	14,414	12,939	11,092	11,400	11,400	2.8%	216	0.1%	12
	Households	1,534	2,335	2,533	3,121	3,526	3,584	4,400	4,900	2.0%	49	1.2%	53
Wasco	Population	9,613	12,412	21,263	25,545	27,047	27,028	27,500	27,600	2.5%	428	0.1%	23
	Households	3,001	3,471	3,971	5,131	6,109	6,382	7,400	8,000	1.7%	76	0.9%	65
Unincorporated	Population	223,290	261,647	264,111	297,901	308,253	303,769	311,800	344,600	0.8%	2,085	0.5%	1,633
	Households	75,947	85,201	86,474	96,358	101,019	102,036	110,600	118,400	0.7%	615	0.6%	655

Source: Kern COG, 2026 RTP Chapter 3 Planning Assumptions, Table 3-2: Growth Trends for Kern County and Selected Communities 1980-2049

Demographics

The Kern region has an ethnic majority with Hispanics/Latinos making up approximately 58 percent of the total population in 2024.[15] Non-Hispanic Whites account for 28 percent of the population, down from 50 percent in 2000. This demographic shift is primarily driven by births and immigration, particularly from Mexico and Central America. Black, Asian, American Indian, and other populations represent 5.2 percent, 5.9 percent, 1.4 percent, and 0.2 percent of the population, respectively.[16] Population growth in Kern mirrors the rest of the state, which is one of the most diverse in the nation. The region is experiencing significant increases in three key demographic groups: aging baby boomers, their younger children, and immigrants. Migration from other areas of California with higher housing costs is indicated. Additionally, 2.8 percent of those who do not identify as Hispanic now report being of two or more races, up from 1.5 percent in 2000. If current trends persist, this multi-racial group could become the third-largest ethnic category by 2050.[17]

4.14.2 REGULATORY FRAMEWORK

4.14.2.1 Federal

Federal Uniform Act

The Federal Uniform Act (Uniform Relocation Assistance and Real Property Acquisition Policies Act; 42 U.S. Code [USC] 61), passed by Congress in 1970, is a federal law that establishes minimum standards for federally funded programs and projects that require the acquisition of real property (real estate) or displace persons from their homes, businesses, or farms. The Uniform Act's protections and assistance apply to the acquisition, rehabilitation, or demolition of real property for federal or federally funded projects (United States Code 1971).

Fixing America's Transportation Act (FAST)

The Fixing America's Surface Transportation (FAST) Act (Pub. L. No. 114-94), enacted in 2015, builds on the changes to federal transportation planning law made by MAP-21.[18] It was the first long-term surface transportation authorization enacted in a decade that provides long-term funding certainty for surface transportation. The FAST Act authorized $305 billion over fiscal years 2016 through 2020 for highway improvements, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous

15 Ibid at US Census Bureau.

16 Ibid.

17 US Census, American FactFinder. 2017. *2012-2016 American Community Survey 5-Year Estimates*.

18 The Moving Ahead for Progress in the 21st Century Act (MAP-21) was enacted in 2012 (PL 112-141).

materials safety, rail, and research, technology, and statistics programs. The FAST Act maintains the focus on safety, keeps intact the established structure of the various highway-related programs, continues efforts to streamline project delivery, and provides a dedicated source of federal dollars for freight projects.

Federal planning regulations, Title 23 CFR 450.322(e)

This federal regulation requires that, in the development of the regional transportation plan, the MPO validate data utilized in preparing other existing modal plans (such as transit providers' long-range plans) for providing input to the regional transportation plan. In updating the plan, the MPO shall base the update on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity. The MPO shall approve the transportation plan contents and supporting analyses produced by a transportation plan update.

4.14.2.2 State

SB 375- The Sustainable Communities and Climate Protection Act of 2008

Senate Bill 375 (SB 375) focuses on aligning transportation, housing, and other land uses to achieve regional greenhouse gas (GHG) emission reduction targets established under the California Global Warming Solutions Act, also known as Assembly Bill No. 32 (AB 32). SB 375 requires California Metropolitan Planning Organizations to develop a Sustainable Communities Strategy (SCS) as part of the RTP, with the purposes of identifying policies and strategies to reduce per capita passenger vehicle-generated GHG emissions. In application, the SCS must identify the general location of land uses, residential densities, and building intensities within the region; identify areas within the region sufficient to house all the population of the region; identify areas within the region sufficient to house an eight-year projection of the regional housing need; identify a transportation network to service the regional transportation needs; gather and consider the best practically available scientific information regarding resources areas and farmland in the region; consider the state housing goals; set forth a forecasted development pattern for the region; and allow the regional transportation plan to comply with the federal Clean Air Act (CAA) of 1970 (42 USC. § 7401 *et seq.*) (Gov. Code, § 65080, subd. (b)(F)(2)(B)), of which, when integrated with the transportation network, and other transportation measures and policies will reduce the GHG from automobiles and light duty trucks to achieve, if there is a reasonable way to do so, the GHG emission reduction targets approved by the California Air Resources Board (ARB). If the SCS does not achieve the GHG emission targets set by ARB, an Alternative Planning Strategy (APS) must be developed to demonstrate how the targets could be achieved.

SB 375 also imposes a number of new requirements on the regional housing needs process. Prior to SB 375, the regional transportation plan and regional housing needs processes were not required to be coordinated. SB 375 now synchronizes the schedules of the regional housing needs allocation (RHNA) and regional transportation plan processes every eight years. The RHNA must also allocate housing units within the region consistent with the development pattern included in the SCS. Previously, the RHNA determination was based on population projections produced by the Department of Finance. SB 375 requires the determination to be based upon population projections by the Department of Finance and regional population forecasts used in preparing the regional transportation plan. If the total regional population forecasted and used in the regional transportation plan is within a range of 1.5 percent (previously 3 percent) of the regional population forecast completed by the Department of Finance for the same planning period, then the population forecast developed by the regional agency and used in the regional transportation plan shall be the basis for the determination. If the difference is greater than 1.5 percent, then the two agencies shall meet to discuss variances in methodology and seek agreement on a population projection for the region to use as the basis for the RHNA determination. If no agreement is reached, then the basis for the RHNA determination shall be the regional population projection created by the Department of Finance (DOF).

The population forecast associated with Kern COG's 6th Cycle RHNA was, at the time it was prepared, within the 3 percent allowable difference from DOF projections. The change in legislation that requires an allowable difference for future cycles of RHNA to be within 1.5 percent has no impact on the current (6th Cycle) RHNA. The 2026 RTP utilizes 2024 DOF data to forecast the growth trends in Kern County for the 2026 RTP and informs the analysis within this PEIR.

Existing law requires local governments to adopt a housing element as part of their general plan. Unlike the rest of the general plan, where updates sometimes occur at intervals of 20 years or longer, under the previous law, the housing element was required to be updated as frequently as needed and no less than every five years. Under SB 375, this period has been lengthened to eight years and timed so that the housing element period begins no less than 18 months after adoption of the regional transportation plan, to encourage closer coordination between the housing and transportation planning. SB 375 also changes the implementation schedule required in each housing element. The previous law required the housing element to contain a program that set forth a five-year schedule to implement the goals and objectives of the housing element. The new law instead requires this schedule of actions to occur during the eight-year housing element planning period, and requires each action to have a timetable for implementation.

California Department of Housing and Community Development

State Housing Law (Government Code Section 65580) requires local government plans to address the existing and projected housing needs of all economic segments of the community through their housing elements. The housing element is one of seven state-mandated elements that every General Plan must contain, and it is required to be updated every eight years and determined to be legally adequate by the state. The purpose of the housing element is to identify the community's housing needs, state the community's goals and objectives with regard to housing production, rehabilitation, and conservation to meet those needs. In addition, the Housing Element defines the related policies and programs that the community will implement in order to achieve the stated goals and objectives. This would be accomplished through the allocation of regional housing needs consistent with the SCS.

California Relocation Assistance Act

The California Relocation Assistance Act (Government Code Section 7260 *et seq.*) establishes uniform policies to provide for the fair and equitable treatment of people displaced from their homes or businesses as a direct result of state and/or local government projects or programs. The California Relocation Assistance Act requires that comparable replacement housing be made available to displaced persons within a reasonable period of time prior to the displacement. Displaced persons or businesses are assured payment for their acquired property at fair market value. Relocation assistance in the form of advisory assistance and financial benefits would be provided at the local level. This includes aid in finding a new home location, payments to help cover moving costs, and additional payments for certain other costs.

Affordable Housing and High Road Jobs Act

The Affordable Housing and High Road Jobs Act (AB 2011) was signed in September 2022 and became effective on July 1, 2023. AB 2011 creates a CEQA-exempt, ministerial approval process for multi-family housing projects on sites within a zone in which office, retail, or parking is the principal permitted use. AB 2011 contains different qualifying criteria depending on whether the proposed housing project is 100 percent affordable or a mixed-income project. To ensure quality, construction workers must be paid prevailing wages. Other labor standards are applicable if the project is more than 50 units.

Homeowners and Private Property Protection Act

In 2008, California voters approved Proposition 99, the Homeowners and Private Property Protection Act, which amended the California Constitution so that local governments are prohibited from using eminent domain authority to acquire an owner-occupied residence for the purposes of conveying it to a private

recipient, with limited exceptions. Proposition 99 applies only to owner-occupied residences, but cities may still use eminent domain authority to convey multifamily and non-residential property to other private parties (Los Angeles Law Library 2008).

Regional Housing Needs Allocation

As discussed above in the discussion of SB 375, State law requires the preparation of a Regional Housing Needs Allocation (RHNA) every eight years. The RHNA is a key tool for Kern COG and its member governments to plan for this growth. The RHNA quantifies the regional need for housing that is allocated to each jurisdiction for a certain planning period (the current 6th cycle forecast extends through October 2029). Communities then plan, consider, and decide how they will address this need through the process of completing the Housing Elements of their General Plans. The RHNA does not necessarily encourage or promote growth, but rather allows communities to anticipate growth, so that they can grow in ways that enhance quality of life, improve access to jobs, transportation, and housing, and not adversely impact the environment.

State planning law requires the SCS to identify areas sufficient to house the 8-year RHNA need pursuant to Government Code section 65080(b)(2)(B)(iii). It is important to recognize that the RHNA allocation of housing need is a distinct and separate process set forth under state housing law, Government Code section 65584 et seq. The RHNA requirements address the mandate to plan for housing units to further the statutory objectives. The RHNA establishes "minimum housing development capacity that cities and counties are to make available via their land use powers to accommodate growth within a planning period." The RHNA process is explicitly exempt from CEQA pursuant to Government Code section 65584(g), *State CEQA Guidelines* § 15283, and *State CEQA Guidelines* section 15282(r).

This region's RHNA is developed every eight years by Kern COG in concert with preparation of the RTP, as mandated by state law, to coincide with the region's schedule for preparing Housing Elements. It accounts for two types of housing need: (1) existing need and (2) future need.

Legislative changes in 2018 modified the nature of the regional housing need determination for the 6th Cycle RHNA. Specifically, Government Code 65584.01(b) et seq. explicitly added measures of household overcrowding and housing cost burden to the list of factors to be considered by the California Department of Housing and Community Development (HCD) for the determination of housing need.

The future need for housing is determined by the forecasted growth in households in a community, based on historical growth patterns, job creation, household formation rates, and other factors, to estimate how many households will be added to each community over the projection period. The housing need for new households is then adjusted to account for an ideal level of vacancy needed to

promote housing choice, maintain price competition, and encourage acceptable levels of housing upkeep and repair. The RHNA also accounts for units expected to be lost due to demolition, natural disaster, or conversion to non-housing uses. The sum of these factors, household growth, vacancy need, and replacement need, forms the "construction need" assigned to each community.

Finally, the RHNA considers how each jurisdiction might grow in ways that will decrease the concentration of low-income households in certain communities. The need for new housing is distributed among income groups so that each community moves closer to the regional average income distribution.

The 6th Cycle RHNA (2023 through 2031) identifies a total eight-year housing unit need of 57,650 units (14,658 very low income, 9,328 low-income, 9,299 moderate income, and 24,365 above moderate income). The Draft RHNA does not break out existing need separately from future need. Kern COGs RHNA allocates the total need consistent with the five RHNA objectives[19] and the region's RTP.

California Home Act Senate Bill - 9

The California Housing Opportunity and More Efficiency [HOME] Act, or Senate Bill (SB) 9, was signed into law by Governor Newsom on September 16, 2021, and went into effect on January 1, 2022. SB 9 mandates local jurisdictions to ministerially approve two types of projects if specific objective criteria are met. The two types of projects include: subdivisions of one lot into two resultant lots in a single-family residential zone (referred to as an Urban Lot Split); and a Second Dwelling Unit in a single-family residential zone. "Ministerial" means a project must be approved if it complies with objective standards, without any subjective judgment from planners (such as building permits). Ministerial projects are not subject to environmental reviews or public hearings.

Projects under SB 9 must meet the following criteria:

- Property is located within a single-family residential zone;

---

19 The five RHNA objectives are: 1) Increasing the housing supply and the mix of housing types, tenure, and affordability in all cities and counties within the region in an equitable manner, which shall result in each jurisdiction receiving an allocation of units for low- and very low-income households. 2) Promoting infill development and socioeconomic equity, protection of environmental and agricultural resources, encouragement of efficient development patterns, and achievement of the region's greenhouse gas (GHG) emissions reduction targets as established by the California Air Resources Board (CARB) pursuant to Section 65080. 3) Promoting an improved intraregional relationship between jobs and housing, including an improved balance between the number of low-wage jobs and the number of housing units affordable to low-wage workers in each jurisdiction. 4) Allocating a lower proportion of housing need to an income category when a jurisdiction already has a disproportionately high share of households in that income category, as compared to the countywide distribution of households in that category from the most recent American Community Survey. 5) Affirmatively furthering fair housing (Govt. Code § 65584(d)).

- Property is a legal parcel within an urbanized area;
- Property does not contain prime farmland or farmland of Statewide importance, wetlands, high or very high fire hazard severity zones, or other environmental constraints; and
- The project would not require the demolition or alteration of affordable housing nor displace existing tenants.

4.14.2.3 Local

General plans can be described as a city or county's "blueprint" for future development. It represents the community's view of its future; a constitution made up of the goals and policies upon which the city council, board of supervisors, or planning commission will base their land use decisions. To illustrate its importance, all subdivisions, public works projects, and zoning decisions (except in charter cities) must be consistent with the general plan. If inconsistent, they must not be approved.

State law requires that each city and each county adopt a general plan containing the following seven components or "elements": land use, circulation, housing, conservation, open-space, noise, and safety (Government Code Sections 65300 *et seq.*). At the same time, each jurisdiction is free to adopt a wide variety of additional elements covering subjects of particular interest to that jurisdiction, such as recreation, urban design, or public facilities. The 11 cities included in Kern County have created general plans. The general plans of the two largest jurisdictions that are anticipated to receive the most impact from the RTP (Kern County and the city of Bakersfield) are discussed below. Other jurisdictions in the county have similar policies.

Kern County General Plan

The General Plan is a policy document with planned land use maps and related information that are designed to give long-range guidance to those County officials making decisions affecting the growth and resources of the unincorporated Kern County jurisdiction, excluding the metropolitan Bakersfield planning area. This document helps to ensure that day-to-day decisions are in conformance with the long-range program designed to protect and further the public interest related to Kern County's growth and development. The General Plan also serves as a guide to the private sector of the economy in relating its development initiatives to the public plans, objectives, and policies of the County.

The purpose of this General Plan is intended to fulfill the following objectives:

- Encourage economic development that creates jobs and capital investments in urban and rural areas that benefits residents, businesses, and industries, as well as ensuring future governmental fiscal

stability while encouraging new development to utilize existing infrastructure and services wherever feasible in the County's urban areas.

- Adopt policies and goals that reflect the County's ongoing commitment to consult and cooperate with federal, state, regional, and local agencies to plan for the long-term future of Kern County.
- Ensure the protection of environmental resources and the development of adequate infrastructure with specific emphasis on conserving agricultural areas, discouraging unplanned urban growth, ensuring water supplies and acceptable quality for future growth, and addressing air quality issues.
- Revise the County's General Plan to reflect ongoing activities, changes in laws and regulations, and demographic characteristics of the community to ensure that the interests of the County in the health, safety, and welfare of residents and visitors are reflected in current policies and goals.
- Maintain compliance with the provisions of state planning and zoning laws as they relate to General Plan requirements.

Kern County Housing Element

The Kern County Housing Element (2024 to 2031) serves as the County's state-mandated plan for accommodating existing and projected housing needs in the unincorporated areas over an eight-year planning cycle. Its primary purpose is to evaluate current housing conditions, identify future demand across all income levels, and establish a comprehensive set of policies, programs, and land use strategies to ensure adequate housing supply and compliance with California housing law. The document emphasizes key objectives such as increasing the availability of affordable and multifamily housing, removing regulatory and development constraints, conserving and rehabilitating existing housing stock, and maintaining an inventory of suitable residential sites to meet Regional Housing Needs Allocation (RHNA) requirements. It also focuses on streamlining housing production, particularly for lower-income households, while promoting equitable access to housing.

Metropolitan Bakersfield General Plan

The following policies are included in the Metropolitan Bakersfield General Plan that are relevant to the 2026 RTP:

- Encourage employers and developers of employee-intensive commercial and industrial projects to provide facilities or referral services for the child care needs of employees.

- Continue participation in state and federal programs designed to maintain housing affordability, including Housing Choice Vouchers (Section 8), Home, Community Development Block Grant (CDBG), and Rural Development.

- Preserve the existing stock of assisted rental housing for long-term occupancy by lower and moderate-income households.

- Facilitate the provision of housing that meets the needs of all economic segments of the community.

- To provide adequate housing sites through appropriate land use map codes and zoning designations to accommodate the County's share of regional housing needs.

- Require energy efficiency in the design and construction of housing developments through implementation of the State Energy Conservation Standards (Title 24). The long-term economic and environmental benefits of energy efficiency shall be weighed against any increased initial costs of energy-saving measures. Encourage sustainable development by reducing energy use.

4.14.3 ENVIRONMENTAL IMPACTS

4.14.3.1 Thresholds of Significance

For the purposes of this PEIR, Kern COG has determined that adoption and/or implementation of the proposed 2026 RTP would result in significant impacts to the County's population, housing, and employment resources, if any of the following would occur:

- Induce substantial population growth in areas of the region either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., by extending roads and other infrastructure); and/or

- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

4.14.3.2 Methodology

The analysis assesses the potential impacts on population, housing, and employment resources that could result from the implementation of the 2026 RTP. For each potential impact, implementation of the proposed 2026 RTP is analyzed at the regional level.

Impacts are assessed from both proposed land use and proposed transportation changes. By 2049, implementation of the proposed 2026 RTP would result in a land use pattern and transportation network that is different from existing conditions. Unless otherwise stated, "existing conditions" in the proposed

RTP refer to conditions in the year 2025, as that is the date of the NOP. However, as noted in the Project Description, the 2026 RTP uses a slightly different base year of 2024, and as a result, the 2024 data area is also used in this EIR where appropriate.

Determination of Significance

The methodology for determining the significance of population, housing, and employment impacts compares the existing conditions to the 2026 RTP conditions, as required by *State CEQA Guidelines* Section 15126.2(a). The known population, housing, and employment resources located within the region were evaluated using the criteria set forth by the California Department of Finance, the Kern COG, and the *State CEQA Guidelines*.

The land use analysis is based on an assessment of the amount of growth (population, housing, and employment) projected for the region and in the TPAs by 2049, and an analysis of how that growth will impact the existing residents, housing stock, and job opportunities in the region.

Approach to Mitigation

As discussed in **Chapter 1.0, Introduction,** Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

4.14.3.3 Impacts and Mitigation Measures

Would the project:

Impact POP-1 **Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure).**

Regional Impacts

Table 3.0-1, 2049 Population, Households, and Employment, in **Chapter 3.0, Project Description,** depicts forecasted population, household, and employment growth by 2049. Additional growth forecast data and modeling assumptions are available in Chapter 3 of the 2026 RTP.

The population growth projection described in the 2026 RTP represents the expected amount and distribution of people that would occur in 2049 if the policies and investments included in the Plan were to be implemented. The total Kern County population is expected to increase by approximately 106,900 persons by the year 2049 (see **Table 3.14-2, Growth Trends for Kern County and Cities**, above). The land use development pattern of the proposed 2026 RTP assumes a significant increase in multi-family housing and large lot residential development**. Table 4.14-3, 2026 RTP Housing Types in 2049,** provides a summary of new housing anticipated with the 2026 RTP. In most cases, this shift in housing type, especially the shift away from small-lot/townhomes in favor of the development of more multi-family housing, will occur naturally in the marketplace as developers shift to products in high demand. However, the demand for large lot residential development remains high -- over half of new development is anticipated to be of this type with the 2026 RTP.

Table 4.14-3
2026 RTP Housing Types in 2049

Housing Type	Acres	Added Units	Percent of New Development	Total Units (Existing Plus Growth)	Percent of Total Units
Multi-Family and Small-Lot/Townhomes	2,762	31,545	45.0	107,839	30.6
Large Lot	12,002	38,555	55.0	244,061	69.4
Total	14,763	61,100	100.0	351,900	100.0

Source: Kern COG 2026

Of the 61,100 new housing units expected by 2049, 45.0 percent would be multi-family housing. In accordance with Government Code Section 65080(b)(2)(B)(ii), increased housing densities in urban areas will help the region accommodate the projected housing needs at all income levels over the life of the proposed 2026 RTP, especially housing at the lower income categories. The land use strategies in the RTP and SCS will inform the development of Housing Elements of jurisdictions in the County. With enough land to accommodate twice the current forecast growth and local General Plans that are flexible and responsive to changing market trends, the Kern region continues to have little difficulty in providing adequate acreage for low-income housing.

The proposed 2026 RTP land use development pattern accommodates housing without changing local general plans. It incrementally moves the region towards more compact, mixed-use development, leading to more opportunities for walking and biking, more transit use, and shorter auto trips. The proposed 2026 RTP includes six distinct development types, which are used to meet the demand for a broader range of housing types, including the development of an increased percentage of large lot single-family homes, multi-family condominiums, and apartments.

The 2026 RTP housing and employment growth pattern focuses on areas of existing development. The 2026 RTP housing and employment growth pattern continues the emphasis developed in earlier RTPs of focusing on areas of existing development. The transportation and urban form strategies in the 2026 RTP guide development towards urban infill with some urban expansion on the periphery of already-urbanized areas. These strategies would foster economic and household growth and would remove some obstacles to growth in some parts of the region. Further, improved accessibility resulting from the 2026 RTP could help facilitate population and economic growth in areas of the region that are currently not developed. Therefore, growth related to the land use changes and transportation improvements from implementation of the proposed 2026 RTP at the regional level is considered potentially significant for **Impact POP-1.** Mitigation is required. Mitigation Measure **MM POP-1** below would mitigate these impacts.

Transit Priority Areas

TPAs are located in areas that are already developed with urban uses and are located within 0.25 miles of an existing transit station or stop. The RTP housing and employment growth pattern focuses on areas of existing development, similar to earlier RTPs. Although forecasted growth is typically planned for in the general plans of the County and the cities, the timeline of the 2026 RTP goes well beyond existing general plans and could therefore result in unplanned growth in urban areas as well. Therefore, impacts are potentially significant for **Impact POP-1** for TPAs.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

MM POP-1: Kern COG, will work with its member agencies to implement growth strategies to create an urban form designed to focus development in TPAs in accordance with the policies, strategies and investments contained in the 2026 RTP, enhancing mobility and reducing land consumption, providing urban infrastructure to support growth and ensuring a jobs-housing balance that supports decreases in greenhouse gas emissions.

Level of Significance After Mitigation

Mitigation Measure **MM POP-1** would reduce impacts on population growth. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measure above, impacts are considered significant and unavoidable.

Impact POP-2 **Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.**

Regional Impacts

In general, transportation projects proposed in the 2026 RTP would use existing rights-of-way (ROWs) to the maximum extent feasible. However, the development of some highway, arterial, and transit projects proposed under the 2026 RTP would result in the disturbance and/or loss of residential and business uses. In particular, the 2026 RTP includes system expansion projects such as new freeway lane miles and new transit track miles that have the potential to result in the loss of land currently used for residential and business purposes.

GIS was used to analyze where major freeway, rail, and transit projects, such as those described above, would intersect areas used for residential development and business uses. A 150-foot potential impact zone was drawn around transportation facilities, such as freeway, rail, and transit projects, to identify the number of acres that could potentially be affected by the construction and operation of transportation projects, including projects in the 2026 RTP.

As indicated in **Table 4.11-2**, **Affected Land Use within 150 Feet of Transportation Facilities,** developed areas of the following types of land uses within 150 feet of transportation facilities would increase by

2049: Federal and State, Industrial, Residential – High, Residential – Low, Rural Residential, and Resource. The increased areas of developed uses in proximity to transportation facilities indicate higher potential for developed areas to be impacted and possibly be displaced by these facilities. In total, the 2026 RTP includes 925 new lane miles including freeways, major arterials, collectors, and high-occupancy vehicle (HOV) lanes. These additional transportation facilities could displace homes and businesses in the region. Due to the emphasis on development in urbanized areas, including the TPAs, many of the projects that include system expansion, and as a result, have potential for displacement, are located in TPAs.

Additional residential and business lands would be affected by the growth associated with the 2026 RTP. Displacement of affordable housing, in particular, can have a negative impact on a community as these types of units are in low supply. As populations are anticipated to increasingly use transit (as documented in the RTP) and live and work in areas with active transportation opportunities or other transit-rich neighborhoods and communities (in accordance with the RTP land use strategy that emphasizes development in urban areas), changes could occur in existing communities. As such, displacement of lower-income residents could occur if new development envisioned by the 2026 RTP brings higher-income residents into a previously lower-income neighborhood. Hence, the displacement of population or housing in such an area could occur. Implementation of **Mitigation Measures MM POP-2** and **MM POP-3** would reduce impacts related to population displacement; however, the impacts would remain significant.

Transit Priority Areas

Due to the emphasis on development in urbanized areas, including the TPAs, many of the projects that include system expansion, and as a result, have potential for displacement, are located in TPAs. As described above, proposed transportation facilities could displace homes and businesses. Growth associated with the RTP could also result in the displacement of businesses and housing, which could result in the need for construction of additional housing. Therefore, impacts associated with displacement would be significant, and mitigation is required. **Mitigation Measures MM POP-2** and **MM POP-3** would reduce these impacts.

Level of Significance Before Mitigation

Significant at the regional and TPA levels.

Mitigation Measures

MM POP-2: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to evaluate alternate route alignments and transportation facilities that minimize the displacement of homes and businesses. An iterative design and impact analysis would help where impacts to homes or businesses are involved. Potential impacts should be minimized to the extent feasible. If possible, existing rights-of-way should be used.

MM POP-3: Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to mitigate impacts to affordable housing as feasible through construction of affordable units (deed restricted to remain affordable for an appropriate period of time) or payment of any fee established to address loss of affordable housing.

Level of Significance After Mitigation

Mitigation Measures MM POP-2 and **MM POP-3** would reduce impacts related to population displacement. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts are considered significant and unavoidable.

4.14.4 CUMULATIVE IMPACTS

Implementation of the 2026 RTP could facilitate an increase in population, housing, and employment over the next 23 years (although the same increases are anticipated whether or not the Plan is adopted). It is possible that the improved accessibility gained by transportation investments and key land use strategies could result in an increase in population in areas outside the region (as people find it easier to move from outside the region to employment centers within the region). If population increases in areas outside Kern County are in excess of forecasts and plans, it could add to cumulative impacts in other jurisdictions. Therefore, the significant impacts of the Plan could contribute to population and displacement impacts of other Plans in neighboring jurisdictions.

4.15.1 Fire Protection

4.15.1.1 ENVIRONMENTAL SETTING

Fire Protection Services

Fire protection within Kern County includes a variety of federal, state, county, city, and local fire protection agencies. As with police protection services, the primary fire protection services occur at the community level, with city and county fire departments and fire protection districts providing this service. Also serving as fire protection services are a variety of volunteer fire companies. In addition, there are fire protection agencies that provide fire protection services within state and federal lands. These agencies include but are not limited to federal fire agencies (Bureau of Land Management, National Park Service, National Forest Service, Department of Defense, etc.), state forestry departments, airport and harbor fire departments, and, in some instances, business-sponsored fire departments (i.e., refineries). Each agency provides fire protection services within its own area of responsibility, but it can call upon other agencies for fire support through mutual aid agreements. Generally, fire departments take proactive and preventative measures to provide fire suppression and emergency response services for all private, institutional, and public facilities within their area of responsibility. Wildfire information is presented in this section; however, information related to wildfire is discussed in more detail in **Section 4.18, Wildfire**.

Wildfires

The wildfire season in Kern County typically lasts from early spring to late fall (although climate change has resulted in drier, hotter weather and longer fire seasons). Hazards arise from a combination of hot weather, the accumulation of dried vegetation, and low moisture content in the air. These conditions, if coupled with high winds and drought, can compound the risk and potential impact of a fire. Fires are usually classified as either urban fires or wildland fires. However, growth into rural areas has increased the number of people living in heavily vegetated areas where wildlands meet urban development, also referred to as the wildland-urban interface. This trend is spawning a third classification of fires: the urban wildfire. A fire along the wildland-urban interface can result in major losses of property and structures.

Three major factors sustain wildfires and allow for predictions of a given area's potential to burn. These factors include fuel, topography, and weather. Certain areas in and surrounding Kern County are extremely vulnerable to fires as a result of dense, grassy vegetation combined with a growing number of structures being built near and within rural areas.

Urban Fires

Urban fires occur in developed areas and include structural, chemical, and vehicular-related fires. Structural fires can result from mechanical failures, accidental occurrences, or arson. The building materials used in various structures can limit or be a catalyst for the spread of structural fires. Although structural fires can occur in any developed area, non-sprinklered commercial buildings in downtown areas and dwelling units in lower socio-economic areas appear to be more susceptible to fires, namely due to the age of the structures. Older structures are more susceptible to fire because they were built under older building standards and fire codes, are made from non-fire-resistive construction materials, and do not have internal sprinklers or other fire safety systems.

Fire Protection Agencies

Fire suppression is the responsibility of various fire departments and districts, which often also employ paramedics for emergency medical services. The County fire department provides fire prevention/suppression and emergency services to the unincorporated areas of the County, as well as those municipalities that contract for fire protection and emergency services, including the cities of Arvin, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco.

Bureau of Land Management

The Bureau of Land Management (BLM) is the nation's largest land manager and is responsible for more than 245 million acres of public land and 700 million acres of federal subsurface mineral estate nationwide. Much of the land currently managed by the BLM today was claimed by the federal government for homesteads, railroads, parks, wildlife refuges, national forests, military bases, or for other public uses.[1]

The BLM operates the Fire and Aviation Directorate (FAD) organization, which works with state and field offices to provide a fire and aviation management program. The FAD is headquartered at the National Interagency Fire Center (NIFC) in Boise, Idaho, where it works with seven other federal agencies to manage wildland fire in the United States. The BLM's fire and aviation program has three organizational levels: (1) the national office which provides leadership and oversight, and develops policy, procedures and budgets for the fire and aviation program; (2) state offices which are responsible for coordinating policies and interagency activities within their state; and (3) field offices which are responsible for on-the-ground fire management and aviation activities, often partnering with other agencies to maximize rapid initial attack.

---

1 Bureau of Land Management. 2026. *What We Manage Nationally*. Available online at: https://www.blm.gov/about/what-we-manage/national , accessed April 2, 2026.

The BLM plays a primary role in the nation's wildland fire management efforts and undertakes a broad range of activities to protect the public, natural landscape, wildlife habitat, and recreational areas. The BLM trains firefighters in fire suppression, preparedness, predictive services, fuels management, fire planning, community assistance and protection, prevention and education, and safety.[2]

There is a BLM Field Office in Bakersfield. Personnel working at the field office manage 1.2 million acres of public lands in eight Central California counties, including Kern County. Public lands managed by the Bakersfield office include quarter-million-acre Carrizo Plain National Monument located in San Luis Obispo and Kern County.

National Park Service

The National Park Service (NPS) manages wildland fire in an effort to minimize destruction of infrastructure and communities, conserve natural and cultural resources, and restore and maintain the lands ecological health. The NPS manages 433 individual park units covering more than 85 million acres of land throughout the entire U.S. and its territories.[3] Of the over 85 million acres which the NPS is responsible for, 53 million acres have burnable vegetation.[4] The NPS manages an inventory of wildland fire funded equipment, strategically located throughout the United States. These include water tenders, engines, crew carriers, helicopters, and command vehicles. [5] NPS fire management includes hand crews, wildland fire modules, engine and helitack crews, as well as support personnel in parks and regional and national offices. Two Type 1 hotshot crews, Alpine Interagency Hotshot Crew (IHC) and Arrowhead IHC are based at Rocky Mountain National Park and Sequoia & Kings Canyon National Parks, respectively. The National Park Service also supports one interagency smokejumper, based at West Yellowstone, Yellowstone National Park. In addition, support personnel in parks, regional, national offices and geographic area coordination centers (GACCs) are vital to NPS fire management operations.[6]

Within Kern County, the NPS is responsible for fire prevention and suppression in the Carrizo Plain National Monument Park, Los Padres National Forest, and the Sequoia National Forest.

---

2 Bureau of Land Management, *BLM Fire Program.* Available online at: https://www.blm.gov/programs/fire, accessed April 29, 2026.

3 National Park Service, National Park System. Available online at: https://www.nps.gov/aboutus/national-park-system.htm, accessed April 2, 2026.

4 National Park Service, *Wildland Fire Fact Sheet*, May 2025. Available online at: https://www.nps.gov/orgs/1965/upload/wildland-fire-fact-sheet.pdf, accessed April 2, 2026.

5 Ibid.

6 Ibid.

National Forest Service

The National Forest Service (NFS) is an agency of the U.S. Department of Agriculture which manages 193 million acres of public lands in national forests and grasslands. The NFS performs similar duties to the NPS, including managing wildland fires, reducing flammable fuels, and restoring fire-adapted ecosystems. NFS management includes, hand crews, engine crews, aviation and helitack crews, hotshot crews, lookouts, and smokejumpers. Within Kern County the NFS is responsible for fire prevention and suppression in both the Sequoia National Forest and Los Padres National Forest, in addition to the NPS.

National Indian Forestry and Wildland Fire Management Program

The National Indian Forestry and Wildland Fire Management Program is a cooperative effort of the United States Department of the Interior, Bureau of Indian Affairs, Office of the Deputy Director - Trust Services, Division of Forestry and Wildland Fire Management, Intertribal Timber Council, and individual Tribal governments on reservations that contain forest services. Nationally, this accounts for approximately 18 million acres of forested land within approximately 60 million acres of total land with wildland fire management responsibility. Additionally, many Tribal governments also operate their own fire protection districts and fire departments.

California Department of Forestry and Fire Protection (CAL FIRE)

The California Department of Forestry and Fire Protection (CAL FIRE) is California's fire department and resource management agency and is responsible for the protection and stewardship of over 31 million acres of California's privately-owned wildlands. In addition to fighting fires, CAL FIRE responds to auto accidents, hazardous material spills, swift water rescues, civil disturbances, train wrecks, search and rescue missions, floods, and earthquake assistance. The organization comprises nearly 8,000 permanent and seasonal employees. CAL FIRE provides a variety of programs and products to residents to help minimize wildland fires, including Fire and Resources Assessment Programs, the Returning Veterans Enlisting Their Skills (RVET) program, and fire prevention classes.

The Department provides emergency services in 36 of the State's 58 counties via contracts with local governments.[7] The Department is supported by the Office of State Fire Marshall (OSFM) which enforces fire-related laws in state-owned or operated buildings, investigates arson fires in California, licenses those who inspect and service fire protection systems, approves fireworks as safe and sane for use in California, regulates the use of chemical flame retardants, evaluates building materials against fire safety standards,

7 California Department of Forestry and Fire Protection (CAL FIRE), *What We Do – Fire Protection.* Available online at: https://www.fire.ca.gov/what-we-do/fire-protection, accessed April 2, 2026.

regulates hazardous liquid pipelines, and tracks incident statistics for local and state government emergency response agencies. In 2024, the Department responded to 6,928 fire incidents, which burned 588,782 acres.[8]

CAL FIRE is responsible for fire protection within State Responsibility Areas (SRA). SRA is found in 56 of California's 58 counties and totals more than 31 million acres. Within Kern County, SRA fire protection is provided by the county, which is under contract with CAL FIRE. Known as "Contract Counties," they protect 3.4 million acres of SRA.[9]

Kern County Fire Department

The Kern County Fire Department (KCFD) is comprised of 621 permanent employees protecting an area that spans over 8,000 square miles. As discussed above, the department provides fire protection services for over 500,000 citizens living in the unincorporated areas of Kern County and the cities of Arvin, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco. Over 521 uniformed firefighters are stationed in 49 fire stations throughout the County. As well as providing fire protection services for the local municipalities, the KCFD maintains 14 Mutual Aid Agreements with neighboring fire suppression organizations to further strengthen the existing emergency services in the County and the surrounding areas.[10]

The KCFD operates 8 battalions in addition to the 49 fire stations. Their equipment includes: 46 engines, 4 ladder trucks, 34 patrols, 26 command vehicles, 8 crew buggies, 6 bulldozers, 5 masticators, 4 reserve bulldozers, 6 water tenders, 4 hand crews, 2 mass decontamination trailers, 3 crash rescues, 2 helicopters, 3 hazardous material response teams, 2 technical rescues, an excavator, and one oil fire foam tender.[11]

In 2021, the Department cataloged 16,888 fire responses, 52,316 EMS/rescue responses, 2,335 hazardous conditions responses, 16,407 service call responses, and 171 other responses, which is an increase of 17% over the last five years.[12] The Department is divided into five divisions: training, emergency

---

8 CAL FIRE. 2024, Wildfire Activity Statistics, 2024. Available online at: https://34c031f8-c9fd-4018-8c5a-4159cdff6b0d-cdn-endpoint.azureedge.net/-/media/calfire-website/our-impact/fire-statistics/2024_redbook_final.pdf?rev=d0681f53a38b40dc968658ab8852a920&hash=B582200D6531921DC40B3AB1976D1180, accessed April 2, 2026.

9 CAL FIRE, Cooperative Efforts. Available online at: https://www.fire.ca.gov/what-we-do/fire-protection/cooperative-efforts/, accessed April 2, 2026.

10 Kern County Fire Department, Department Profile. Available online at: https://kerncountyfire.org/about-kcfd/, accessed April 2, 2026.

11 Ibid.

12 Kern County Fire Department. 2021. Annual Report. https://kerncountyfire.org/wp-content/uploads/2021-Annual-Report.pdf , accessed April 30, 2026.

communications center, information technology/GIS, the Air and Wildland Division, and the Office of Emergency Services. The training division utilizes the Olive Drive Training Facility, which is jointly operated by Bakersfield College, Kern County Fire, and Bakersfield City Fire. The site is recognized throughout the emergency response community and is designated as a regional training site by the State Fire Marshall, State Office of Emergency Services, and the California Wildland Fire Training Group. At this facility, County firefighters participate in multiple drills, including house burn, hazardous material, and wildland fire drills.[13]

The Emergency Communications Center (ECC) is responsible for receiving and dispatching all fire, medical, and rescue calls within the 8,000 square miles of Kern County, as well as transferred calls from 17 different law enforcement agencies and three different private ambulance companies. In 2025, ECC's total call volume was approximately 323,792 calls.[14]

All calls requiring medical aid or ambulance dispatch are put through the International Academy of Emergency Medical Dispatch (EMD) protocols. This protocol ensures that all medically related calls will be processed the same way and the appropriate response sent on every call. It also requires dispatchers to remain on the line for life-threatening emergencies and give appropriate pre-arrival instructions to the caller.

The Information Technology Services section of the Kern County Fire Department is responsible for managing and maintaining the department's information systems and services throughout the County. As of 2026, the Technology Services employees delivered services to over 840 users, oversaw the departmental Wide Area Network connecting 58 fire stations and facilities across Kern County, including ECC and the Emergency Operations Center (EOC).

The Kern County Fire Department Air Operations team consists of full-time pilots, Captains, Firefighters, seasonal Firefighters, extra-help personnel, and full-time civilian mechanics. Two Type 2 helicopters are able to provide All Hazard response to wildland fires, hoist rescue incidents, medical aid transport, and assistance with search and rescue missions with the Kern County Sheriff's Office. The Air Operations Division also provides personnel and equipment transport, cargo delivery to remote locations, aerial mapping, and reconnaissance of large-scale incidents.[15]

---

13 Kern County Fire Department, *Divisions*. Available online at: https://kerncountyfire.org/about-kcfd/divisions/, accessed April 2, 2026.

14 Ibid.

15 Ibid.

The Office of Emergency Services division has several emergency plans in place to be able to best serve the community during a disaster. They include:

- Emergency Operations Plan
- Emergency Alert System Plan (EAS)
- Hazard Mitigation Plan
- Sheltering Operations Plan
- Terrorism Plan
- Kelso Creek Emergency Plan
- Isabella Dam Failure Evacuation Plan[16]

Emergency Operations Plan

The Kern County Emergency Operations Plan establishes an emergency management organization and assigns functions and tasks consistent with California's Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS). As defined by SEMS, an Operational Area is defined as an intermediate level of the state emergency services organization, consisting of a county and all political subdivisions within the county boundary. Kern County is the lead agency for the Kern Operational Area and is tasked to coordinate emergency activities between the county, cities, and special districts and to serve as a communications link focusing on the collection, processing, and dissemination of vital disaster information. The Plan provides for the integration and coordination of planning efforts of the County/Operational Area with those of its cities, special districts, and the state. The content is based on guidance provided by the California Emergency Management Agency, the Federal Emergency Management Agency, and the Department of Homeland Security. The intent of the Plan is to facilitate emergency response and short-term recovery by providing a framework for response to all significant emergencies, regardless of the nature of the event.

The Plan comprises four major parts, as follows:

- **Basic Plan:** Overview of the County/Operational Area's emergency management program, Emergency Management Organization, and concept of emergency operations
- **Emergency Operations Center (EOC) Procedures:** Emergency procedures to be implemented by employees at the time of a major emergency or disaster

16 Kern County Fire Department, Emergency Plans. Available online here: https://kerncountyfire.org/education-safety/emergency-plans/, accessed April 2, 2026.

- **Functional Annexes:** EOC procedures, annex, and checklists for each major EOC function, and resource and contact lists.

- **Contingency Plans:** Event-specific information and emergency instructions (e.g., Terrorism). The Contingency Plans are separate documents that may be implemented independently of the Plan and are incorporated into the Plan by reference.

Emergency Alert System Plan (EAS)

The Emergency Alert System Plan (EAS) is the Kern County mandated by the Federal Communications Commission, is a national public warning system commonly used by state and local authorities to deliver important emergency information, such as weather and AMBER alerts, to affected communities.

County of Kern 2020 Multi-Jurisdiction Hazard Mitigation Plan

As defined by the Federal Emergency Management Agency (FEMA), hazard mitigation is, "any sustained action taken to reduce or eliminate long-term risk to life and property from natural hazards." The County's plan was approved by FEMA on April 9, 2021, and covered each of the major natural hazards that pose risks to the County's infrastructure and residents.[17]

Sheltering Operations Plan

The purpose of the Kern County Area Mass Care and Shelter Guidance is to establish procedures and guidance for providing temporary shelter and support for persons displaced due to a disaster event or an evacuation ordered by local public safety authorities.[18]

Terrorism Plan

The Terrorism Contingency Plan is designed to establish responsibilities and to coordinate preparedness, response, and recovery from a terrorist-initiated incident, with emphasis placed upon incidents involving Weapons of Mass Destruction (WMD). This contingency plan supplements the existing Kern County Emergency Plan and is intended to provide general guidance. Actual response is dependent upon

---

17 County of Kern County Fire Department, County of Kern 2020 Multi-Jurisdictional Hazard Mitigation Plan, April 9, 2021. Available online at: https://kernplanning.com/2020-kern-county-multi-jurisdictional-hazard-mitigation-plan/, accessed May 14, 2026.

18 Kern County Fire Department, Sheltering Operations Plan, 2017. Available online at: https://kerncountyfire.org/education-safety/emergency-plans/, accessed May 14, 2026.

conditions existing at the time of the emergency, including the availability of local and mutual aid resources.[19]

Kelso Creek Emergency Plan

The Kelso Creek Communities Flood Warning and Notification Contingency Plan describes the monitoring actions, communications protocol, and alert and warning response to be taken by various organizations to potential or actual flooding in the Kelso Creek area.[20]

Isabella Dam

The Isabella Dam Failure Evacuation Plan provides the basic framework for response to an actual or potential failure of the Lake Isabella Dam. The plan supplements the Kern County/Operational Area and City of Bakersfield Emergency Operations Plans (EOPs) and will be implemented in conjunction with those EOPs.

Responding to a failure of Lake Isabella Dam and the resulting flood, including evacuation of more than one-quarter million people and sheltering 50,000 to 70,000 of the evacuees, will be a complex and resource-intensive operation, which will require close coordination among multiple local jurisdictions, disciplines, and private and non-profit agencies, as well as state and federal resources.[21]

The KCFD does not provide services for the Cities of Bakersfield or California City. These two municipalities maintain their own departments, which are discussed below.

City of Bakersfield Fire Department

The Bakersfield Fire Department (BFD) is the main agency responsible for protecting the residents, property, and surrounding environment located in the City of Bakersfield. The Department achieves these goals through education and prevention, planning and training, interagency collaboration, and emergency response efforts. Duties of the fire department include fire suppression services, emergency medical services, swift water rescue, technical and heavy rescue, hazardous materials mitigation and regulation,

---

19 Kern County Fire Department. *Terrorism Response and Recovery Contingency Plan,* December 11, 2003. Available online at: https://kerncountyfire.org/jsp-uploads/Terrorism-Plan.pdf, accessed April 3, 2026.

20 Kern County Fire Department, *Kelso Creek Communities Flood Warning and Notification Contingency Plan,* December 2013. Available online at: https://kerncountyfire.org/wp-content/uploads/Kelso-Creek-Emergency-Operations-Plan.pdf, accessed April 3, 2026.

21 Kern County Fire Department, *Lake Isabella Dam,* December 2009. https://kerncountyfire.org/wp-content/uploads/Isabella-Dam-Failure-Plan.pdf, accessed on April 3, 2026.

aggressive fire prevention, fire safety education, and disaster preparedness. The BFD has 240 personnel operating from 14 stations throughout the city.[22]

Emergency Medical Services

The principal functions of all Local Emergency Medical Services (EMS) Agencies in California are specified in the California Health and Safety Code. EMS includes a system of services organized to provide rapid response to serious medical emergencies, including immediate medical care and patient transport to definitive care in an appropriate hospital setting. In Kern County, the Board of Supervisors designated the EMS Department as the Local EMS Agency. The EMS Department is the lead agency for the emergency medical services system in Kern County and is responsible for coordinating all system participants in the County. Participants include the public, fire departments, ambulance companies, other emergency service providers, hospitals, and EMT training programs throughout the County. The EMS Department also provides certification and re-certification for EMTs, paramedics, specialized nurses, and dispatchers (EMD). While most EMS responses are day-to-day emergencies, EMS agencies also plan and prepare for disasters and medical responses. EMS includes:

- Public safety dispatch
- Fire services' first response and treatment
- Private ground and air ambulance response, treatment, and transport
- Law enforcement agencies
- Hospitals and specialty care centers
- Training institutions and programs for EMS personnel
- Managed care organizations
- Preventive health care
- Citizen and medical advisory groups

The Kern County Ambulance Ordinance, which governs the majority of the pre-hospital system in the County, was adopted by the Board of Supervisors in November 1990 and became effective on February 28, 1991. As a result of this ordinance and the subsequent regulations, the EMS System in Kern County became more structured and included, for the first time, measurable standards for the response of paramedic level of care to the citizens of Kern County during an emergency.

---

22 City of Bakersfield. *Fire Department*. Available online at: https://www.bakersfieldcity.us/233/Fire/, accessed April 3, 2026.

4.15.1.2 REGULATORY FRAMEWORK

4.15.1.2.1 Federal

Federal Emergency Management Act (FEMA)

In March 2003, the Federal Emergency Management Agency (FEMA) became part of the U.S. Department of Homeland Security. FEMA's continuing mission within the new department is to lead the effort to prepare the nation for all hazards and effectively manage federal response and recovery efforts following any national incident. FEMA also initiates proactive mitigation activities, trains first responders, and manages the National Flood Insurance Program and the U.S. Fire Administration

Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 (42 U.S.C. § 5121 note) was signed into law to amend the Robert T. Stafford Disaster Relief Act of 1988 (42 U.S.C. §5121-5207). Among other things, this new legislation reinforces the importance of pre-disaster infrastructure mitigation planning to reduce disaster losses nationwide and is aimed primarily at the control and streamlining of the administration of federal disaster relief and programs to promote mitigation activities. Some of the major provisions of the Act include:

- funding pre-disaster mitigation activities;
- developing experimental multi-hazard maps to better understand risk;
- establishing state and local government infrastructure mitigation planning requirements;
- defining how states can assume more responsibility in managing the Hazard Mitigation Grant Program (HMGP); and
- adjusting ways in which management costs for projects are funded.

The mitigation planning provisions outlined in Section 322 of the Act establish performance-based standards for mitigation plans and require states to have a public assistance program (Advance Infrastructure Mitigation—AIM) to develop county government plans. The consequence for counties that fail to develop an infrastructure mitigation plan is the chance of a reduced federal share of damage assistance from 75 percent to 25 percent if the damaged facility has been damaged on more than one occasion in the preceding ten-year period by the same type of event.

Federal Fire Safety Act

The Federal Fire Safety Act (FFSA) of 1992 is significantly different from other laws affecting fire safety, as the Law applies to federal operations, and there is no requirement for local action unless a private building owner leases space to the federal government. The Federal Fire Safety Act (FFSA) requires federal agencies to provide sprinkler protection in any building, whether owned or leased by the federal government, that houses at least 25 federal employees during the course of their employment.

Executive Order 13855

In response to the deadly wildfires in 2017 and 2018, Executive Order 13855: Promoting Active Management of America's Forests, Rangelands, and Other Federal Lands To Improve Conditions and Reduce Wildfire Risk calls for federal land managers to improve conditions and reduce wildfire risk through active management of their lands and emphasizes that federal agencies must collaborate with state and local institutions and incorporate active management principles into all land management planning efforts in order to address the challenges of wildland fire.[23]

4.15.1.2.2 State

California Fire Code

Title 24, Part 9 of the California Code of Regulations (CCR) is the California Fire Code. Title 24, Part 9 of the CCR sets forth regulations regarding building standards, fire protection and notification systems, fire protection devices such as fire extinguishers and smoke alarms, high-rise building standards, and fire suppression training. The 2007 California Fire Code is the incorporation of the 2006 International Fire Code of the International Code Council with necessary California amendments. Development under the proposed project would be subject to applicable regulations of the California Fire Code.

Title 8 California Code of Regulations Sections 1270 and 6773. In accordance with C.C.R., Title 8 Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Equipment," the California Occupational Safety and Health Administration (Cal OSHA) has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hosing sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance, and use of all firefighting and emergency medical equipment.

---

[23] Federal Resister. Executive Order 13855. Available online at: https://www.federalregister.gov/documents/2019/01/07/2019-00014/promoting-active-management-of-americas-forests-rangelands-and-other-federal-lands-to-improve, accessed April 3, 2026.

Title 14 California Code of Regulations Division 1.5. These regulations constitute the basic wildland fire protection standards of the California Board of Forestry. They have been prepared and adopted for the purpose of establishing minimum wildfire protection standards in conjunction with building, construction, and development in state recreation areas. Title 14 regulates that the future design and construction of structures, subdivisions, and developments in a state recreation area shall provide for basic emergency access and perimeter wildfire protection measures.

Uniform Fire Code

The Uniform Fire Code (UFC) contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 *et seq.* of the California Health and Safety Code, which includes regulations for building standards (as set forth in the California Building Code), fire protection and notification systems, fire protection devices, and fire suppression training.

Mutual Aid Agreements (MAA)

The Emergency Managers Mutual Aid (EMMA) system is a collaborative effort between city and county emergency managers in the Office of Emergency Services (OES) in the coastal, southern, and inland regions of the state. EMMA provides service in the emergency response and recovery efforts at the Southern Regional Emergency Operations Center (REOC), local Emergency Operations Centers (EOCs), the Disaster Field Office (DFO), and community service centers. The purpose of EMMA is to support disaster operations in affected jurisdictions by providing professional emergency management personnel. In accordance with the Master Mutual Aid Agreement, local and state emergency managers have responded in support of each other under a variety of plans and procedures.

California Code of Regulations Division 2 Section 16

The State of California passed legislation creating the California Emergency Management Agency (Cal EMA) and authorizing it to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with

SEMS could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

Cal EMA serves as the lead state agency for emergency management in the state. Cal EMA coordinates the state response to major emergencies in support of local government. The primary responsibility for emergency management resides with local government. Local jurisdictions first use their own resources and, as they are exhausted, obtain more from neighboring cities and special districts, the county in which they are located, and other counties throughout the state through the statewide mutual aid system. In California, the Standardized Emergency Management System (SEMS) provides the mechanism by which local government requests assistance. Cal EMA serves as the lead agency for mobilizing the state's resources and obtaining federal resources; it also maintains oversight of the state's mutual aid system. During an Cal EMA serves as the lead state agency for emergency management in the state. Cal EMA coordinates the state response to major emergencies in support of local government. The primary responsibility for emergency management resides with local government. Local jurisdictions first use their own resources and, as they are exhausted, obtain more from neighboring cities and special districts, the county in which they are located, and other counties throughout the state through the statewide mutual aid system. In California, the Standardized Emergency Management System (SEMS) provides the mechanism by which local government requests assistance. Cal EMA serves as the lead agency for mobilizing the state's resources and obtaining federal resources; it also maintains oversight of the state's mutual aid system.

Assembly Bill No. 38

Homes built before Jan. 1, 2020, need to be retrofitted to meet standards set by the State Fire Marshal, and other state agencies will need to aid in the creation of plans to prevent more homes from burning. This law requires the Office of Emergency Services and the Department of Forestry and Fire Protection to create a plan for homeowners to retrofit homes in a cost-effective way to make them more flame-retardant and less susceptible to wildfire hazards. On or after July 1, 2021, the bill requires a seller of a home located in a high or very high fire hazard severity zone to provide specified documentation to the buyer that the home is in compliance with wildfire protection measures or a local vegetation management ordinance.

Assembly Bill No. 9

Passed in September of 2021, AB 9 establishes in the Department of Conservation the Regional Forest and Fire Capacity Program to support regional leadership to build local and regional capacity and develop, prioritize, and implement strategies and projects that create fire-adapted communities and landscapes by improving ecosystem health, community wildfire preparedness, and fire resilience. The bill requires,

among other things, the department, upon an appropriation by the Legislature, to provide block grants to regional entities, as defined, to develop regional strategies that develop governance structures, identify wildfire risks, foster collaboration, and prioritize and implement projects within the region to achieve the goals of the program. The bill also requires the department, upon an appropriation by the Legislature, to provide block grants to eligible coordinating organizations, as defined, to support the statewide implementation of the program through coordination of and technical assistance to regional entities, as well as to support forest health and resilience efforts across regions and throughout the state. Finally, the bill requires the department to publish and update information on program implementation, as specified, on its website.[24]

4.15.1.2.3 Local

County and Cities General Plan and Safety Elements

The State of California requires every county and city to adopt a General Plan, which must contain a Safety Element. However, CCR Section 65302(g) specifically provides that a city may adopt the county's safety element if the county's element "is sufficiently detailed, containing appropriate policies and programs for adoption by a city." The Safety Element must include methods to reduce the potential risk of fires, floods, earthquakes, landslides, and other hazards. Other locally relevant safety issues, such as emergency response, hazardous materials spills, and crime reduction, may also be included. The safety element must identify and map urban fringe and rural-residential areas that are prone to wildfires, adequate evacuation routes, and peak load water supplies to reduce fire hazards.

Policies and strategies for fire protection services might include goals for service provision (such as an average response time) and supporting policies to help meet those goals, such as implementing emergency signal activation or requiring sprinkler systems in new developments. Each jurisdiction's general plan policies and goals will differ slightly depending on the level of need and type of services being provided.

For emergency services, some of the relevant policies may include coordinating with other agencies that are responsible for planning medical facilities to meet the health care needs of residents in the region, retaining hospitals, evaluating medical facility proposals, providing emergency response services, and participating in mutual-aid agreements. Policies included in the Kern County and Bakersfield General Plan are listed below:

---

24 Assembly Bill No. 9. California State Legislature. September 24, 2021. Available online at: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB9, accessed on April 3, 2026.

Kern County General Plan

Applicable policies from the Kern County General Plan are as follows:

- New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.
- The County will ensure adequate fire protection to all Kern County residents.
- A compact and orderly urban expansion pattern adjacent to established communities will be encouraged in order to avoid uneconomic investment by the public sector for excessive or premature extension of public facilities and services.
- Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.
- Development in areas without adequate infrastructure or development that places a burden on public services (i.e., fire, sheriff, parks, and libraries) shall be discouraged
- The County will encourage the promotion of public education about fire safety at home and in the workplace.
- The County will encourage the promotion of fire prevention methods to reduce service production costs and costs to taxpayers.
- Require that all roads in wildland fire areas are well-marked, and that homes have addresses prominently displayed.

Metropolitan Bakersfield General Plan

- Coordinate with the appropriate agencies so that adequate land and facilities are set aside for schools, parks, police/fire, libraries, cultural facilities, recreational facilities, and other service uses to serve the community
- The developer shall be responsible for all on-site costs incurred as a result of the proposed project, in addition to a proportional share of off-site costs incurred in service extension or improvements. The availability of public or private services or resources shall be evaluated during discretionary project

consideration. Availability may affect project approval or result in a reduction in size, density, or intensity otherwise indicated in the general plan's map provisions

Kern County Fire Code

The Kern County Fire Code, Chapter 17.23, outlines regulations regarding water supply needed for fire protection, the built environment, chemical storage, construction requirements, fire flow requirements, and other characteristics, which can create dangers when the department is responding to a call.

Kern County Emergency Operations Plan

The Kern County Emergency Operations Plan establishes an emergency management organization and assigns functions and tasks consistent with California's Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS).

The Plan provides for the integration and coordination of planning efforts of the County/Operational Area with those of its cities, special districts, and the state. The content is based on guidance provided by the California Emergency Management Agency, the Federal Emergency Management Agency, and the Department of Homeland Security. The intent of the Plan is to facilitate emergency response and short-term recovery by providing a framework for response to all significant emergencies, regardless of the nature of the event.

BFD Fire Prevention Inspectors

The BFD Fire Prevention Inspectors are trained to implement and enforce the California Fire Code, as well as applicable sections of the California Building Code, California Health and Safety Code, and Bakersfield Municipal Code involving Fire Protection and Environmental Protection.

The inspectors review new construction projects, as well as routine inspections to maintain regulatory compliance. Inspections are mandatory for all new construction projects that affect fire safety systems, involve environmental regulations, or other regulated activities designed to protect the health and safety of the community.

Inspections are completed by Fire Prevention code enforcement officers as well as engine companies, which conduct regular inspections of businesses in their response area for fire safety, hazardous material handling, and pre-fire planning purposes.

4.15.1.3 ENVIRONMENTAL IMPACTS

4.15.1.3.1 Thresholds of Significance

For the purposes of this PEIR, Kern COG has determined that adoption and/or implementation of the proposed 2026 RTP would result in significant impacts to the fire protection resources, if any of the following could occur:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios and response times.

4.15.1.3.2 Methodology

The analysis assesses the potential impacts to fire facilities that could result from implementation of the proposed 2026 RTP. For each potential impact, implementation of the proposed 2026 RTP is analyzed at the regional level.

Impacts are assessed in terms of both land use and transportation impacts. By 2049, implementation of the proposed 2026 RTP would result in a land use pattern and transportation network that is different from existing conditions.

Determination of Significance

The methodology for determining the significance of fire resources compares the existing conditions to conditions anticipated to occur under the 2026 RTP in 2049, as required by *State CEQA Guidelines* Section 15126.2(a).

Generally, with regard to impacts on fire resources, the greater the increase in population, housing, and employment from existing conditions, the greater the impact to the existing resources and the more likely construction of new facilities would be. The addition of new communities generally has a greater impact on existing fire resources and creates more need for construction of additional facilities as compared to the addition of new homes in an existing community. Nevertheless, the addition of any new structures and an increase in population and employment can still impact existing resources, such that construction of new facilities may be necessary.

The development of new transportation facilities could also affect fire resources through direct effects by increasing the number of users on the road, and thus increasing the number of incidents, which fire and

emergency officials must respond to. As the population is expected to grow by 106,900 people, the potential for the construction of new fire protection facilities exists.

Since this document analyzes impacts to fire resources on a programmatic level only, project-level analysis of impacts must be undertaken as appropriate. As discussed above, building codes regulate building standards, including measures for fire prevention, protection, and life safety. Buildings must meet specific regulatory requirements to protect life in the event of fire. This document analyzes the impacts of the proposed 2026 RTP at a programmatic level. Project-level analysis of impacts from the construction of fire protection facilities should be undertaken as appropriate. As discussed below, it is assumed that implementing agencies will comply with all regulatory requirements as described above.

4.15.1.3.3 Impact and Mitigation Measures

Impact FIRE-1 **Result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios and response times.**

Regional and Transit Priority Area Impacts

Under CEQA, impacts to fire protection services are associated with the physical impacts that would occur as a result of construction of new facilities. Service ratios and response times are one tool jurisdictions use to determine the need for such facilities, but do not necessarily indicate a significant impact under CEQA.

Fire and emergency services within Kern County are provided by numerous agencies within multiple jurisdictions. Depending upon the timing, location, and duration of construction activities, several of the proposed projects, including grade crossings, arterials, interchanges, and auxiliary lanes, as well as development project construction could delay emergency vehicle response times or otherwise disrupt delivery of emergency services.

Each jurisdiction has a methodology for determining appropriate response times and service ratios. As 2026 RTP transportation projects and development projects are constructed, depending upon the timing, location, and duration of construction activities, projects, including grade crossings, arterials, interchanges, widenings, as well as development projects, could result in temporary changes in fire vehicle response times. By closing off one or more lanes of a roadway, response times could temporarily and intermittently increase as fire vehicles take longer routes due to construction activity. The closure of lanes could also potentially cause traffic delays and ultimately inhibit access when responding to service calls. Generally, fire response times during project construction are reduced through adherence to road encroachment

permits. Traffic control plans are typically required to further reduce impacts on traffic, which would also reduce impacts to fire and emergency response vehicles. These impacts would be brief in nature and would be unlikely to result in a determination by a jurisdiction that new facilities would be required. Therefore, construction phase impacts would be less than significant.

By 2049, the Plan area would grow by approximately 106,900 people, 72,500 jobs, and 61,100 housing units. Implementation of the proposed 2026 RTP would consume approximately 15,168 acres of undeveloped land. Depending on the growth and housing patterns, existing facilities and services may become overextended during the lifetime of the Plan. The 2026 RTP emphasizes development in urbanized areas and expansion of existing urbanized areas. The increase in development in urban areas could result in the need for additional facilities in these areas to ensure acceptable levels of service. Similarly, as the overall population grows and new centers of development occur, there may be a need for new facilities to serve those population centers in rural areas as well.

In some cases, depending on the pattern of development, it could be necessary to construct new facilities to maintain adequate response times, equipment, and personnel. Construction of fire protection facilities themselves does not typically result in substantial environmental impacts (depending on the size of the facility); occasionally, operation of the new facility can have the potential to impact sensitive receptors in the immediate area. Such construction could also have impacts on aesthetics, air quality, noise, cultural resources, and utilities.

In planning new facilities, local jurisdictions take into account growth projections. Many of the environmental impacts of the construction and operation of new facilities are the types of impacts that have been analyzed in this PEIR. Specifically, this PEIR analyzes the anticipated effects of growth related to air quality, noise, traffic, utilities, and other environmental impact areas. Analyzing any potential impacts from individual facilities would be speculative at this time. However, construction of these facilities would comply with all applicable, laws, regulations, and ordinances, and mitigation measures would be required to address any potentially significant impacts. Therefore, at a programmatic level, impacts as a result of the construction of new fire protection facilities related to the land use changes and transportation improvements from the implementation of the proposed 2026 RTP are considered less than significant for **Impact FIRE-1**. Mitigation is not required.

Level of Significance Before Mitigation

Less than significant at the regional and TPA levels.

Mitigation Measures

None required.

Level of Significance After Mitigation

Impacts from construction of new fire protection facilities would be less than significant at the regional and TPA levels.

4.15.1.4 CUMULATIVE IMPACTS

In general, impacts to fire services would be confined to the region and would result from transportation projects and anticipated growth. However, large fires can extend across regional boundaries, requiring firefighters from adjacent regions and beyond to assist on a case-by-case basis. To the extent that the Plan would increase urban uses along the wildland interface and increase fire risk, the chance of a fire requiring multi-regional fire protection support increases. Significant impacts with respect to fire services as a result of wildland fires could add to similar impacts in adjacent jurisdictions.

4.15.2 Police Protection

4.15.2.1 ENVIRONMENTAL SETTING

Police Protection Services

Law enforcement is provided by a variety of federal, state, county, city, and other local law enforcement agencies. Primary law enforcement is at the community level, with city police and County Sheriff's departments providing this service. Additionally, there are more specialized law enforcement agencies that assist in law enforcement at the community or resource level. These specialized agencies include, but are not limited to, State Highway Patrol, School Police, Airport Police, Transit Police, Park Rangers (federal, state, County, and City), and a wide variety of federal agencies (FBI, ATF, etc.). Each agency has its own responsibilities, some of which may overlap with those of other law enforcement agencies. State Park Rangers may call upon Sheriff's Deputies for assistance. Transit Police might call upon City Police to aid them. In general, law enforcement agencies provide first response to all emergencies, perform preliminary investigations, and provide basic patrol services in their service area.

California Highway Patrol

The California Highway Patrol (CHP) enforces state and local regulations along interstate and state highways. The agency's service area within Kern County includes the following state routes (SR): SR-14, SR-46, SR-58, SR-99, SR-155, SR-119, SR-166, SR-184, SR-202, SR-204, SR-223, SR-33, SR-41, SR-43, SR-65, and SR-178. In addition, the officers patrol US Route 395 and Interstate 5, which also traverse through Kern County. While monitoring the roadways, the CHP provides traffic regulation enforcement, accident management, and assistance to stopped motorists. The CHP maintains three offices and/or dispatch centers in Kern County: Office 420 (Bakersfield), located at 9855 Compagnoni Street in Bakersfield; Office 426 (Buttonwillow), located at 29449 Stockdale Highway in Bakersfield; and Office 430 (Fort Tejon), located at 1033 Lebec Road in Lebec. When necessary, the CHP coordinates with both Kern County's Sheriff Department and the local police departments within the County.

Kern County Sheriff's Office

The Kern County Sheriff's Office (KCSO) is the oldest law enforcement agency in the County and provides police services to unincorporated portions of the County and the cities of Wasco and Maricopa, which both have contracts with the department for police services.[1] The County Sheriff's office is located at 1350 Norris

[1] Kern County Sherriff, *Kern County Sherriff's Office*, available at: https://www.kernsheriff.org/ accessed April 30, 2026.

Road, Bakersfield, California 93308-2231. The County's Sheriff's substations are located throughout the county to provide further support and safety to the surrounding communities. The substation locations are identified in **Table 4.15.2-1, Kern County Sheriff's Substations Location**.

Table 4.15.2-1
Kern County Sheriff's Substations Locations

Station	Address
Boron Substation	26949 Cote Street, Boron, CA 93516
Buttonwillow/North Area Substation	181 E. First Street, Buttonwillow, CA 93206
Delano Substation	455 Lexington Avenue, Delano, CA 93215
Frazier Park Substation	617 Monterey Trail, Ste A, Frazier Park, CA 93225
Glenville Substation	P.O. Box 522 Glenville, CA 93226
Kern Valley Substation	7046 Lake Isabella Boulevard, Lake Isabella, CA 93240
Lamont Substation	12022 Main Street, Lamont, CA 93241
Mojave Substation	1771 Highway 58, Mojave, CA 93501
Taft Substation	601 Gardener Field Road, Taft, CA 93268
Tehachapi Substation	22209 Old Town Road, Tehachapi, CA 93581
Ridgecrest Substation	128 E. Coso Avenue, Ridgecrest, CA 93555
Rosamond Substation	2978 Diamond Street, Rosamond, CA 93560
Walker Basin Substation	14654 Caliente Creek Road, Walker Basin, CA 93518
Wasco Substation	748 F Street, Wasco, CA 93280

Source: Kern County Sheriff's Office, 20226. Available online at: https://www.kernsheriff.org/Substations.

The KCSO employs 1,502 sworn and civilian employees. Within those employed by the Sheriff's department, 627 authorized deputy sheriffs are deployed in patrol at substations, as detectives, at court services, and in special investigations units. In addition to the officer and civilian employees, there are 358 detention deputies deployed in the detention facilities, 40 park rangers, and 477 Sheriff's professional support staff assigned throughout Kern County.[2] The main sheriff is an elected position and also serves as the County's Coroner and Public Administrator; all other positions are County employees.

The Metropolitan Patrol

The Metropolitan Patrol, commonly referred to as Metro Patrol, is composed of eight Sergeants, seven Senior Deputies, 67 Deputies, and eight civilian support staff. The Metro Patrol's main responsibilities

2 Kern County Sheriff's Office (KCSO), *History*, 2026. Available online at: https://www.kernsheriff.org/History, accessed April 3, 2026.

include responding to service calls and patrolling the communities. Service calls include criminal activity, civil matters, and assisting other departments when necessary.

The Metro Patrol comprises four zones. The one zone patrols the northern portion of the County, the two zone patrols the east, the three zone monitors the south, and the four zone patrols the west. Each zone contains smaller Emergency Services Zones (ESZs). Each ESZ is identified with a four-digit number. The four zones cover approximately 600 square miles, not including outlying areas that are serviced by the KCSO substations.[3]

Reserve Deputies

Reserve Deputies are civilians who have earned their Peace Officer Standards and Training (POST) certifications and volunteer with the Kern County Sheriff's Office. Generally, Reserve Deputies are civilians who maintain a separate full-time job elsewhere but choose to give back to their community by volunteering as a peace officer. The Sheriff's Office requires Reserve Deputies to donate 200 hours of service a year, 30 of which must be at the Kern County Fair. The combined volunteered hours of Reserve Deputies add up to approximately 40,000 to 64,000 hours each year.[4]

Citizen Service Unit

The Citizen Service Unit is a volunteer group within the Kern County Sheriff's Office. This Unit is a specialized group of volunteers that work alongside paid staff to augment the cost of programs and services available through the Crime Prevention Unit. These include: Neighborhood Watch, Business Watch, Personal Safety, and Combat Auto Theft. In addition, these volunteers represent the Sheriff's Office at a variety of public functions, including fairs and expos, and provide prevention information to the community at these events. Members must satisfy specific criteria, complete an oral interview and background investigation, and complete a CSU academy to become part of the Citizen Service Unit.[5]

Cadet Unit

The Cadet Unit is a group within the Kern County Sheriff's Office that allows young people between the ages of 15 and 20 to explore the world of law enforcement. Although the Public Safety Cadets was formed with a law enforcement-centric career focus, there is a view for future development of other public safety career sectors to include Fire-Rescue, Emergency Medical Services, Corrections, Cyber and Forensic

---

3 KCSO, Metro Patrol, 2026. Available online at: https://www.kernsheriff.org/Metro_Patrol, accessed April 3, 2026.

4 KCSO, Reserves, 2026. Available online at: https://www.kernsheriff.org/Reserves, accessed April 3, 2026.

5 KCSO, *Citizen Volunteers,* 2026. Available online at: https://www.kernsheriff.org/Citizen_Volunteers, accessed April 3, 2026.

Sciences, as well as Critical Incident Management. Members are guided by several Sheriff's office staff and are able to participate in department functions such as patrolling, communications, and detentions. Combined, Explorers volunteer several hundred hours a month, wear a modified uniform to distinguish them from deputies, and are not allowed to carry weapons.[6]

Search and Rescue

The Kern County Sheriff's Department maintains eight separate Search and Rescue groups located throughout the County, which include over 225 citizen volunteers. The eight units are: the Bakersfield Search and Rescue Group, the Tehachapi Mountain Search and Rescue Group, the China Lake Mountain Rescue Group, the Desert Search and Rescue Group, the Kern Valley Search and Rescue Group, the Search and Rescue Divers, the Southern Kern Search and Rescue Group, and the Kern County Sheriff's Mounted Search and Rescue.[7]

Lerdo Detention Complex

The Kern County Sheriff's Office also maintains the Lerdo Detention Facility located at 17801 Industrial Farm Road, Shafter, California 93308. The detention center is separated into several different facilities: the Central Receiving Facility, Lerdo Pre-Trial Facility, Lerdo Justice Facility, Lerdo Max/Med Security Facility, Mojave Jail, and Ridgecrest Jail.[8] The detention facility has an average daily inmate population of approximately of 1,700 inmates.[9]

Central Receiving Facility

The KCSO undertakes approximately 30,000 new arrests a year, and the Central Receiving Facility is the Detention Bureau's main Inmate Reception Center. It is the primary location where inmates' information is processed, and they are held in the facility pending their release or first Court appearance. If the inmate is not released after their initial court appearance, they are transferred to one of the facilities at the Lerdo Detention Complex.[10]

---

6 KCSO, *Cadet Unit*, 2026. Available online at: http://www.kernsheriff.org/explorers, accessed April 3, 2026.

7 KCSO, *Search and Rescue*, 2026. Available online at: http://www.kernsheriff.org/search_rescue, accessed April 3, 2026.

8 KCSO, *Detentions*, 2026. Available online at: https://www.kernsheriff.org/Detentions, accessed April 3, 2026.

9 Ibid.

10 Ibid.

Pre-Trial Facility, Justice Facility, and Max/Med Facility

The Pre-Trial Facility is the largest detention facility operated by the Kern County Sheriff's Office. The facility has a maximum capacity of 1,232 inmates and houses both male and female inmates. The Kern County Sheriff's Office has contracted with other state and federal agencies to house inmates outside of the County. If inmates are transferred to the detention facility from outside Kern County, they are usually kept in the Pre-Trail Facility. The facility employs a medical staff 24 hours a day, seven days a week, and a psychiatric staff from 7:00 AM to 5:00 PM every day.[11] The Justice Facility is a jail facility with a capacity of 825 medium and maximum-security inmate beds. The Max/Med Facility is a jail facility with a capacity of 408 inmate beds. The facility employs 5 Detention Sergeants, 5 Detention Senior Deputies, 56 Detention Deputies, and 10 Civilian Support Staff. The Max-Med Facility is staffed twenty-four hours a day, seven days a week.[12]

Transportation Unit

The Sheriff's Office is responsible for safely transporting inmates to and from court hearings, medical appointments, or facility transfers. The Transportation Unit is responsible for transporting inmates to and from the nine Superior Courts throughout the County. The unit facilitates the transportation of Federal inmates in accordance with our contracts with the United States Marshal's Service. These transports include moving inmates to and from our facilities to the Federal Court building, the Federal Airlift, and the Federal Courthouse in Los Angeles. The Transportation Unit also assists with various other types of transportation needs for the Sheriff's Office.[13]

Inmate Services

The Inmate Services Section consists of nine subordinate work units. The work units operate to assist the Detentions Bureau and the Department in accomplishing the goal of maintaining a safe, secure, and effective jail system. These work units include inmate commissary, food service, laundry services, Lerdo warehouse, maintenance services, classification, and inmate services, which include the law library, inmate education programs, inmate telephones, chaplain services, and released inmate transportation. The Inmate

11 KCSO, Pretrial Facility. 2026. Available online at: http://www.kernsheriff.org/pre_trial_facility, accessed April 3, 2026.

12 KCSO, Maximum/Medium Security, 2026. Available online at: https://www.kernsheriff.org/Max_Med_Security, accessed April 3, 2026.

13 KCSO, Court and Transportation Services, 2026. http://www.kernsheriff.com/court_services, accessed November 29, 2021.

Services Section is staffed with one Lieutenant, one Detentions Sergeant, two Detentions Senior Deputies, four Detentions Deputies, 30 civilian employees, and numerous contract employees.[14]

City Police Departments

A majority of the Kern County Sheriff's substations are located in or adjacent to the 11 incorporated cities. Nine of the 11 incorporated cities located in Kern County operate their own full-service police departments. As referenced above, both the cities of Maricopa and Wasco have contracted with the Kern County Sheriff's Department to secure police services for the residents living in each jurisdiction.

4.15.2.2 REGULATORY FRAMEWORK

State

All law enforcement agencies within the State of California are organized and operate in accordance with the applicable provisions of the California Penal Code. This code sets forth the authority, rules of conduct, and training for peace officers. Under state law, all sworn municipal and County officers are state peace officers.

Title 13 California Code Regulations Division 2

Division 2 of Title 13 of the California Code Regulations (CCR) governs the operations of the California Highway Patrol.

Local

County and Cities General Plan and Safety Elements

Local planning policies related to public services and recreation are established in each jurisdiction's general plan. In general, jurisdictions have policies in place that state that public services must be provided at the same time (or in advance of) the need for that service. In addition to these general policies, jurisdictions may have more specific policies tailored to performance objectives, such as those outlined below.

Policies and strategies for police protection services generally include language pertaining to the development of law enforcement programs to reduce and control crime, the planning of future law enforcement facilities concurrently with growth, and the prevention of crime through education. Many

---

14 KCSO, *Inmate Services*, 2026. Available online at: http://www.kernsheriff.org/inmate_services, accessed April 3, 2026.

jurisdictions also have specific goals, such as maintaining a certain ratio of sworn officers to citizens, reducing response times, or reducing the overall number of crimes in the community.

Applicable General Plan policies from the two largest jurisdictions and the ones that would be most affected by the Plan are identified below.

Kern County General Plan

Applicable policies from the Kern County General Plan include the following:

- New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.
- The County will ensure adequate police protection for all Kern County residents.
- A compact and orderly urban expansion pattern adjacent to established communities will be encouraged in order to avoid uneconomic investment by the public sector for excessive or premature extension of public facilities and services.

Metropolitan Bakersfield General Plan

Applicable policies from the Metropolitan Bakersfield General Plan include the following:

- Coordinate with the appropriate agencies so that adequate land and facilities are set aside for schools, parks, police/fire, libraries, cultural facilities, recreational facilities, and other service uses to serve the community.
- The developer shall be responsible for all on-site costs incurred as a result of the proposed project, in addition to a proportional share of off-site costs incurred in service extension or improvements. The availability of public or private services or resources shall be evaluated during discretionary project consideration. Availability may affect project approval or result in a reduction in size, density, or intensity otherwise indicated in the general plan's map provisions.
- Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.
- Development in areas without adequate infrastructure or development that places a burden on public services (i.e., fire, sheriff, parks, and libraries) shall be discouraged.

Kern County

In addition to following the rules and regulations of the California Penal Code, Kern County maintains a Code of Ordinances, which explains the existing laws and regulations throughout the County.

Cities

Each of the cities, excluding Maricopa and Wasco, operates its own police department, with specific rules and regulations that residents and visitors must abide by when in the local jurisdiction. While almost every city maintains its own police department, the policies are generally similar throughout the County.

4.15.2.3 ENVIRONMENTAL IMPACTS

Thresholds of Significance

For the purposes of this EIR, Kern COG has determined that adoption and/or implementation of the 2026 RTP would result in significant impacts to police protection resources, if any of the following would occur:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios and response times.

Methodology

The analysis assesses the potential impacts on police facilities that could result from the implementation of the proposed 2026 RTP. Implementation of the proposed RTP is analyzed at the regional level.

Impacts are assessed in terms of both land use and transportation impacts. By 2049, implementation of the proposed 2026 RTP will result in a land use pattern and transportation network that is different from existing conditions.

Determination of Significance

The methodology for determining the significance of police resources compares the existing conditions to conditions anticipated to occur under the 2026 RTP in 2049, as required by *CEQA Guidelines* Section 15126.2(a). The known police resources located within the region were evaluated using the criteria set forth by the CHP, the Kern County Sheriff's Office, and the *CEQA Guidelines*.

Generally, with regard to impacts on police resources, the greater the increase in population, housing, and employment from existing conditions, the greater the impact to the existing resources and the more likely

construction of new facilities would be. The addition of new communities generally has a greater impact on existing police resources and creates more need for construction of additional facilities as compared to the addition of new homes in an existing community. Nevertheless, the addition of any new structures and an increase in population and employment can still impact existing resources, such that construction of new facilities may be necessary.

The development of new transportation facilities could also affect police resources, through direct effects by increasing the number of users on the road, and thus increasing the number of incidents, which fire and emergency officials must respond to. As the population is expected to grow by 106,900 people by 2049, the potential for the construction of new police facilities exists.

Since this document analyzes impacts to police resources on a programmatic level only, project-level analysis of impacts must be undertaken as appropriate

Since this document analyzes impacts to police resources on a program level only, project-level analysis of impacts must be undertaken as appropriate.

Impact and Mitigation Measures

Impact POLICE-1 **Result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios and response times.**

Regional and Transit Priority Area Impacts

Under CEQA, impacts to police protection services are associated with the physical impacts that would occur as a result of the construction of new facilities. Service ratios and response times are one tool jurisdictions use to determine the need for such facilities, but do not necessarily indicate a significant impact under CEQA.

Police services are provided by several agencies within multiple jurisdictions. Depending upon the timing, location, and duration of construction activities, several of the proposed transportation projects, including grade crossings, arterials, interchanges, and auxiliary lanes, as well as development project construction, could delay police vehicle response times or otherwise delay the response of police services. By closing off one or more lanes of a roadway, response times could temporarily and intermittently increase as police vehicles take longer routes due to construction activity. The closure of lanes could also potentially cause traffic delays and ultimately inhibit access when responding to service calls. Generally, police response

times during project construction are reduced through adherence to road encroachment permits. Traffic control plans are typically required to further reduce impacts on traffic, which would also reduce impacts to police response. These impacts would be brief in nature and would be unlikely to result in a determination by a jurisdiction that new facilities would be required. Therefore, construction phase impacts would be less than significant.

By 2049, the Plan area would grow by approximately 106,900 people, 72,500 jobs, and 61,100 housing units. Implementation of the proposed 2026 RTP will convert approximately 15,168 acres of undeveloped land. Depending on the growth and housing patterns, existing facilities and services may become overextended during the lifetime of the proposed project. The 2026 RTP emphasizes development in urbanized areas and promotes the expansion of existing urbanized areas. This increase in development in urban areas could result in the need for additional facilities in these areas to ensure acceptable levels of service. Similarly, as the overall population grows and new centers of development occur, there may be a need for new facilities to serve those population centers in rural areas as well.

Public service standards, performance measures, and related policies are usually set in city and county general plans. To meet the demand for services generated by an increasing population, existing facilities would likely need additional personnel and equipment to maintain adequate service levels. As part of a project-specific environmental review, local agencies are required to determine the degree of impact on police services and mitigate any impacts in accordance with county and city requirements to protect public safety.

In some cases, depending on the pattern of development, it could be necessary to construct new facilities to maintain adequate response times, equipment, and personnel. Construction of police protection facilities themselves does not typically result in environmental impacts (depending on the size of the facility). In planning new facilities, local jurisdictions take into account growth projections. Many of the environmental impacts of the construction and operation of new facilities are the types of impacts that have been analyzed in this PEIR. Specifically, this PEIR analyzes the anticipated effects of growth related to air quality, noise, traffic, utilities, and other environmental impact areas. Analyzing any potential impacts from individual facilities would be speculative at this time. However, construction of these facilities would comply with all applicable laws, regulations, and ordinances, and mitigation measures would be required to address any potentially significant impacts. Therefore, at a programmatic level, impacts as a result of the construction of new police protection facilities related to the land use changes and transportation improvements from the implementation of the proposed 2026 RTP are considered less than significant for **Impact POLICE-1**. Mitigation is not required.

Level of Significance Before Mitigation

Less than significant at the regional and TPA levels.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Impacts from the construction of new police facilities would be less than significant at the regional and TPA levels.

4.15.2.4 CUMULATIVE IMPACTS

In general, impacts as a result of the construction of new police facilities would be confined to the immediate area of the construction of each facility. The potential for overlapping impacts from other cumulative projects is minor, and the impacts of the 2026 RTP would not be cumulatively considerable.

4.15.3 Schools

4.15.3.1 ENVIRONMENTAL SETTING

Education Facilities

Several jurisdictions within Kern County provide public education facilities and services to residents, including elementary schools, middle schools, secondary schools, postsecondary schools, and colleges/universities, as well as special and adult education. Additional discussion of schools is provided in **Sections 4.3, Air Quality**, and **4.9, Land Use**.

Kern County's Office of Education

The Kern County Superintendent of Schools (KCSOS), Kern County's Office of Education, supports all of the Kern County transitional kindergarten through 12th grade (TK–12) school districts. Specifically, KCSOS audits and approves district budgets, helps formulate new curricula, assists with staff development and training programs, in addition to a variety of other services. Additionally, direct instruction for thousands of students is offered through special education, alternative education, regional occupational programs, and early childhood education. KCSOS also has the responsibility of monitoring districts for adequate textbooks, facilities, and teacher qualifications.[1]

During the 2024 - 2025 school year, KCSOS oversaw 46 school districts. Kern High School District maintains the highest student enrollment with 43,237 students, while Blake Elementary School District has the lowest student enrollment with only 23 students.[2] In 2024, there were 278 public schools in the County: 158 elementary facilities, 46 middle school/junior high schools, 35 high schools, 12 continuation schools, 14 court and community schools, two special education facilities, and 11 charter schools. The student population for the 2024–2025 school year was approximately 198,992 students, ranging from transitional kindergarten to twelfth grade.[3]

---

1 Kern County Superintendent of Schools, About, available at: https://kern.org/about/, accessed April 3, 2026.

2 California Department of Education, *Data Quest – 2024-25 Enrollment by Ethnicity and Grade,* 2026. Available online at: https://dq.cde.ca.gov/dataquest/dqcensus/EnrEthGrd.aspx?cds=15&agglevel=county&year=2024-25, accessed April 3, 2026.

3 California Department of Education, *Data Quest – 2024-25 Enrollment by Ethnicity and Grade,* 2026. Available online at: https://dq.cde.ca.gov/dataquest/dqcensus/EnrEthGrd.aspx?cds=15&agglevel=county&year=2024-25, accessed April 3, 2026.

4.15.3.2 REGULATORY FRAMEWORK

State

California Government Code Section 65995

California Government Code Section 65995 is found in Title 7, Chapter 4.9 of the California Government Code. California Government Code Section 65995 authorizes school districts to collect impact fees from developers of new residential and commercial/industrial building space. Senate Bill 50 (SB 50) amended Government Code Section 65995 in 1998. Under the provisions of SB 50, schools can collect fees to offset costs associated with increasing school capacity as a result of development. The development that would occur in Kern County between now and 2049 would be subject to applicable fees determined by the local school districts per California Government Code Section 65995. The local school districts determine fees in accordance with California Government Code Section 65995, which can be adjusted every two years. The maximum fees authorized under SB 50 apply to zone changes, general plan amendments, zoning permits, and subdivisions. The provisions of SB 50 are deemed to provide full and complete mitigation of school facilities impacts, notwithstanding any contrary provisions in CEQA or other State or local laws.

California Education Code

School facilities and services are subject to the rules and regulations of the California Education Code and governance of the State Board of Education (SBE). The SBE is the 11-member governing and policymaking body of the California Department of Education (CDE) that sets K–12 education policy in the areas of standards, instructional materials, assessment, and accountability. The CDE and the State Superintendent of Public Instruction are responsible for enforcing education law and regulations, and for continuing to reform and improve public elementary school, secondary school, and childcare programs, as well as adult education and some preschool programs. The CDE's mission is to provide leadership, assistance, oversight, and resources so that every Californian has access to an education that meets world-class standards. The core purpose of the CDE is to lead and support the continuous improvement of student achievement, with a specific focus on closing achievement gaps.

California Department of Education

The CDE is the government agency responsible for public education throughout the state. The department oversees funding, student testing, and achievement levels for all state schools. A sector of the CDE, the California State Board of Education is the governing and policy-making sector responsible for education policies regarding standards, instructional materials, assessment, and accountability.

Class Size Reduction Kindergarten-University Public Education Facilities Bond Act of 1998

Proposition 1A, the Class Size Reduction Kindergarten-University Public Education Facilities Bond Act of 1998 (Ed. Code, §§ 100400–100405) is a school construction funding measure that was approved by the voters on the November 3, 1998 ballot. The Act created the School Facility Program, where eligible school districts may obtain state bond funds.

Leroy Greene School Facilities Act of 1998

The Leroy Greene School Facilities Act of 1998 (Ed. Code, §§ 17070.10-17079.30) eliminated the ability of cities and counties to require full mitigation of school impacts and replaced it with the ability for school districts to assess fees directly to offset the costs associated with increasing school capacity as a result of new development. The Act states that payment of developer fees is "deemed to be complete and full mitigation" of the impacts of new development.

Local

School Districts

Although the California public school system is under the policy direction of the Legislature, the California Department of Education relies on local control for the management of school districts. In allocating resources among the schools of the district, school district governing boards and district administrators must follow the law, but also set the educational priorities for their schools.

General Plans

Local planning policies related to education services are established in each jurisdiction's general plan. In general, jurisdictions have policies in place that state that public services must be provided at the same time (or in advance of) the need for that service. In addition to these general policies, jurisdictions may have more specific policies tailored to performance objectives, such as those outlined below. As the County and the City of Bakersfield are the largest jurisdictions that will be most impacted by the 2026 RTP, selected General Plan policies of the County and the City of Bakersfield are identified below (other jurisdictions have similar policies):

Kern County General Plan

Applicable policies from the Kern County General Plan include:

- New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.
- A compact and orderly urban expansion pattern adjacent to established communities will be encouraged in order to avoid uneconomic investment by the public sector for excessive or premature extension of public facilities and services.
- Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.
- Development in areas without adequate infrastructure or development that places a burden on public services (i.e., fire, sheriff, parks, and libraries) shall be discouraged.

Metropolitan Bakersfield General Plan

Applicable policies from the Metropolitan Bakersfield General Plan include:

- Coordinate with the appropriate agencies so that adequate land and facilities are set aside for schools, parks, police/fire, libraries, cultural facilities, recreational facilities, and other service uses to serve the community.
- The developer shall be responsible for all on-site costs incurred as a result of the proposed project, in addition to a proportional share of off-site costs incurred in service extension or improvements. The availability of public or private services or resources shall be evaluated during discretionary project consideration. Availability may affect project approval or result in a reduction in size, density, or intensity otherwise indicated in the general plan's map provisions.

4.15.3.3 ENVIRONMENTAL IMPACTS

Thresholds of Significance

For the purposes of this EIR, Kern COG has determined that adoption and/or implementation of the proposed 2026 RTP would result in significant impacts to educational facilities, if the following could occur:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other educational performance factors.

Methodology

The analysis assesses the potential impacts on school facilities that could result from the implementation of the proposed 2026 RTP. Implementation of the proposed 2026 RTP is analyzed at the regional level. Impacts are assessed in terms of both impacts that could result from transportation projects and changes in land use. By 2049, implementation of the proposed 2026 RTP would result in a land use pattern and transportation network that is different from existing conditions.

Determination of Significance

The methodology for determining the significance of education resources compares the existing conditions to conditions anticipated to occur under the 2026 RTP in 2049, as required by *State CEQA Guidelines* Section 15126.2(a). The known education resources located within the region were evaluated using the criteria set forth by the *State CEQA Guidelines*.

Generally, with regard to impacts on schools, the greater the increase in population compared to existing conditions, the greater the impact on the existing school resources and the more likely construction of new facilities would be. The addition of new communities generally has a greater impact on the need for new schools as compared to the addition of new homes in an existing community. The addition of new homes to an existing community can still impact existing schools, such that construction of additions and/or new facilities and even new schools may be necessary.

The development of new housing units could affect schools directly by increasing the number of residents and children in the area requiring educational services. As the population is expected to grow by 106,900 people, the potential for impacts to schools exists.

Since this document analyzes impacts to schools on a program level only, project-level analysis of impacts must be undertaken as appropriate.

Impact and Mitigation Measures

Impact EDU-1 **Result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities the construction of which could cause**

significant environmental impacts in order to maintain acceptable service ratios or other educational performance factors.

Regional and Transit Priority Area Impacts

Population is anticipated to increase by approximately 106,900 people over the next 23 years (with or without the Plan); some of this population increase would include school-age children. The addition of 61,100 housing units could result in the addition of approximately 54,685 school-aged children.[4]

The Bakersfield City School District has experienced a steady decrease in enrollment from 2023 to 2025.[5] The transportation investments and land use strategies in the 2026 RTP target development in urbanized portions of the region, such as Metro Bakersfield, specifically near transit and other existing infrastructure.

School standards, performance measures, and related policies are set in the school district's long-range plans. To meet increased demand, existing schools would likely need additional facilities and other resources to maintain adequate educational standards. In some cases, depending on the pattern of development, it could be necessary to construct new schools, as has been the case in Metro Bakersfield. Such construction could have impacts on aesthetics, air quality, cultural resources, noise, transportation, as well as public services and utilities.

In planning new schools, local school districts take into account growth projections. The environmental impacts of the construction and operation of new schools have been evaluated throughout this PEIR. Specifically, this PEIR analyzes the anticipated effects of growth related to air quality, noise, traffic, utilities, and other environmental impact areas. Any impacts from the construction of new schools would occur at the local level.

Furthermore, all development in California is subject to California Government Code Section 65995, which allows school districts to collect impact fees from developers of new residential and commercial/industrial space. Per SB 50, developer impact fees are the exclusive method for mitigating impacts on school facilities. In addition, SB 50 protects schools from overcrowding as it authorizes schools to collect fees, which would offset costs associated with increasing school capacity, as a result of development projects. Conformance to California Government Code Section 65995 and SB 50 is deemed to provide full and complete mitigation of school facilities impacts. These fees collected on residential and commercial development may be used to pay for all of the following: land (purchased or leased) for school facilities, design of school facilities,

---

4 Assumes a multi family residence generation rate of 0.035 for elementary, 0.02 for middle and 0.27 for high school; and a single-family generation rate of 0.25 for elementary, 0.22 for middle and 0.10 for high school.

5 California School Dashboard, Bakersfield City School District, available at: https://www.caschooldashboard.org/reports/15633210000000/2025, accessed April 30, 2026.

permit and plan checking fees, construction or reconstruction of school facilities, testing and inspection of school sites and school buildings, furniture for use in new school facilities, and interim school facilities (purchased or leased) to house students generated by new development while permanent facilities are constructed. Such development would assist in funding efforts necessary to alleviate school overcrowding and would ensure that new development would bear its fair share of the cost of accommodating the additional students generated. Therefore, at a programmatic level, impacts as a result of the construction of new schools related to the land use changes and transportation improvements from the implementation of the proposed 2026 RTP are considered less than significant for **Impact EDU-1**. Mitigation is not required.

Level of Significance Before Mitigation

Less than significant at the regional and TPA levels.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Impacts from construction of new school facilities would be less than significant at the regional and TPA levels.

4.15.3.4 CUMULATIVE IMPACTS

In general, impacts as a result of the construction of new schools would be confined to the immediate area of each school. The potential for overlapping impacts from other cumulative projects is minor as they would also be required to conform to California Government Code Section 65995 and SB 50 and impacts of the 2026 RTP would not be cumulatively considerable.

4.15.4.1 ENVIRONMENTAL SETTING

Kern County Library

The Kern County Library is a part of the San Joaquin Valley Library System and has a service area of approximately 8,141 square miles, with a population of over 850,000 residents.[1] The County's library facilities include one main branch, located at 701 Truxtun Avenue, Bakersfield, CA 93301, 22 branches, one bookmobiles, an online site, and a digital library. There are currently 95,173 Kern County Library cardholders. The library facilities are listed in **Table 4.15.4-1, Kern County Library Facilities.**

Table 4.15.4-1
Kern County Library Facilities

Library	Location
Arvin Branch*	201 Campus Drive, Arvin, CA 93203
Baker Branch	1400 Baker Street Bakersfield, CA 93305
Beale Memorial Branch*	701 Truxtun Avenue Bakersfield, CA 93301
Boron Branch	26967 Twenty Mule Team Road Boron, CA 93516
Buttonwillow Branch	101 North Main Street, Buttonwillow, CA 93206
California City Branch	9507 California City Boulevard, California City, CA 93505
Delano Branch	925 Tenth Avenue Delano, CA 93215
Frazier Park Branch*	3732 Park Drive Frazier Park, CA 93225
Holloway-Gonzales Branch	506 East Brundage Lane Bakersfield, CA 93307
Kern River Valley Branch	7054 Lake Isabella Boulevard Lake Isabella, CA 93240
Lamont Branch	8304 Segrue Road Lamont, CA 93241
McFarland Branch	500 West Kern Avenue, McFarland, CA 93250
Mojave Branch	15555 O Street, Mojave, CA 93501
Northeast Branch*	2671 Oswell St. Suite B, Bakersfield, CA 93306
Rathbun Branch Library	200 West China Grade Loop, Bakersfield, CA 93308
Ridgecrest Branch*	131 East Las Flores Avenue Ridgecrest, CA 93555
Rosamund Branch	3611 Rosamond Boulevard, Rosamund, CA 93560
Southwest Branch*	8301 Ming Avenue Bakersfield, CA 93311
Taft Branch	27 Cougar Court, Taft, CA 93268
Tehachapi Branch	212 South Green Street, Tehachapi, CA 93561
Wasco Branch	1102 7th Street Wasco, CA 93280
Wilson Branch Library	1901 Wilson Road, Bakersfield, CA 93304

Source: Kern County Library, 2026. | **Locations that offer wi-fi*

1 Kern County Library, *About*. Available online at: https://kerncountylibrary.org/about-the-kern-county-library/, accessed April 3, 2026.

The County adopted library facility demand standards of 0.78 building square feet per capita and 2.50 volumes per capita. These are the system-wide targets identified in the Kern County Library Facilities Master Plan, which was adopted in 2020.[2]

The library facilities offer additional services for children and teens. Homework assistance, education games, and college scholarship databases are some of the services offered. In addition, both the Kern County Genealogical Society and Historical Society hold meetings at the library and sponsor yearly events. Beyond the employed staff, the library system relies on community volunteers to perform a variety of daily maintenance functions, provide customer service, and assist with children, teen, and adult programs. Funding for the various facilities is established through the Kern County Library Foundation, fines, and the General Fund.

4.15.4.2 REGULATORY FRAMEWORK

Local

Developer Impact Fees

According to the Kern County Library Facilities Master Plan, one of the three primary sources for financing library facilities includes developer impact fees. These fees can be used as a mitigation measure for residential developments in which developers can construct new library facilities or pay impact fees to the library to mitigate the impacts from a specific project. Further, the County currently permits voters to pass a 1/8th cent or 1/4 cent sales tax for up to 16 years for library operations and capital construction.

4.15.4.3 IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

For the purposes of this PEIR, Kern COG has determined that adoption and/or implementation of the proposed 2026 RTP would result in significant impacts to educational facilities, if the following could occur:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios.

---

2 Kern County Library, *Facilities Master Plan to the Year 2020,* February 12, 2002. Available online at: https://www.kerncountylibrary.org/Assets/pdf/msf2020.pdf, accessed April 30, 2026.

Methodology

The analysis assesses the potential impacts on library facilities that could result from the implementation of the proposed 2026 RTP. Implementation of the proposed 2026 RTP is analyzed at the regional level. Impacts are assessed in terms of both land use and transportation impacts. By 2049, implementation of the proposed 2026 RTP would result in a land use pattern and transportation network that is different from existing conditions. Unless otherwise stated, "existing conditions" refers to conditions in the year 2025.

Determination of Significance

The methodology for determining the significance of library resources compares the existing conditions to conditions anticipated to occur in 2049 under the 2026 RTP, as required by *State CEQA Guidelines* Section 15126.2(a). The known library resources located within the region were evaluated using the criteria set forth by the *State CEQA Guidelines*.

Generally, with regard to impacts on libraries, the greater the increase in population compared to existing conditions, the greater the impact on the existing libraries and the more likely construction of new facilities would be. The addition of new communities generally has a greater impact on the need for new libraries as compared to the addition of new homes in an existing community. The addition of new homes to an existing community can still impact existing libraries, such that construction of additions and/or new facilities and even new libraries may be necessary.

The development of new housing units could affect library resources directly by increasing the number of residents and children in the area who will use these services. As the population is expected to grow by 106,900 people and 61,100 households, the potential for impacts on library resources exists.

Since this document analyzes impacts to library resources on a program level only, project-level analysis of impacts must be undertaken as appropriate.

Impact and Mitigation Measures

LIB-1 **Result in substantial adverse physical impacts associated with the provision of new or physically altered library facilities the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios.**

Regional and Transit Priority Area Impacts

Population in the Kern COG region is anticipated to increase by approximately 106,900 people over the next 23 years (with or without the Plan). As discussed above, the County has adopted library facilities

demand standards of 0.78 building square feet per capita and 2.50 volumes per capita. Based on these standards and anticipated development, the County is projected to fall short of these standards by 2030.[3]

New transportation facilities, especially those in urban areas, could facilitate the need for and increase access to libraries, resulting in increased use of some libraries. In addition, the anticipated growth in population and households would increase the demand for library facilities overall. This increased demand would result in a need for new and/or expanded library facilities. Project fees associated with development and used as a means of mitigation are required by the County before construction of larger residential projects. As stated above, the County is projected to fall short of its standards by 2030. However, the current library facilities study is from 2009 and has not been updated to reflect the shift to the use of online resources. Further, use of library facilities in the County has been declining over time despite the increase in service population. Over the last decade, circulation per capita has decreased by 49 percent.[4] Additionally, demand for library facilities may also be offset over time due to increased use of digital materials available through Kern County Library's online catalog

The construction of library facilities themselves does not typically result in substantial environmental impacts (depending on the size of the facility). Such construction could also have impacts on aesthetics, air quality, noise, cultural resources, and utilities.

In planning new facilities, local jurisdictions take into account growth projections. It is assumed that if new facilities are determined to be necessary at some point in the future, such facilities would occur where allowed by the land use. Many of the environmental impacts of the construction and operation of new facilities are the types of impacts that have been analyzed in this PEIR. Specifically, this PEIR analyzes the anticipated effects of growth related to air quality, noise, traffic, utilities, and other environmental impact areas. Analyzing any potential impacts from individual facilities would be speculative at this time. However, construction of these facilities would comply with all applicable laws, regulations, and ordinances, and mitigation measures would be required to address any potentially significant impacts. Therefore, at the programmatic level, impacts related to library services would be less than significant.

Level of Significance Before Mitigation

Less than significant at the regional and TPA levels.

---

3 Kern County, *Draft Kern County Public Facilities Impact Fee Study*. https://efiling.energy.ca.gov/GetDocument.aspx?tn=48738&DocumentContentId=47990, accessed April 3, 2026.

4 Kern County Grand Jury, Health, Education, And Social Services, 2017. Available online at, https://www.kerncounty.com/home/showpublisheddocument/5378/637388655771830000, accessed April 3, 2026.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Impacts would be less than significant at the regional and TPA levels.

4.15.4.4 CUMULATIVE IMPACTS

In general, impacts as a result of the construction of new library facilities would be confined to the immediate area of each library. Additionally, circulation of e-media and online resources will likely increase and offset the need for new physical library resources. The potential for overlapping impacts from other cumulative projects is minor, and the impacts of the 2026 RTP would not be cumulatively considerable.

4.15.5 Parks and Recreation

This section of the PEIR describes the existing recreational resources within the Kern COG region, identifies the regulatory framework with respect to laws and regulations that affect recreation resources, and analyzes the potential impacts of the 2026 RTP. In addition, this PEIR provides regional-scale mitigation measures as well as project-level mitigation measures to be considered by lead agencies for subsequent, site-specific environmental review to reduce identified impacts as appropriate and feasible.

4.15.5.1 ENVIRONMENTAL SETTING

The diverse natural resources located in the Kern COG's jurisdiction provide a wide range of recreational opportunities for residents and tourists alike. Resources range from small neighborhood parks featuring playground equipment and sports fields to vast expanses of wilderness with hiking trails,rafting, and camping. In addition to parks for active recreation, the Kern COG region also has a diversity of open space areas. The Kern COG region contains two national forests, a U.S. Fish and Wildlife refuge, and a portion of the Pacific Crest Trail. There are four California state parks, thirty regional parks, and over 175 city parks and open space areas in the Kern COG region.[1] These lands are governed by a variety of agencies.

4.15.5.1.1 Definitions

Definitions of terms used in the regulatory framework, characterization of baseline conditions, and impact analysis for recreation are provided. Parks are classified into several subgroups: neighborhood, community, city, as well as specialized recreation areas, regional recreational areas, state and federal recreation areas, and open space areas.

Neighborhood Park: A park or playground developed primarily to serve the recreational needs of citizens living within a 0.5-mile radius of the park. These facilities include pocket parks and neighborhood playgrounds.

Community Park: A larger park or facility developed to meet the park and recreational needs of those living or working within a 3-mile radius. Community parks may have a variety of playing fields and community recreation facilities.

---

1 Kern County, *Kern County GIS*, 2026. Available online at: https://maps.kerncounty.com/H5/index.html?viewer=KCPublic, accessed on April 6, 2026.

City Park: A park having a wide range of improvements not usually found in neighborhood and community parks and designed to meet the recreational needs of the entire city population. Recreational facilities might include a nature area, golf course, zoo, pool, skateboarding parks, playing fields, or structures like gymnasiums, community centers, and public or private educational institutions. Parks may also be themed, such as a park dedicated to the agricultural heritage of the area.

Specialized Recreation Area: A recreation area or facility devoted to a very specific activity or use. A linear park or trail is one example. Examples include the three golf courses owned and managed by the Kern County Parks and Recreation Department, as well as the Kern County Soccer Park, which is operated by a private organization on land leased from the County. Plazas and green spaces within commercial developments also fall into this category.

Regional Recreation Area: Regional recreation areas provide access to significant ecological, cultural, or historical features or unique facilities that attract visitors from throughout the entire region (including incorporated and unincorporated areas). Regional recreation areas may be composed of one large site or several sites located in proximity that together provide a significant recreation area for the region. These parks may include areas of significant natural resources, as well as more developed activity sites. Regional recreation areas may be supported by a wide variety of specialized facilities such as indoor recreation centers, large group picnic areas, special event facilities/festival space, and campgrounds. The Kern River County Park is an example of a regional recreation area consisting, as it does, of a cluster of regional parks and recreational facilities, including Hart Memorial Park and the Kern County Soccer Park. The Lake Isabella Recreation Area is another example.

State and Federal Recreation Areas: A park maintained by state or federal agencies and typically providing recreational opportunities like camping, hiking, bird watching, rafting, boating, and fishing. Many parts of the County have vast areas covered by state or federal parkland.

Open Space Areas: Open space refers to lands that are generally unimproved and used for resource conservation and/or the managed production of resources. Open space is comprised of both designated open space and "de facto" open space. Designated open space is land that has been left undeveloped by design. Other land is deemed open space not by design, but because the land is not involved in a productive use, or in the case of agricultural lands, the land is consumed by a productive use that contributes to the visual quality of the land or provides wildlife habitat.

4.15.5.1.2 Open Space and Recreation Lands in Kern County

National Forests

Kern County contains significant portions of two national forests. Both are maintained by the US Department of Agriculture Forest Service (USDAFS). The Los Padres National Forest lies in the southwestern corner of Kern County, while the Sequoia National Forest dominates large areas in the north and northeastern portions of the County. Both national forests provide camping facilities and an extensive range of other outdoor recreation opportunities. The Bureau of Land Management is another major federal land owner in Kern County, offering recreational opportunities, including a portion of the Pacific Crest Trail, which traverses Kern County along a route that lies east of Tehachapi and Lake Isabella. The U.S. Fish and Wildlife Service operates the Kern National Wildlife Refuge, an 11,249-acre site west of Delano that serves as a major wintering habitat for waterfowl.

State Parks

Four state parks are located within Kern County and managed by California State Parks. Three of these parks were established to preserve significant historic, cultural, or natural resources, including Fort Tejon State Historic Park, Tomo-Kahni State Historic Park, and Tule Elk State Nature Reserve. The fourth park, Red Rock Canyon State Park, features spectacular desert cliffs and rock formations, as well as camping and other outdoor recreational opportunities.

Private Resources

Private resources provide additional recreation facilities and programs within the County. Significant providers include organizations such as the Boys & Girls Club and the YMCA, along with sports leagues, clubs, and other organizations. The Kern County Soccer Foundation operates a significant regional recreation facility, the Kern County Soccer Park. This major sports complex is part of the Kern River County Park and includes more than 24 soccer fields.

Educational Institutions

A variety of educational institutions are located in the County that provide open space and community, and recreational facilities. There are 47 public school districts located throughout the County, collectively operating over 250 school sites that contribute to the recreational needs of the school-age population, and some adults. Among post-secondary educational institutions located in Kern County, there are California State University, Bakersfield, Bakersfield Community College, Cerro Coso Community College, and

Porterville Community College, which also offer significant recreational facilities and programs that help meet community recreation needs.

Kern County

The Kern County Parks and Recreation Department (KCPRD) was established in 1952. The County park system consists of a variety of parks and recreation facilities operated by numerous public agencies. The KCPRD owns approximately 4,702 acres of parks and open space at 47 sites ranging from the 1,445-acre Kern River County Park to the 0.1-acre Circle Park in Bakersfield. The KCPRD manages 8 regional parks, 40 neighborhood parks, and 25 public buildings, supervises three golf courses, and maintains landscaping for 76 county buildings. The County's facilities include fishing lakes, veterans and senior community and recreation buildings, group and individual campgrounds, boating, sailing, a soccer park, and museums.[2]

Park Standards/Level of Service (LOS): The Kern County General Plan established a standard of or parklands of 2.5 acres of parkland per 1,000 county residents. However, the 2010 Kern County Parks and Recreation Master Plan recommended a standard of 5.0 acres per 1,000 residents.[3] The current population of Kern County as of 2024 is 910,300, resulting in a level of service ratio of 5.17 acres per 1,000 people. However, this LOS is not even across park types. There is currently a significant deficit of local parks. Local Park inventory is comprised of 420.25 acres, which results in a LOS ratio of 0.46 per 1,000 people. The LOS was even lower in unincorporated areas in and near the Bakersfield metropolitan area, where recent growth has been strongest. The park deficiency in the local unincorporated areas has continued to grow as the population continues to increase in the County, and no new park or recreation facilities have been built.

Table 4-15.4-1, Kern County Park Types, classifies the type of parks in the County, the number of sites, and the number of acres for each type.

---

2 Kern County, *Parks and Recreation Master Plan,* May 2010. Available online at: https://www.kerncounty.com/home/showpublisheddocument/2148/637127126894370000, accessed on April 6, 2026.

3 Ibid.

Table 4.15.5-1
Kern County Park Types

Park Types	Number of Sites	Acres of Park Land	% Of Park System
Regional Parks and Open Space	30	46,402	96%
Local/Neighborhood Parks	177	2,093	4%

Source: Kern County GIS, 2026

4.15.5.1.3 Parkland Existing Conditions

The diverse natural resources located in Kern County provide a wide range of recreational opportunities for residents and tourists alike. Resources range from small neighborhood parks featuring playground equipment and sports fields to vast expanses of wilderness with hiking trails, rafting, and camping. In addition to parks for active recreation, Kern County also has a diversity of open space areas. According to Kern County GIS, there are approximately 42,082 acres of County parks and an additional 15,177 acres in unincorporated county areas. These lands are governed by a variety of agencies, including municipal park departments, independent park districts, counties, cities, community service districts, and federal and state agencies. Open Space and recreational lands are shown in **Figure 4.15.5-1, Resource Areas: Farmland, Habitat, Open Space, and Government Lands**.

A complete list of active parks and facilities in Kern County is presented below in **Table 4.15.5-2 Kern County Parks**.

Table 4.15.5-2
Kern County Parks

Acres	Name	Location
110.0	Greenhorn Mountain Park	Alta Sierra
19.6	Smothermon Spray Park	Arvin
16.0	DiGiorgio Park	Arvin
15.8	Arvin Little League Field Park	Arvin
5.6	Kovacevich Park	Arvin
1.6	Felecita Park	Arvin
19.2	Heritage Park	Bakerfield
3091.6	2800 Acre Water Bank	Bakersfield
1034.1	Kern River Parkway	Bakersfield

Acres	Name	Location
863.2	Panorama Vista Preserve	Bakersfield
496.6	Lake Ming	Bakersfield
451.2	Hart Memorial Park	Bakersfield
244.6	State Farm Sports Village	Bakersfield
201.2	The Links Golf Course	Bakersfield
182.1	Kern River Golf Course	Bakersfield
180.0	Seven Oaks Golf & Country Club	Bakersfield
175.9	Rio Bravo Golf & Country Club	Bakersfield
170.6	Sundale Country Club	Bakersfield
163.0	Bakersfield Country Club	Bakersfield
153.0	Kern County Fair Grounds	Bakersfield
134.0	Kern County Soccer Park	Bakersfield
130.7	Kern River State Recreation Area	Bakersfield
125.9	Stockdale Country Club	Bakersfield
107.0	Metropolitan Recreation Center (Northwest Baseball Field/Sam Lynn Ball Park)	Bakersfield
105.0	Seven Oaks At Grand Island Golf Course	Bakersfield
84.8	KRCP Bike Trail	Bakersfield
83.5	Mesa Marin Sports Complex	Bakersfield
38.3	Polo Community Park	Bakersfield
38.2	Aera Park	Bakersfield
31.2	Panorama Park	Bakersfield
29.8	The Park at River Walk	Bakersfield
25.7	Riverlakes Ranch Park	Bakersfield
25.6	KRCP Day Use Area	Bakersfield
24.4	Beach Park	Bakersfield
23.3	Uplands Of The Kern River Parkway	Bakersfield
20.2	Belle Terrace Park	Bakersfield
20.0	Patriots Park	Bakersfield
19.5	River Oaks Park	Bakersfield
19.4	Liberty Park	Bakersfield
19.4	KRCP Campground	Bakersfield
17.1	College Park	Bakersfield
17.1	Fruitvale Norris Park	Bakersfield
16.7	Pin Oak Park	Bakersfield
16.4	Yokuts Park	Bakersfield
15.4	Standard Park	Bakersfield
15.0	KRCP Camp Okihi	Bakersfield
14.7	San Miguel Commemorative Grove	Bakersfield
14.4	Silver Creek Park	Bakersfield
14.0	Wayside Park	Bakersfield

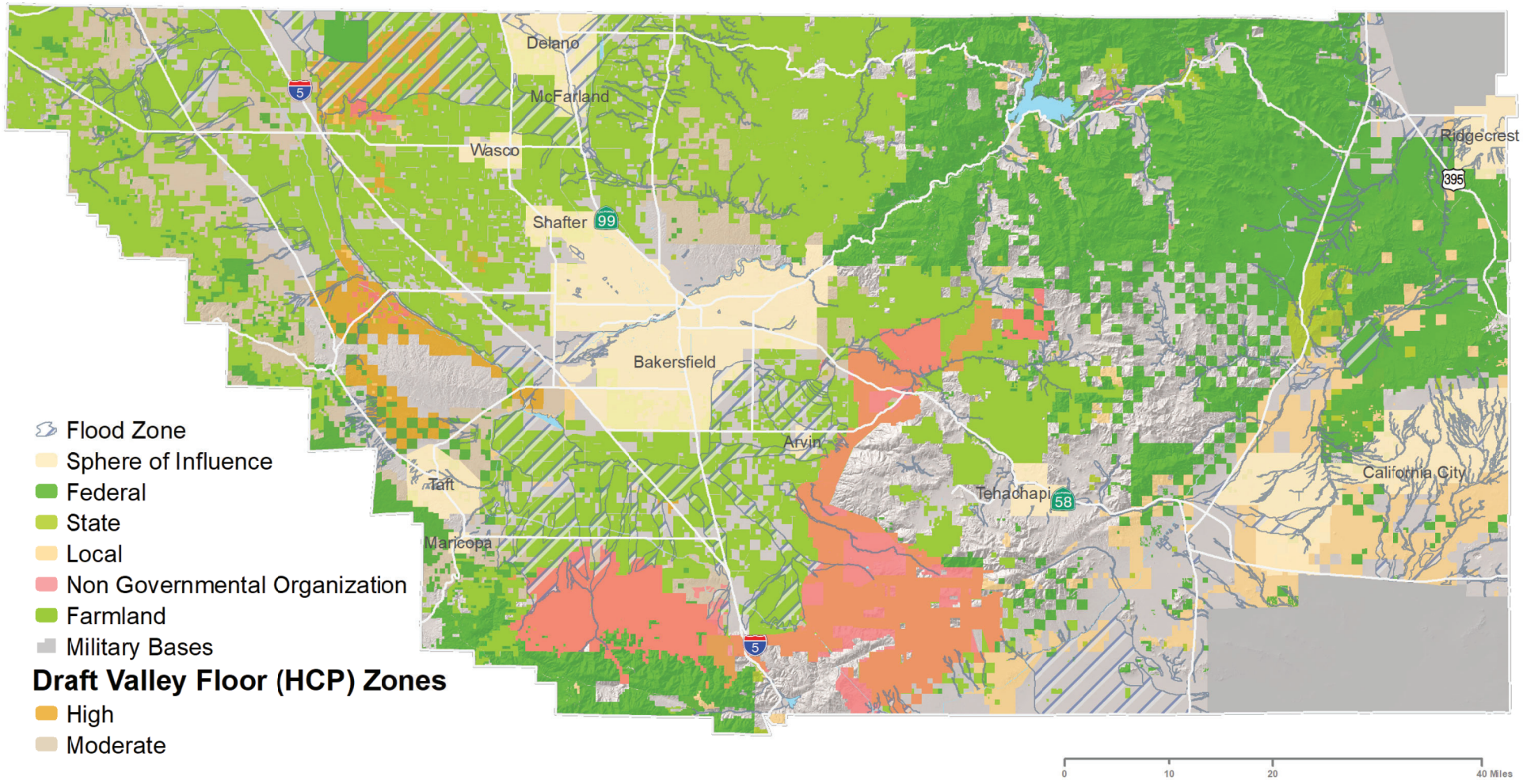
Acres	Name	Location
14.0	Pioneer Park	Bakersfield
13.5	Dr. Martin Luther King, Jr. Park	Bakersfield
12.1	Campus Park S.	Bakersfield
12.1	North Rosedale Park	Bakersfield
11.8	Kern Delta Park	Bakersfield
11.3	Grissom Park	Bakersfield
11.3	Almondale Park	Bakersfield
11.2	Greenacres Park	Bakersfield
11.1	Campus Park N.	Bakersfield
11.0	Madison Grove Park	Bakersfield
10.8	University Park	Bakersfield
10.7	Tevis Park	Bakersfield
10.6	Quailwood Park	Bakersfield
10.5	Greystone Park	Bakersfield
10.0	Emerald Cove Park	Bakersfield
9.8	Seasons Park	Bakersfield
9.6	City in the Hills Park	Bakersfield
9.5	Virginia Avenue Park	Bakersfield
9.1	Mondavi Park	Bakersfield
9.0	Casa Loma Park	Bakersfield
9.0	Centennial Park	Bakersfield
9.0	Saunders Park	Bakersfield
8.9	Silver Oak Park	Bakersfield
8.9	Haggin Oaks Park	Bakersfield
8.7	Jastro Park	Bakersfield
8.3	Planz Park	Bakersfield
8.2	Siemon Park	Bakersfield
7.9	San Lauren Park	Bakersfield
7.9	Lowell Park	Bakersfield
7.9	Tradewinds Park	Bakersfield
7.7	Jefferson Park	Bakersfield
6.8	Wilson Park	Bakersfield
6.4	Beale Park	Bakersfield
6.1	Central Park at Mill Creek	Bakersfield
6.1	Stonecreek Park	Bakersfield
6.0	Deer Peak Park	Bakersfield
6.0	Windsor Park	Bakersfield
6.0	Weston Park	Bakersfield
5.9	Windermere Park	Bakersfield
5.8	Garden Park	Bakersfield

Acres	Name	Location
5.5	Corvallis Park	Bakersfield
5.4	Live Oak Picnic Area	Bakersfield
5.4	Stramler Picnic Reservation Area	Bakersfield
5.2	Stiern Park	Bakersfield
5.2	Challenger Park	Bakersfield
4.9	Friendship House	Bakersfield
4.9	Park Stockdale Club House & Park	Bakersfield
4.9	Wilderness Park	Bakersfield
4.5	Weedpatch Park	Bakersfield
4.5	Rexland Acres Park	Bakersfield
4.4	Kroll Park	Bakersfield
4.4	Potomac Park	Bakersfield
4.3	Castle Park	Bakersfield
4.3	Westwold Park	Bakersfield
4.0	Granite Pointe Park	Bakersfield
3.7	Solera Gardens	Bakersfield
3.4	Mc Murtrey Aquatic Center	Bakersfield
3.2	Coffee Road Dog Park	Bakersfield
2.7	Bill Park Greens Park	Bakersfield
2.7	Amberton Park	Bakersfield
2.6	Wilkins Park	Bakersfield
2.5	Olive Park East	Bakersfield
2.5	Olive Park West	Bakersfield
2.3	Gymkhana Mud Volleyball	Bakersfield
2.3	Coral Keys Park	Bakersfield
2.1	Mill Creek Linear Park	Bakersfield
1.9	BMX Track	Bakersfield
1.8	Weill Park	Bakersfield
1.7	Mc Cray Park	Bakersfield
0.7	Victoria Araujo Park	Bakersfield
0.7	Amtrak Station Playground	Bakersfield
0.6	Joshua Park	Bakersfield
0.6	Centennial Plaza	Bakersfield
0.4	Sister City Garden	Bakersfield
0.1	Circle Park	Bakersfield
10.0	Boron Park	Boron
36.0	Buttonwillow Park	Buttonwillow
22347.5	Desert Tortoise Research Natural Area	California City
961.9	Galileo Park	California City
49.6	California City Municipal Park	California City

Acres	Name	Location
19.8	I Park	California City
11.3	Balsitis Park	California City
445.0	Lake Woollomes	Delano
32.0	Delano Memorial Park	Delano
11.2	Frederick Field Park	Delano
9.4	Cecil Park	Delano
7.3	Morningside Park	Delano
4.6	Valle Vista Park	Delano
3.3	Jefferson Park	Delano
1.9	Filipino Community Council Recreation Center	Delano
3.8	Derby Acres Park	Derby Acres
31.8	Onizuka Park	Edwards
60.4	Branch Memorial Park	Edwards AFB
8.0	Fellows Park	Fellows
4.1	Ford City Park	Ford City
27.0	Frazier Mountain Park	Frazier Park
4.8	Greenfield Park	Greenfield
5.5	Inyokern Park	Inyokern
27.9	Frandy Campground	Kernville
16.4	Kernville Park	Kernville
7.5	Camp Kernville	Kernville
5.0	Riverside Park	Kernville
0.6	Kernville Circle Park	Kernville
11217.0	Lake Isabella	Lake Isabella
40.0	Lake Isabella - Uffert Park (Linda Kassack Ball Field)	Lake Isabella
9.1	Bear Mountain Park	Lamont
7.9	Lamont Park	Lamont
7.0	Lost Hills Park	Lost Hills
6.1	Capitola Park	Maricopa
15.9	McFarland Recreation park	McFarland
10.6	Browning Road Park	McFarland
10.0	Mojave West Park	Mojave
8.0	Mojave East Park	Mojave
5.2	Mountain Mesa Park	Mountain mesa
5.0	North Edwards Park	North Edwards
20.0	Riverview Park	Oildale
19.6	Rosedale Park	Oildale
15.0	North Highland Park	Oildale
8.8	North Meadows Park	Oildale
6.6	North Beardsley Park	Oildale

Acres	Name	Location
4.5	North Park	Oildale
3.0	Rasmussen Center	Oildale
2.1	Sears Park	Oildale
7.4	Eastern Kern County Onyx Ranch SVRA	Onyx
4.0	Scodie Park (Eastern Kern County Onyx Ranch SVRA)	Onyx
188.7	Westside Mountain Park	Pine Mountain Club
35.0	Camp Condor	Pine Mountain Club
12.6	Lampkin Park	Pine Mountain Club
0.2	Randsburg Park	Randsburg
100.0	Leroy Jackson Park	Ridgecrest
13.1	Petroglyph Park	Ridgecrest
5.8	Upjohn Park	Ridgecrest
5.5	Freedom Park	Ridgecrest
4.2	James M. Pearson Memorial Park	Ridgecrest
452.7	Willow Springs Multiorts Park	Rosamond
10.0	Rosamond Park	Rosamond
9.3	Austin Creek Park	Rosedale
8.1	Westdale Park	Rosedale
16.2	Veterans Park	Shafter
6.4	Rodriguez Park	Shafter
5.5	Hudson Park	Shafter
1585.0	Buena Vista Aquatic Recreation Area	Taft
12.0	A. W. Noon Park	Taft
11.7	Franklin Field Park	Taft
6.7	A Street Park	Taft
6.0	George Blanco Little League Park	Taft
2.0	Valley Acres Park	Taft
490.0	Tehachapi Mountain Park	Tehachapi
258.3	Brite Lake	Tehachapi
236.5	Tomo-Kahni State Historic Park	Tehachapi
19.2	West Park	Tehachapi
10.3	Meadowood Park	Tehachapi
0.5	Dye Natatorium	Tehachapi
14.5	Westside Park	Wasco
9.3	Wasco Barker Park	Wasco
6.2	Cormack Park	Wasco
7.0	Wofford Heights park	Wofford Heights
42.3	Freear park	Wolfford Heights

Source: Kern County GIS, 2026



SOURCE: Kern COG, 2026

FIGURE **4.15.5-1**

IMPACT SCIENCES

Resource Areas: Farmland, Habitat, Open Space, and Government Lands

Local Park and Recreation Departments

The Cities of Maricopa and Taft[4] do not operate a parks and recreation department. Those two cities and the adjacent unincorporated areas are instead served by the West Side Recreation and Park District. The Cities of Arvin, Bakersfield, California City, Delano, McFarland, Ridgecrest, Shafter, Tehachapi and Wasco all maintain parks and recreation facilities through their local departments. As the largest city in Kern County, the Bakersfield Recreation and Parks department (BRP) provides parks at a level of service of 2.1 acres per 1,000 residents. When counting nearby Kern County Parks and those provided by the North of the River Recreation and Park District (NOR), the level increases to 3.3 acres per 1,000 residents. The average for cities with more than 250,000 residents across the nation is 10.3 acres per 1,000 residents.[5]

4.15.5.2 REGULATORY FRAMEWORK

Federal

National Trails System Act

The National Trails System Act (Public Law 90-543) was established by Congress in 1968 to establish a network of scenic, historic, and recreational trails. The act defined four categories of national trails: recreation trails, scenic trails, historic trails, and connecting or side trails. Trails within park, forest, and other recreation areas administered by the Secretary of the Interior or the Secretary of Agriculture or in other federally administered areas may be established and designated as "National Recreation Trails" by the appropriate Secretary. Since the National Trails System Act was enacted, the list of qualifying national scenic trails and national historic trails has grown from the initial two trails (the Appalachian National Scenic Trail and Pacific Crest National Scenic Trail) to the current list, which includes 11 national scenic trails and 19 historic trails. In addition, more than 1,000 national recreation trails have been designated nationwide, 91 of which are located in California.

Executive Order 12962—Recreational Fisheries

The objective of Executive Order 12962, dated June 7, 1995, is the conservation, restoration, and enhancement of aquatic systems to provide for increased recreational fishing. Under the executive order,

---

4 The City of Taft does not operate a Parks and Recreation Department; however, the City is responsible for maintaining Veterans Park and the Rails to Trails facilities located in the City.

5 City of Bakersfield, Recreation and Parks Master Plan, 2024. Available at: https://content.civicplus.com/api/assets/ca-bakersfield/fc263e0a-13ee-48a2-948b-89157d1630ab?cache=1800 , accessed April 30, 2026.

federal agencies shall improve the quantity function, sustainable productivity and distribution of U.S. aquatic resources for recreational fishing opportunities by:

- developing and encouraging government-private sector partnerships;
- identifying recreational fishing opportunities;
- implementing sound aquatic conservation and restoration practices;
- providing access and promoting awareness;
- supporting outreach programs;
- implementing laws;
- establishing cost-share programs;
- evaluating the effects of federally funded, permitted, or authorized actions on aquatic resources and recreational fishing; and
- assisting private landowners to conserve and enhance aquatic resources.

U.S. Department of Transportation Act

Section 4(f) of the U.S. Department of Transportation Act of 1966 (U.S. DOT Act) was enacted as a means of protecting publicly owned public parks, recreation areas, and wildlife/waterfowl refuges as well as historic sites of local, state or national significance, from conversion to transportation uses. Section 4(f) requires a comprehensive evaluation of all environmental impacts resulting from federal-aid transportation projects administered by the Federal Highway Administration, Federal Transit Administration, and Federal Aviation Administration that involve the use, or interference with use, of the following types of land:

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

This evaluation – called the Section 4(f) statement – must be sufficiently detailed to permit the US Secretary of Transportation to determine that:

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

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

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

State

California Recreational Trails Plan of 2002

The California Department of State Parks (California State Parks) is a trustee agency that owns and operates all state parks and participates in land use planning that affects state parklands. Pursuant to California PRC Section 5070, the California Recreational Trails Act, California State Parks has prepared the California Recreational Trails Plan in 1978, which was updated in 2002, with reports highlighting progress on the plan that are submitted to the State Legislature every two years.[6] The California Recreational Trails Plan establishes one designated trail corridor that passes through Kern County with the intent of forming a statewide trail system that links mountain, valley, and coastal communities to recreational, cultural, and natural resources throughout the state.[7]

---

6 California Recreational Trails Plan, *Progress Report,* 2011. Available online at: https://www.parks.ca.gov/pages/795/files/2011%20progress%20report%20summary%20final.pdf, accessed April 3, 2026.

7 The Pacific Crest National Scenic Trail includes 1,692 miles of trail improved and open in California and runs through Kern County.

Quimby Act

The Quimby Act of 1975 (Gov. Code, § 66477) states that "the legislative body of a city or county may, by ordinance, require the dedication of land or impose a requirement of the payment of fees in lieu thereof, or a combination of both, for park or recreational purposes as a condition to the approval of a tentative or parcel map." It should be noted that the Quimby Act only applies to the acquisition of new parkland and does not apply to the physical development of new park facilities or associated operations and maintenance costs. The Quimby Act effectively preserves open space needed to develop parkland and recreational facilities; however, the actual development of parks and other recreational facilities is subject to discretionary approval and is evaluated on a case-by-case basis with new residential development.

State Public Park Preservation Act of 1971

The primary instrument for protecting and preserving parkland is the State Public Park Preservation Act of 1971 (Pub. Resources Code, §§ 5400–5409). Under the Act, cities and counties may not acquire any real property that is in use as a public park for any non-park use unless compensation or land, or both, are provided to replace the parkland acquired. This provides no net loss of parkland and facilities.

Mitigation Fee Act

The California Mitigation Fee Act, Government Code sections 66000, *et seq.*, allows cities to establish fees to be imposed on development projects for the purpose of mitigating the impact of development on a city's ability to provide specified public facilities. In order to comply with the Mitigation Fee Act a City must follow the following primary requirements: (1) Make certain determinations regarding the purpose and use of a fee and establish a nexus or connection between a development project or class of project and the public improvement being financed with the fee; (2) Segregate fee revenue from the General Fund in order to avoid commingling of capital facilities fees and general funds; (3) For fees that have been in the possession of a City for five years or more and for which the dollars have not been spent or committed to a project, the City must make findings each fiscal year.

Local

County of Kern Parks and Recreation Master Plan

The Kern County Parks and Recreation Department manages an extensive system of large regional parks designed to serve the entire County-wide population, and small neighborhood and community parks intended primarily to meet the recreational needs of nearby residents in unincorporated communities where no other recreation providers are present. The County's Parks and Recreation Master Plan

evaluates the County's current park and recreation resources, assesses the needs for the future, and develops a road map to achieve those needs.

General Plans

Local planning policies related to recreation are established in each jurisdiction's general plan. In general, jurisdictions have policies in place that state that recreation services must be provided at the same time (or in advance of) the need for that service. In addition to these general policies, jurisdictions may have more specific policies tailored to performance objectives, such as those outlined below. Policies and strategies for parks and recreation may include standards for park acreage and requirements for the provision of parks in new residential developments. They also contain policies to develop self-supporting recreation programs and pursue joint use of school sites, utility rights-of-way, and other public lands for park, recreation, and open space purposes. Kern County and the City of Bakersfield will be impacted the most by the 2026 RTP, and therefore, the relevant policies from their general plans are discussed below. Other cities in the County have similar policies.

Kern County General Plan

- New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.
- The provision of parks and recreational facilities of varying size, function, and location to serve County residents will be encouraged. Special attention will be directed to providing linear parks along creeks, rivers, and streambeds in urban areas.
- Seek to provide recreational facilities where deficiencies have been identified.
- Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.
- Development in areas without adequate infrastructure or development that places a burden on public services (i.e., fire, sheriff, parks, and libraries) shall be discouraged.

Metropolitan Bakersfield General Plan

- Coordinate with the appropriate agencies so that adequate land and facilities are set aside for schools, parks, police/fire, libraries, cultural facilities, recreational facilities, and other service uses to serve the community.

- The developer shall be responsible for all on-site costs incurred as a result of the proposed project, in addition to a proportional share of off-site costs incurred in service extension or improvements. The availability of public or private services or resources shall be evaluated during discretionary project consideration. Availability may affect project approval or result in a reduction in size, density, or intensity otherwise indicated in the general plan's map provisions.

- Capitalize on the Kern River, parks, steep hills, and canals as organizational elements for the Bakersfield area, creating activity corridors around which development and recreational uses can be focused.

4.15.5.3 ENVIRONMENTAL IMPACTS

Thresholds of Significance

For the purposes of this Program EIR Kern COG has determined that adoption of the proposed 2026 RTP would result in significant impacts to recreational resources, if either of the following could occur:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial deterioration of the facilities could occur; and/or

- Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

Methodology

This section summarizes the methodology used to evaluate the expected impacts of the implementation of the 2026 RTP on parks and recreational facilities in the Kern COG region. The 2026 RTP transportation projects and growth patterns are regional, cumulative, and long-term in nature, and the analysis below provides a conservative estimate of potential environmental impacts.

By 2049, implementation of the proposed 2026 RTP would result in a land use pattern and transportation network that is different from existing conditions, and that would affect recreation resources.

Determination of Significance

The methodology for determining the significance of impacts to parks and recreational facilities compares the existing conditions to conditions anticipated to occur under the 2026 RTP conditions in 2049, as required by *CEQA Guidelines* Section 15126.2(a). The known parks and recreational facilities located within the region were evaluated using the criteria set forth by the Kern County Parks and Recreation Master Plan and the *CEQA Guidelines*.

As noted above, areas within the region contain numerous parks and recreational facilities. Generally, with regard to impacts on parks and recreational facilities, the greater the increase in population, the more significant the impact on the existing parks and recreational facilities. As the area's population continues to grow, the County's parks and recreational facilities will be used more often and by more people.

The development of new transportation facilities may also affect recreational facilities, through direct and indirect effects, including traversing recreational lands and providing better access, and thereby facilitating greater use of some parks. While the region contains a fair number of parks and recreational facilities, it is generally underserved for the existing population; additional growth will lead to additional wear and tear on these facilities; therefore, the potential for impacts to existing parks and recreational facilities is anticipated to be substantial, and the need for new parks and recreational facilities is high.

Since this document analyzes impacts to parks and recreational facilities on a program level only, project-level analysis of impacts must be undertaken as appropriate.

Approach to Mitigation

As discussed in **Chapter 1.0, Introduction,** Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions.

Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

Impacts and Mitigation Measures

Impact REC-1 **Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial deterioration of the facilities could occur.**

Regional and Transit Priority Area Impacts

The population of Kern County will grow by approximately 106,900 people by 2049. Implementation of the 2026 RTP will consume roughly 15,168 acres of undeveloped land. **Figure 4.15.5-1** illustrates various types of resource areas, including open space and government lands, in the County.

The 2026 RTP includes land use strategies to focus development into urban areas and TPAs. Despite being above the national average, urban areas such as Metro Bakersfield currently experience a deficiency in the acres of park per person.[8] The additional growth focused on these areas as a result of land use strategies in the 2026 RTP would further exacerbate the existing parks deficiency. It is likely that there will be additional demand for new facilities, but given that many areas of the County are already underserved for certain types of parks, it is likely that existing facilities will experience significant impacts and that new facilities will be insufficient to meet demand.

Currently, Kern County contains approximately 4,702 acres of parkland, including 4,282 acres of regional parks and 420.25 acres of local/neighborhood parks.[9] The current population of Kern County as of 2025 is 910,300, resulting in a level of service ratio of 5.17 acres per 1000 people. The proposed 2026 RTP would result in a population increase of approximately 106,900 people in 2049, which would result in a LOS ratio of approximately 4.62 acres per 1000 people, assuming the amount of open space stays the same. However, as the 2026 RTP would consume 15,168 acres of vacant land, some portion of the land consumed could be open space, further reducing the ratio. In addition, this ratio of open space to people does not take into account the different community needs for parks and recreational facilities. Large areas

8 City of Bakersfield, Recreation and Parks Master Plan, 2024. Available at: https://content.civicplus.com/api/assets/ca-bakersfield/fc263e0a-13ee-48a2-948b-89157d1630ab?cache=1800 , accessed April 30, 2026.

9 Kern County, *Parks and Recreation Master Plan*, May 2010. Available online at: https://www.kerncounty.com/home/showpublisheddocument/2148/637127126894370000, accessed on April 6, 2026.

of open space and parklands are located in the mountain areas of the County, but these areas are generally inaccessible and/or undesirable to many people. The parks and recreational facilities that experience the highest demand are neighborhood and community facilities, and it is these facilities that are currently insufficient in many areas, and that would be most impacted by the 2026 RTP.

Transit and some roadway improvements included in the 2026 RTP are generally located in urbanized areas, and therefore, are not anticipated to result in significant impacts to vacant/undisturbed lands or large tracts of land designated as open space. However, such projects could impact local recreational facilities such as local parks, gymnasiums, swimming pools, etc. In addition, by providing better access within the County, transit and roadway improvements could facilitate access to some parks, which could increase their use, such that substantial deterioration of these facilities with newly improved access could occur.

The combination of development and transportation projects associated with the 2026 RTP would consume 15,168 acres of undeveloped land, none of which is parkland. Therefore, without increasing the amount of open space and parkland, implementation of the proposed 2026 RTP would cause parkland and open space per capita to decrease and could result in the loss of open space lands and increase the use of remaining facilities. Local jurisdictions have individual methodologies for determining appropriate ratios of park space for their residents, as well as tools to encourage development of parks, such as the use of park fees and the Quimby Act. However, often goals for neighborhood and community facilities are not met.

Impacts to existing parks and other recreational facilities, particularly existing parks in urban areas, related to land use and transportation changes resulting from implementation of the 2026 RTP, are considered significant for **Impact REC-1.** Mitigation is required. **Mitigation Measure MM REC-1** through **MM REC-3** below will mitigate these impacts.

Level of Significance Before Mitigation

Significant at the regional and TPA levels.

Mitigation Measures

MM REC-1: Kern COG shall facilitate reducing future impacts as a result of increased use of existing neighborhood and regional parks or other facilities from population growth through cooperation with member agencies, information sharing, and program development in order to ensure consistency with planning for expansion of new neighborhood parks

within or in nearby accessible locations to TPAs in funding opportunities and programs administered by Kern COG.

MM REC-2: Kern COG, through its Environmental Review Program/Intergovernmental Review process shall encourage member jurisdictions to explore multiple use spaces and redevelopment in areas where it will provide more opportunities for recreational uses and access to natural areas close to the urban core.

MM REC-3 Kern COG, through its Environmental Review Program/Intergovernmental Review process shall encourage member jurisdictions to work as partners to address regional outdoor recreation needs and to acquire the necessary funding for the implementation of their plans and programs. This should be done, in part, by consulting with agencies and organizations that have active open space work plans.

Level of Significance After Mitigation

Mitigation Measures **MM REC-1** through **MM REC-3** would reduce the impacts on existing parks and other recreational facilities. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts are considered significant and unavoidable.

Impact REC-2 **Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.**

Regional and Transit Priority Area Impacts

By 2049, the Plan area would grow by approximately 106,900 people. As discussed under **Impact REC-1** some areas within the County currently experience a deficiency of park space and would require additional parks to maintain and improve parks to people ratios. In planning new facilities, local jurisdictions take into account growth projections. Many of the environmental impacts of the construction and operation of additional parks and recreational facilities are the types of impacts that have been analyzed in this PEIR. Specifically, this PEIR analyzes anticipated effects of growth-related aesthetics, air quality, cultural resources, geology, land use, noise, transportation, utilities, and other issues. Frequently impacts associated with construction and operation of park and recreational facilities are less than significant unless there are site specific considerations. Analyzing any potential impacts from individual facilities would be speculative at this time. However, construction of these facilities would comply with

all applicable, laws, regulations, and ordinances and mitigation measures would be required to address any potentially significant impacts.

Therefore, at the programmatic level, impacts from construction of additional recreation facilities on the surrounding environment related to the land use changes and transportation improvements from implementation of the proposed 2026 RTP are considered less than significant for **Impact REC-2.** Mitigation is not required.

Level of Significance Before Mitigation

Less than significant at the regional and TPA levels.

Mitigation Measures

None required.

Level of Significance After Mitigation

Impacts from the construction of new parks and recreational facilities would be less than significant at the regional and TPA levels.

4.15.5.5 CUMULATIVE IMPACTS

To the extent that the Plan would encourage development in peripheral areas of the County, including the proposed Centennial project area near the I-5/SR-14 corridor at the Los Angeles County border and areas along SR-99 near the Tulare County border, it could increase demand for recreation facilities in neighboring counties, including Los Angeles County and Tulare County. Similarly, development on the periphery of these other counties would result in demand for recreational facilities in Kern County. In addition, given the natural resources in Kern County, any development in other counties would tend to increase demand for recreation facilities with statewide appeal (such as trails in the Sierras and other facilities in the County). Also, improved transportation facilities in Kern County and other counties would facilitate access to these facilities. Therefore, the significant impacts of the 2026 RTP on existing facilities of statewide appeal would add to similar impacts anticipated to result from RTPs in other jurisdictions, which would be cumulatively considerable. Construction of new park and recreational facilities generally results in localized impacts that are not anticipated to be cumulatively considerable.

4.16 TRANSPORTATION

This section describes the current transportation system in Kern County and discusses the potential impacts of the 2026 RTP on transportation and traffic. In addition, this PEIR provides regional-scale mitigation measures as well as a framework of mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies to reduce identified impacts as appropriate and feasible.

4.16.1 ENVIRONMENTAL SETTING

The environmental setting is an assessment of existing conditions relevant to transportation. It includes a description of the highway and street system, the public transit system, and services, as well as "active mode" (walking and biking) facilities. Kern's airports and goods movement systems (rail, truck, and air) are also essential parts of the regional transportation network and the RTP. This section also includes baseline data on the use of these transportation networks. **Figure 4.16-1** shows Kern's existing regional Countywide transportation networks and facilities, and **Figure 4.16-2** shows the Metro Bakersfield regional transportation systems.

Regional Highway and Local Street System

Regional highways represent the fundamental network for longer-distance movement of goods and people in and beyond the region. Regional streets and highways are used by nearly all travel modes, including automobiles, ridesharing vehicles, public and common carrier transit, the intra- and inter-regional trucking industry, bicyclists, pedestrians, and other non-motorized or "active" modes of transportation (though non-motorized traffic is prohibited from using freeway facilities due to safety concerns). These layered transportation systems must operate efficiently in order to reduce traffic congestion, improve air quality, and move people and goods safely.

The RTP focuses on facilities that are considered regionally significant. Regionally significant is defined as a facility with an arterial or higher functional classification, as well as any other facility that serves regional travel needs, including local roads (such as access roads to and major activity centers in the region, or to transportation terminals). The RTP recognizes principal arterials as important to the movement of both goods and people in the region. Interstate and U.S. Highways in Kern County relevant to the 2026 Plan include I-5 and US 395. There are 12 State Routes relevant to the RTP; these are State Routes 14, 43, 46, 58, 65, 99, 119, 178, 184, 202, 204, and 223.

Kern COG, in conjunction with its member agencies and Caltrans, has defined its regionally significant road system for transportation modeling purposes based on the Federal Highway Administration (FHWA)

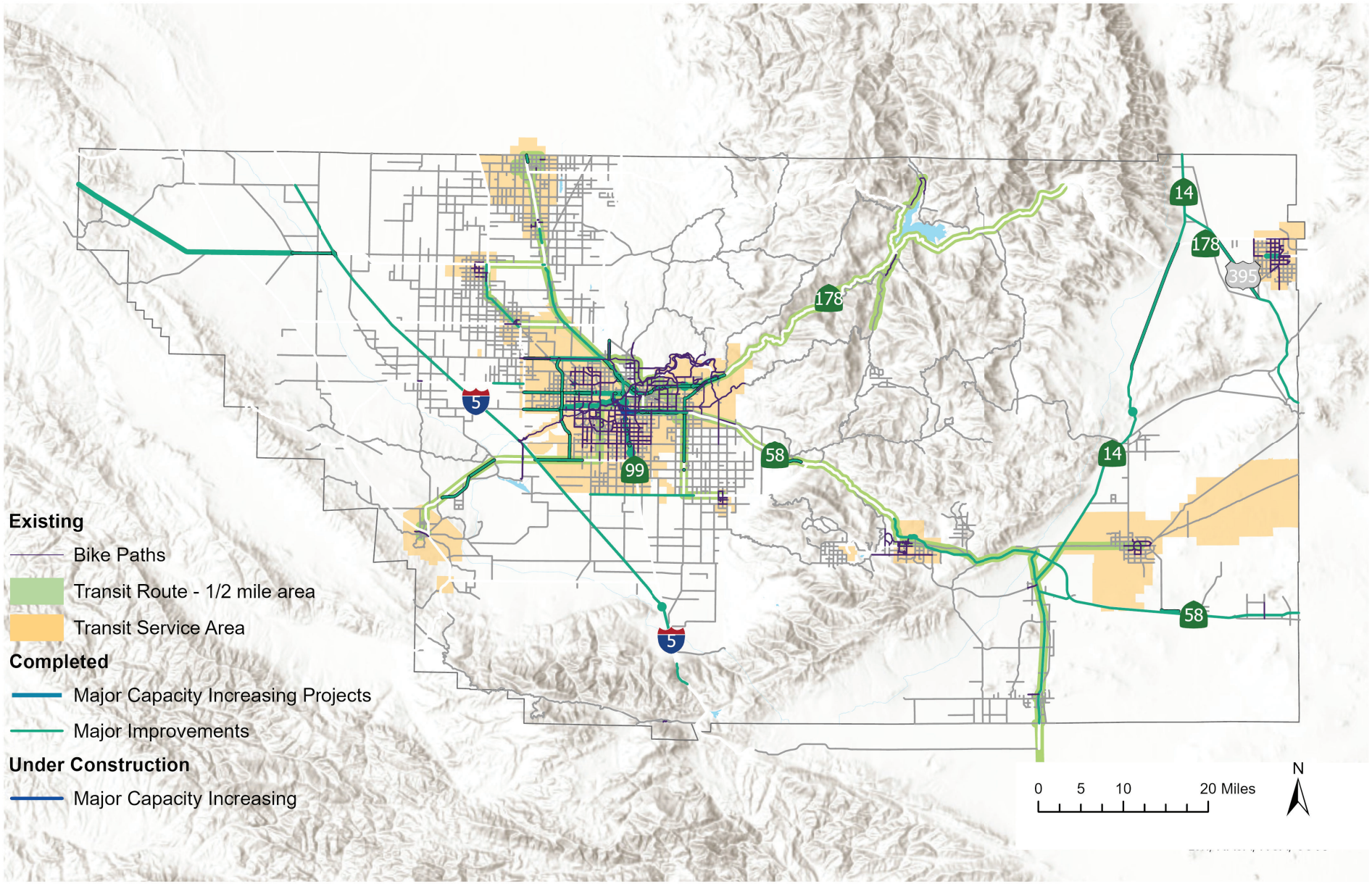
Functional Classifications System of Streets and Highways. In general, the classification systems used by local agencies coincide with the FHWA Functional Classification System; however, concerning design standards or geometrics of a particular street or road within a local jurisdiction, each local agency has its own specific design criteria. Regionally significant roads are only a fraction of the Countywide network. Regionally significant projects are generally eligible for funding from state and federal sources.

Roadway Classification System: Functional classification is a process for grouping streets and highways into classes, or system subsets, according to the type of service they are intended to provide. Fundamental to this process is the recognition that individual streets and roads usually do not serve travel in isolation; most travel involves movement through a network of roads. It is necessary to plan how this travel can be channeled through the network in a logical and efficient manner. Functional classifications define the channelization process by defining the role that a particular road or street should service within the larger network. **Table 4.16-1** defines the functional classes in urban areas, and **Table 4.16-2** defines functional classes in rural areas.

Table 4.16-1
Urban Functional Classification System-Definitions

Classification	Primary Function	Direct Land Access	Speed Limit	Parking
Freeway/Expressway	Traffic Movement	None	45-70	Prohibited
Primary Arterial	Traffic Movement/ Land Access	Limited	25-55	Prohibited
Secondary Arterial	Traffic Movement/ Land Access	Restricted	25-45	Generally Prohibited
Collector	Distribute Traffic Between Local Streets & Arterials	Safety Controls, Limited Regulation	25-35	Limited
Local	Land Access	Safety Controls Only	25	Permitted

Source: Highway Functional Classification - Concepts, Criteria and Procedures US Department of Transportation, Federal Highway Administration (1989) and Caltrans and local agency posted speed limits including school safety zones

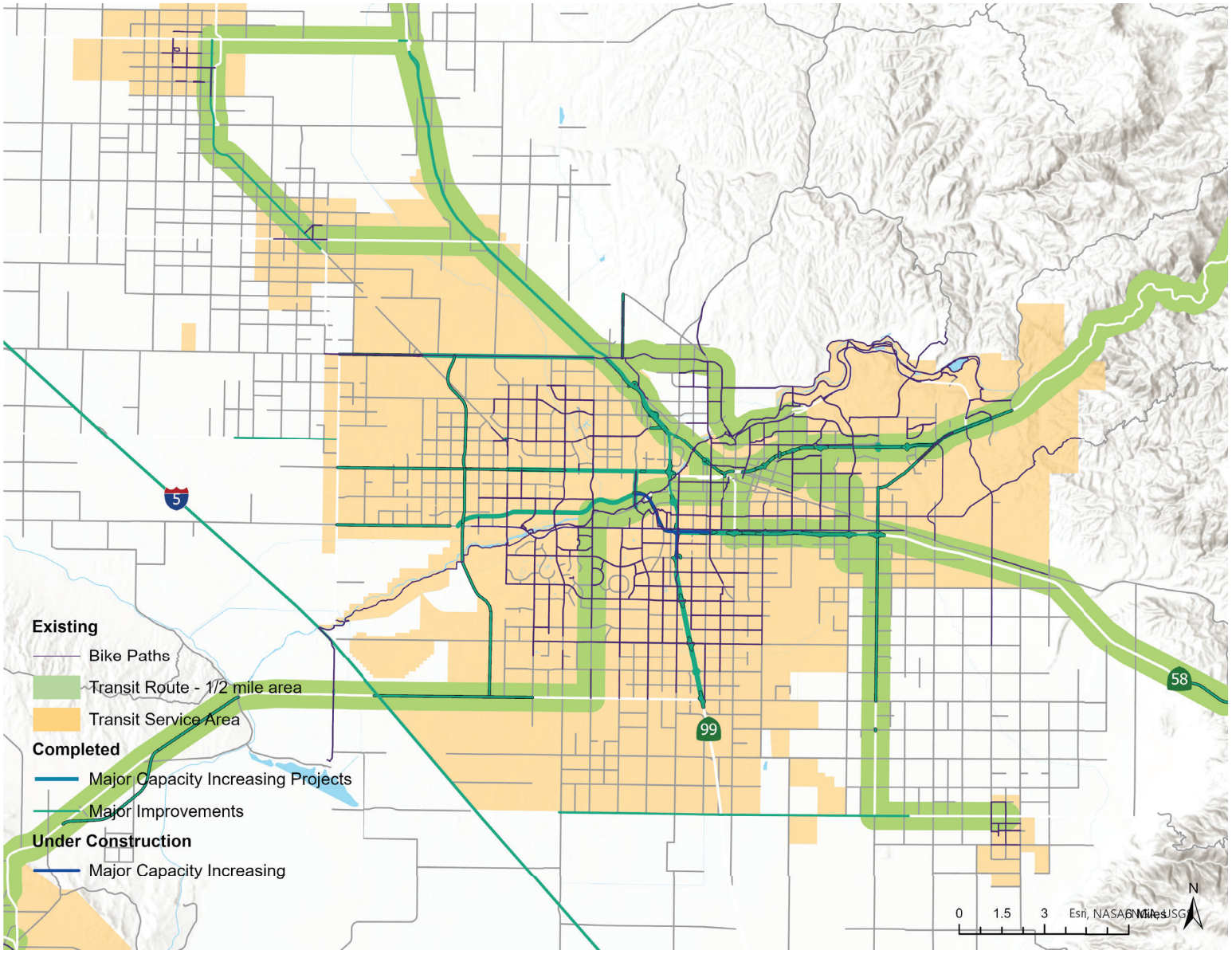


SOURCE: Kern COG, 2026

FIGURE **4.16-1**

IMPACT SCIENCES

Countywide Regional Transportation Systems



SOURCE: Kern COG, 2026

FIGURE **4.16-2**

IMPACT SCIENCES

Metro Bakersfield Regional Transportation Systems

Table 4.16-2
Rural Functional Classification System-Definitions

Classification	Primary Function	Direct Land Access*	Speed Limit**	Parking***
Freeway/Expressway	Traffic Movement	Safety Controls	55-70	Prohibited
Arterial	Traffic Movement/ Land Access	Safety Controls	55	Permitted
Collector	Distribute Traffic Between Local Streets & Arterials	Safety Controls	55	Permitted
Local	Land Access	Safety Controls	55	Permitted

** Access to arterials is generally limited or restricted if it provides access to a land subdivision or an industrial, commercial, or multi-family use. Access is granted on a controlled basis to parcels fronting on expressways where there is not a frontage road or access to another road.*
*** All County roads have a 55 mph operating speed unless otherwise indicated.*
**** Parking is permitted on all County roads unless otherwise indicated.*
Source: Highway Functional Classification - Concepts, Criteria and Procedures US Department of Transportation, Federal Highway Administration (1989)

Existing Public Transit and Para-transit Service

Kern County's existing public transportation services include public transit, Amtrak, and other private carriers such as Greyhound. Local and regional public transit is available within and between 16 Kern County communities. From 2024 to 2025, public transit services in Kern County saw an approximate 12% increase in passengers, up by approximately 519,144 passengers to 4.7 million passengers (see **Table 4.16-3** below). [1] Total transit ridership (including all transit providers reported through State Controller transit financial transaction data) declined substantially during the COVID-19 pandemic, decreasing from approximately 8.3 million passengers in 2018 to approximately 6.5 million passengers in 2020.[2] The more recent ridership data presented in **Table 4.16-3** reflect Kern COG transit operator data and indicate continued recovery in transit use throughout the region following the COVID-19 pandemic.

The County of Kern operates Kern Transit (KT), which provides service to the unincorporated communities of Buttonwillow, Lamont, Kern River Valley, Frazier Park, Rosamond, and Mojave. In addition, the County has agreements with several small cities to share the cost of providing transit service to County areas surrounding incorporated places, i.e., Delano, Eastern Sierra Transit Authority, Shafter, Taft, Tehachapi, and Wasco. Kern Regional Transit also provides intercity service between Delano/McFarland/Wasco/Shafter/Bakersfield; Lamont/Bakersfield; Lake Isabella/Bakersfield; Frazier

1 Kern COG, *Monthly Ridership,* available at: https://www.kerncog.org/wp-content/uploads/2025/09/transit_monthly_ridership.pdf , accessed April 17, 2026.

2 Annual Report of Financial Transaction-Transit, 2015 – 2020; Transit Operators State Controllers Report

Park/Bakersfield; California City/Mojave/Rosamond/Lancaster/Palmdale; Lost Hills/Bakersfield; and Taft/Bakersfield.

The 2026 RTP summarizes public transportation services operated within Kern County (see RTP Chapter 5, Table 5-3), with a description of services provided by each public transit provider, including days of service and type of service provided. **Table 4.16-3** indicates passengers transported by Kern County transit operators.

Table 4.16-3
Passengers Transported by Kern County Transit Operators

Operator	2022/2023	2023/2024	2024/2025
Arvin	72,732	59,217	65,186
California City	8,535	8,931	12,897
Delano	86,236	102,047	102,428
GET & GET-A-Lift	3,293,593	3,755,029	4,201,131
Kern Regional Transit	191,850	234,308	269,895
McFarland	5,316	7,426	12,139
Eastern Sierra Transit Authority	7,288	8,757	16,168
Shafter	16,518	19,826	24,218
Taft	27,627	31,122	37,321
Tehachapi	3,407	3,155	4,992
Wasco	12,984	13,899	16,486
Totals	3,726,086	4,243,717	4,762,861

Source: Kern Council of Governments 2026

Golden Empire Transit (GET) is by far the largest public transit operator in the region. GET has provided public transit service for the Metropolitan Bakersfield area since 1973. GET operates 16 fixed routes with a fleet of 69 buses in maximum service. GET's service area covers 111 square miles and serves approximately 500,977 residents. GET-A-Lift provides complementary paratransit service within Metropolitan Bakersfield for those who are physically unable to use the fixed-route service. Elderly and disabled services are also provided by the Consolidated Transportation Service Agency (CTSA). The regular fare for GET is $1.65; for seniors and the disabled, the fare is $0.80. The fare for GET-A-Lift is $3.00.

GET has determined that within Metropolitan Bakersfield, the east and southeast areas exhibit the highest service potential. This analysis is based on population density, income, auto ownership, and age. Other

areas with high transit potential are portions of Oildale and central Bakersfield. The lowest potential rider areas include portions of the southwest and northwest quadrants of the service area.[3]

Total transit ridership across Kern County increased between 2023/2024 and 2024/2025, as shown in **Table 4.16-3**. Ridership for the region's principal transit operator, GET, has also increased in recent years due to service expansion and rising gasoline prices. Ridership for GET peaked in 2010, after a decade of service expansion projects such as new Sunday and evening services, Day Passes, and improved routes. GET has made a commitment to continue improving Kern County's air quality. In 2021, GET began testing electric buses and buses fueled by hydrogen to further reduce Green House Gas (GHG) emissions from its fleet.

Non-Motorized (Active Transportation) Facilities

The use of bicycles as a means of transportation has several appealing aspects for an increasing share of travelers. Bicycling has positive air quality, economic and health impacts and can reduce automobile-related congestion and energy use. Bicycle trips that replace auto travel reduce auto emissions of both criteria pollutants and greenhouse gases. Bicycles do not consume scarce fuel, maintenance is low, and bicycling can be used for commuting as well as for non-work and recreational purposes.

The bicycle's door-to-door capability for shorter trips makes it an attractive alternative mode of transportation in the Kern region when the climate is mild because the flat terrain is ideal for riding. The ongoing implementation of a bikeway system provides connectivity between cities and access to destinations of regional interest, as well as commuter lanes in the Kern region and in many smaller cities within the County.

Bicycle facilities generally fall into three distinct categories: Class I bike facilities are represented by separate bike paths or trails. Class I facilities provide a means of safe and reliable means of transportation or those wishing to cycle or walk to their destinations. Several jurisdictions have variations on Class II facilities (bike lanes), which provide optional striping scenarios to allow on-street parking. The County has a Class III variation that provides a 4-foot delineated shoulder and bicycle route signing in rural areas. In 2017, the Kern Active Transportation Plan identified 751 miles of bicycle and pedestrian facilities in the County and its cities.

The *Kern County Bicycle Master Plan and Complete Streets Recommendations* report was completed in October 2012, as a complementary document to the *Kern County Bicycle Facilities Plan*, adopted by Kern COG in 2001. The Plan contains a compendium of bicycle transportation facilities, both constructed and planned, within and adjacent to Kern County's incorporated cities, including Arvin, Metropolitan Bakersfield, California

3 Kern Council of Governments. 2026. *2026 RTP*

City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, Wasco, and Lake Isabella. More recently, in 2017, *The Kern Region Active Transportation Plan* laid out recommended efforts to be completed by cities and unincorporated areas to obtain and implement funding for active transportation improvements.

These documents identify facilities and provide recommendations for encouraging increased bicycle travel, as well as strategies and actions, to improve conditions for bicycling in the County. Together, the plans provide direction for expanding the existing bikeway network and connecting gaps within the unincorporated communities and Countywide by bettering the bicycling environment. Furthermore, in 2013, the City of Bakersfield adopted the Bakersfield Bicycle Transportation Plan, providing a more in-depth look at existing and planned facilities in Metropolitan Bakersfield.

The currently planned bikeways regional system is described in Chapter 5 of the RTP/SCS. Collectively, the Cities and County of Kern's plans calls for community routes and routes which link communities and provide access to activity centers, including major commercial and employment centers, major recreational sites, and schools. All of the cities in the County and the County itself have planned bikeway facilities, although limited funding meters full implementation. Nevertheless, local agencies continue to add to the inventory of completed bikeways on an ongoing basis, particularly in conjunction with new development.

Kern County is also home to many pedestrian hiking trails and other non-motorized facilities. A major trail within the County is the Pacific Crest Trail, as well as trails on state and federal lands. The Federal Bureau of Land Management, U.S. Forest Service, and the U.S. Army Corps of Engineers maintain trail plans for their respective resource areas.

Aviation

Kern County's airports address a variety of local and regional services. The aviation system connects the traveling public and freight and cargo movers with California's major metropolitan airports. The aviation system serves the US military directly or in an auxiliary fashion. Many of the airports support local farmers as well as police and medical services. Aviation activities also provide recreational opportunities for the citizens of Kern County. Together, the airports provide a viable mobility option for the County's residents and businesses.

Kern County's regional airport system includes a diverse range of aviation facilities. It is comprised of seven airports operated by the Kern County Department of Airports, four municipally owned airports, three airport districts, two privately owned public-use airports, and two military facilities. Meadows Field provides scheduled air carrier and commuter airline service, which serves metropolitan Bakersfield and surrounding communities. Scheduled commuter services are also provided at Inyokern Airport, which

serves communities in the Mojave Desert and eastern Sierra regions. General aviation needs are served by public-use airports, both publicly and privately owned, throughout the County. These serve the full range of business, agriculture, recreation, and personal aviation activities.

In all, Kern County's aviation system includes 14 publicly owned airports:

- Meadows Field
- Kern Valley Airport
- Poso Airport
- Taft Airport
- California City Municipal Airport
- Tehachapi Municipal Airport
- Inyokern Airport
- Elk Hills/Buttonwillow
- Lost Hills Airport
- Wasco Airport
- Bakersfield Municipal Airport
- Delano Municipal Airport
- Mojave Air & Spaceport
- Shafter Minter Field

Characteristics of Kern County's public access airports vary significantly, from size and number of operations to their types of activities and to their expected growth and impact on their local economies. As a group, the airports combine a range of services designed to meet the passenger, business, agricultural, recreational, and emergency service needs for the region.

Kern County's primary airport, Meadows Field, is located on 1,107 acres 4 miles northwest of central Bakersfield, is classified as a commercial service primary airport under the National Plan of Integrated Airport Systems. This facility serves both commercial and general aviation needs for Bakersfield and the southern San Joaquin Valley region. Meadows Field was the first airport for the Bakersfield area and was established in 1927. After serving 345,149 passengers in 2007, Meadows Field experienced a significant decrease in passengers for several years, falling to 100,433 passengers in 2016, largely related to the economic recession. American and United Airlines provided non-stop passenger service to Denver, Phoenix, and San Francisco. One-stop flights are also provided to hundreds of domestic and international destinations.

Kern County is also home to military air bases at China Lake Naval Air Weapons Station and Edwards Air Force Base. These facilities share restricted air space over Eastern Kern (R-2508) and coordinate with local governments and airports in the Joint Land Use Study completed in 2008. Mojave Air & Space Port and Inyo Kern Airport both provide civilian flight-testing and drone testing capabilities. Mojave Air & Space Port is also the first FAA-licensed civilian space flight testing facility in the United States.

Goods Movement: Existing System and Trends

Rail

Trains provide an economical means of transporting bulk goods over long distances. Their ability to haul large amounts of cargo makes for an overall low energy requirement per unit of weight when compared to

truck or air transport. The cost and labor associated with loading and unloading trains inhibits use of rail for short hauls within the state and locally.

Two major rail companies, Union Pacific (UP) and Burlington Northern Santa Fe (BNSF), serve Kern County. UP representatives report that they operate an average of 19 trains per day through the San Joaquin Valley, carrying food, general freight, grain, and lumber. The San Joaquin Valley Railroad operates a regional freight service between Tulare, Fresno, and Kern counties on leased UP and BNSF branch lines connecting outlying areas to mainline carriers. They move freight comprised primarily of agricultural and petroleum-based products.

Most cargo shipped by rail to and from Kern consists of bulk items such as grains, food products, and oil products. Rail transport provides the option of specialized rail cars such as flatbeds, refrigerated boxcars, fuel tankers, and piggyback cars. These specialized rail cars allow transport to move a large variety of goods, giving rail an advantage over other transportation modes for distances of more than 500 miles. Transport by rail is generally less expensive for long hauls than air or truck transport; however, rail is limited by speed, by fixed track, and by scheduling.

The region is beginning to experience increased shipments of North Dakota crude oil by rail tanker car to destinations in Kern. These unit trains are destined for smaller refineries in Kern; however, plans are underway for a new intermodal rail-to-pipeline terminal allowing the oil to be shipped to the major refineries in the Bay Area and Long Beach from Kern.

A major example of rail limitation is the route over Tehachapi Summit. Part of the route is single track, and although tunnels have been modified to allow double-stacked containers to pass through, traffic in the opposite direction is often diverted to sidings, creating a congested bottleneck. With the Tehachapi Pass capacity improvement project jointly funded by the State of California and the BNSF, the number of trains that pass through the summit daily has increased from 35 to 50 trains.

Inland Port and Intermodal Rail Facilities

Intermodal rail terminals are the starting and ending points for trains, as well as the sites of crucial transshipment (cargo transfers) between modes. Terminals vary widely in configuration, capacity, and operations. Kern's location at the geographic center of population for California, as well as being located at the central crossroads of the state, has seen the development of intermodal rail facilities, distribution centers, and value-added production facilities.

Most cargo shipped by rail to and from Kern is bulk items. Rail transport provides the option of specialized rail cars such as bulk hoppers, flatbeds, refrigerated boxcars, fuel tankers, and piggyback cars. These

specialized rail cars allow movement of a large variety of goods, giving rail an advantage over other transportation modes for distances over 500 miles. Transport by rail is generally less expensive for long hauls than air or truck transport; however, rail is limited by speed, fixed track, and scheduling. Kern has one of the primary rail bottlenecks in the state. The UP/BNSF route over the Tehachapi Mountains is mostly single track. Traffic in the opposite direction must stop on sidings, and speeds are limited to 25 MPH. The Tehachapi Pass capacity improvement, jointly funded by the State of California and the BNSF, added/improved three sidings, increasing the capacity from 35 to 50 trains per day. In 2008, a facility opened in Delano, consolidating most of the perishable shipping activity in the southern San Joaquin Valley. The facility hauls refrigerated box car units between Delano and Albany, New York, in six days, where they are distributed to East Coast grocery store chains. The facility was acquired by UP in 2017 and marketed as UP Cold Connect. However, the facility was closed in 2020, in part due to increased operational costs and competition from low trucking fuel costs. Other intermodal distribution facilities include locations for bulk shipping of agricultural products such as grains, as well as coal, propane, and specialty oil products.

The City of Shafter owns and operates the Shafter Rail Terminal (SRT), where 1,500 rail cars are serviced annually. In 2014, the City of Shafter completed a $3 million expansion funded with Congestion Mitigation and Air Quality funds that enabled the facility to handle all levels of service, including intermodal, boxcar, tankers, hoppers, and gondolas. The City of Shafter also invested in a Container Yard and is developing a city-owned containerized freight transload operation.

Transload Hubs

Transloading is the process of transferring a shipment from one mode of transportation to another. Transload Hubs services major retail distribution centers such as Target, Ross, American Tire, and Bakersfield Pipe and Supply. Expansion plans include establishing a grain transload facility that would bag and load into shipping containers, bulk grain shipments from the Midwest. The containerized unit trains could include additional products from the region, ranging from almonds to specialized oilfield equipment.

The City of Shafter is actively promoting two inland port locations through long-range planning and investment. An inland port is a cargo facilitation center, where a number of import, export, manufacturing, packing, warehousing, forwarding, customs, and other activities take place in close proximity. This facility could function as an inland sorting and depository center for ocean containers transported to the inland port via truck or rail.

Early efforts are more focused on the BNSF mainline adjacent to the WIP. The facility's first phase would include a container hub allowing distributors to drop empty containers at the site that other drivers can pick up. Filling empty containers has the potential to eliminate a large number of empty truck trips over the Grapevine and through the Los Angeles basin. The plan would benefit regional air quality by bringing efficiency to the logistics system in addition to creating jobs. A second facility has been discussed with the UP near the GAF Materials Corp. It is important to note that the City of McFarland has begun long-range planning for an intermodal facility along the UP, and Delano has been a site for UP's refrigerated boxcar food train service for more than 10 years.

The Tejon Ranch Commerce Center (TRCC) is the site of the largest activated Foreign Trade Zone (FTZ) in California, at 177 acres, with the ability to expand to 500 acres. FTZ's are sites near ports of entry where foreign and domestic merchandise considered international trade can provide important cost-saving benefits involving customs duties and other charges. Users can obtain permission from customs to move merchandise directly from the port of arrival to the FTZ, avoiding delays at congested ports. The SRT, UP, and TRCC are strategically located proximate to major transportation routes serving both Northern and Southern California, as well as the regions to the east.

Other intermodal rail hubs include the Grimmway packing facility in Southeast Bakersfield and numerous bulk shippers like expanding oil and gas refining operations that receive oil shipments from the Midwest and send refined products as far away as New England. Another transfer facility is a RoadRailer facility, where custom truck trailers designed to connect directly to rail wheelsets can easily switch from truck to rail; many RoadRailers use existing rail yards as transfer points.

Trucks

Trucking is the most commonly used freight transport mode; its popularity stems from its flexibility, timely delivery, and efficiency for hauling distances up to 600 miles. Trucking, however, can be more expensive than rail for longer hauls because of higher per-ton energy costs. In addition, trucking is a major cause of street- and highway-surface failures, necessitating a higher level of road maintenance. A fully loaded 80,000-pound truck has an impact on roads equal to the passage of approximately 9,600 cars.[4] Thus, heavy trucks contribute disproportionately to roadway deterioration; moreover, deferred maintenance and water intrusion in the roadbed continue to cause additional road damage. As a result, Kern County streets and highways are subject to relatively rapid deterioration and higher rates of pavement failure.

---

4 Government Accountability Office, *Truck Weight and Its Effect on Highways,* July 1979. Available at: https://www.gao.gov/products/109954 , accessed April 17, 2026.

The San Joaquin Valley Interregional Goods Movement Plan (2013), along with subsequent regional goods movement planning efforts, identifies trucking as the primary mode for freight movement throughout the San Joaquin Valley. In the San Joaquin Valley, trucks carry more than 90 percent of outbound, inbound, and intraregional tonnage. Of the 425 million tons moved by truck into, out of, or within the San Joaquin Valley in 2007, more than half were intraregional moves with both origins and destinations in the Valley. This is due to the many interdependencies within the Valley's agricultural and energy-producing sectors. Inbound commodities to the San Joaquin Valley account for about 29 percent of the non-through flows and originate in diverse locations, including the San Francisco Bay Area, Southern California, the Central Coast, and from outside of California. Outbound tonnage comprises about 22 percent of all non-through moves; again, destined for locations in the San Francisco Bay Area, Southern California, the Central Coast, and areas outside of California. More recent regional goods movement planning efforts continue to focus on freight connectivity, truck routing, intermodal facilities, and goods movement efficiency throughout the San Joaquin Valley region.[5]

Major interregional highway corridors handle relatively high volumes of heavy truck traffic. According to the I-5/State Route (SR)-99 Origin and Destination Truck Study (October 2009), the vast majority of heavy-duty trucks traveling on those corridors are 5-axle Double Unit trucks (where one unit is the tractor). There are slight differences in the mix of trucks between fall and spring. Due to their size and slower speed, trucks lead to congestion and reduced levels of service on rural highways and local streets. Like automobiles, trucks also have an adverse effect on air quality. An ever-increasing array of federal, state, and air district regulations on truck emissions continues to improve this situation. For example, the Ports of LA/Long Beach, alternative-fueled and electric trucks are showing substantial benefits for local air quality.

While the San Joaquin Valley's major trucking corridors are centered on the north-south arteries of I-5 and SR 99, other state highways, such as SRs 46 and 58, play key distribution roles as well. As Kern County expands its population and employment base, the need for direct, high-capacity east/west truck corridors becomes increasingly crucial given the need for goods movement in and through the region. Special attention must be given to the interregional routes to ensure that they remain in serviceable condition and that major reconstruction costs are minimized.

Just-In-Time Delivery

Logistics, agriculture, food processing, energy production, and petroleum refining all provide a stable base to the economy of Kern County, and all are dependent on the goods movement infrastructure. Population and economic growth pressures have resulted not only in the loss of agricultural land, but also an increase

5 San Juaquin Valley Regional Policy Council, Inter-Regional Goods Movement, 2026. Available at: https://sjvcogs.org/valleywide_activities/good-movement/ , accessed April 30, 2026.

in traffic congestion on the rural roadways that facilitate the "farm to market" goods movement. This congestion affects the safe and timely delivery of fresh produce to market and processing plants. Farm-related transportation also involves the need to move farming equipment along rural roadways. These roadways are usually single-lane with limited shoulders. Heavy, slow-moving farm equipment along these roads conflicts with commuter travel requirements and can create unsafe travel conditions.

The goods movement industry has fully embraced the concept of "just-in-time delivery," which replaces many warehouses with freight haulers. With just-in-time delivery, the efficient and timely movement of freight along highways and railways becomes essential to Kern's economic growth and development.

Goods Movement Studies

In 2023, Kern COG completed the Kern Area Regional Goods-movement Operations (KARGO) Sustainability Study Phase II in coordination with regional stakeholders. The study builds upon the initial Phase I effort and focuses on implementation strategies, including infrastructure improvements, funding mechanisms, and policy tools needed to support projected growth in goods movement while reducing associated impacts. The 2023 KARGO includes key takeaways to be further explored in the in-progress 2026 KARGO Study.

- Buildout of current general plans will surpass the planned capacity of the circulation elements in those plans. Roadways cannot be widened enough to maintain the adopted level of service goals at full buildout of the existing plans. Future general plan amendments from Agriculture and industrial land uses will compound this situation.

- Roadway network improvements are needed to reduce the impact of inevitable increases in future truck traffic in and through our communities.

- District 1- Bakersfield and Shafter have the highest growth in industrial development and truck trips generated by these uses. District 2- Tejon and South County is the second highest

Other Goods Movement Modes

Air freight service is characterized by the fast shipment of small items of high value over long distances for high cost. While air freight is a specialized transportation mode, it accounts for an estimated 33 percent of the export values in California. Air carriers depend heavily on truck transportation for the pick-up and drop-off of goods for transport. Air freight is currently limited in Kern, but with Meadows Field's expansion and proximity to Los Angeles, air freight carriers may increase operations at Meadows Field.

Various pipelines carry natural gas, crude oil, and other petroleum products throughout Kern County. Storage, pumping, and branch lines are used to distribute those products. Southern California Edison (SCE) and Pacific Gas and Electric Company (PG&E) are responsible for the maintenance and operation of the natural gas line, while major petroleum corporations are responsible for the crude oil pipelines throughout the region. State and federal agencies regulate the use of pipelines.

Kern lies at the crossroads of many pipeline systems connecting the West Coast and the nation. This pipeline network provides opportunities for expansion and creation of new terminal facilities. Kern is host to both natural gas and propane intermodal terminals. There are currently natural gas pipeline networks connecting Kern to the Midwest. In recent years, Kern has experienced an increase in shipments of crude oil by rail from the Midwest to local refineries and terminals. Kern's extensive pipeline network provides opportunities to distribute this oil to refineries in the Bay Area and Southern California.

Hazardous Material Movement. More than 50 percent of all goods transported throughout the world are hazardous to some degree.[6] Within the Kern region, emphasis is placed on hazardous materials routing and training of emergency personnel in the event of an accidental spill. Each year, more than 4 billion tons of hazardous products and waste are transported throughout the United States. Interstate transportation of hazardous products and waste through the Kern region on Interstate 5 and State Route 99 increases the probability of dangerous spills. The County of Kern and the City of Bakersfield maintain Hazardous Material Response Units. Potentially adverse effects associated with transporting hazardous materials can be partially mitigated by restricting roads available to these shipments. Under California law, transportation of hazardous waste must be carried out via the most direct route over interstate highways whenever possible. Exceptions can be made to avoid highly congested and densely populated areas.

Kings County, northwest of Kern County, is the site of a Class 1 hazardous waste facility. The facility, located at Kettleman Hills, draws trucks carrying hazardous materials from all western states. The presence of these trucks on regionally significant routes increases the probability of dangerous spills.

Hazardous shipments by rail are becoming a growing concern as well. Increased shipments of petroleum products need to be protected against spills and fire. The Kern County Fire Department has specially trained hazardous material (HAZMAT) spill responders funded by the oil industry to respond to transportation-related emergencies.

---

6 International Labour Organization, Basics of Chemical Safety. 2004. Available online at: https://www.ilo.org/legacy/english/protection/safework/cis/products/safetytm/transpo.htm, accessed April 26, 2026.

The Federal Rail Administration and the National Transportation Safety Board Transportation regulate hazardous materials shipment by rail. Recent increases in crude oil shipments by rail have the potential to increase rail related safety incidents. Rail line maintenance is the responsibility of the private company that owns and operates the line. Many of these routes pass through urban areas and near sensitive land uses such as schools, hospitals, and residential areas. Rail shipments through urban areas and on local rail spurs usually travel at slower speeds than in rural areas reducing the possibility of major safety related accidents. In addition, shipping by rail is often safer than shipping by truck because rail tankers can reduce the number of trucks on the road hauling hazardous materials by 4 to 10 times, reducing the chances of trucking related accidents.

4.16.2 REGULATORY FRAMEWORK

4.16.2.1 Federal

FHWA Rescission of the "Build a Better America" Memoranda

In March 2025, the Federal Highway Administration (FHWA) rescinded the 2021 and 2023 "Policy on Using Bipartisan Infrastructure Law Resources to Build a Better America" memoranda. The rescission removed prior federal guidance that emphasized climate change, environmental justice, equity, and greenhouse gas reduction considerations in transportation project funding and implementation. According to the U.S. Department of Transportation, the rescission was intended to reduce regulatory burdens and refocus transportation programs on infrastructure delivery, freight mobility, safety, and commerce-related objectives.[7]

Federal Clean Air Act (CAA) Transportation Conformity

Congress passed the first major CAA (42 U.S. Code [USC] 7506(c)) in the 1970s, which gives the U.S. EPA primary responsibility to regulate mobile and stationary sources of emissions and directs states to develop SIPs and required conformity determinations for areas designated nonattainment against the NAAQS. Conformity analysis and determination can be done at a regional level. Kern COG provides a regional transportation conformity analysis in the Plan to address nonattainment. The regional conformity determination is updated every 4 years with the RTP and associated FTIP and is done as a part of the project-level conformity process for regionally significant projects as they occur.

---

7 U.S. Department of Transportation Federal Highway Administration, *U.S. Transportation Secretary Sean P. Duffy Rescinds Memos Issued By Biden Administration That Injected Social Justice, Radical Environmental Agenda Into Infrastructure Funding Decisions*, March 10, 2025. Available at: https://highways.dot.gov/newsroom/us-transportation-secretary-sean-p-duffy-rescinds-memos-issued-biden-administration

Metropolitan Transportation Planning

The provisions of Title 23 USC Section 134 *et seq.* provide direct authority for Metropolitan Planning Organizations (MPOs) such as Kern COG to act as a regional transportation planning organization with direct responsibility for carrying out the Regional Transportation Plan (RTP). Kern COG is tasked with carrying out the transportation planning process and adopting long-range transportation plans. Collaborating with state and public transportation operators, Kern COG undertakes a performance-driven, outcome-based approach to planning the Kern County region. Kern COG must prepare a transportation plan to be updated every four years, including identification of transportation facilities and factors for each mode of non-motorized transport to major roadways, transit, multimodal and intermodal facilities, and connectors that should function as an integrated system serving regional transportation functions. The scope of the transportation planning process is to provide consideration of projects and strategies that will achieve the following objectives:

- Increase the safety of the transportation system for motorized and non-motorized users;
- Increase the security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment by promoting consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight; and
- Emphasize the preservation of the existing transportation system.

Fixing America's Transportation Act (FAST)

On December 4, 2015, President Obama signed the Fixing America's Surface Transportation (FAST) Act (Pub. L. No. 114-94) into law—the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment. The FAST Act builds on the changes made by MAP-21. It is the first long-term surface transportation authorization enacted in a decade that provides long-term funding certainty for surface transportation. The FAST Act authorizes $305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs. The FAST Act maintained the focus on safety, keeping intact the established structure of the various

highway-related programs, continued efforts to streamline project delivery, and provided a dedicated source of federal dollars for freight projects.

Under the FAST Act, the U.S. Department of Transportation required that MPOs, such as Kern COG, prepare long-range transportation plans and update them every four years if they are in areas designated as "nonattainment" or "maintenance" for federal air quality standards. Before enactment of the FAST Act and its predecessor, MAP-21, the primary federal requirements regarding long-range transportation plans were included in the metropolitan transportation planning rules (23 CFR Part 450 and 49 CFR Part 613). The FAST Act makes a number of changes to the statutes that underpin these regulations. Per federal requirements, long-range transportation plans must:

- be developed through an open and inclusive process that ensures public input; seeks out and considers the needs of those traditionally underserved by existing transportation systems; and consults with resource agencies to ensure potential problems are discovered early in the planning process;
- be developed for a period of not less than 20 years into the future; long-range transportation plans must reflect the most recent assumptions for population, travel, land use, congestion, employment and economic activity;
- have a financially constrained element, transportation revenue assumptions must be reasonable, and the long range financial estimate must take into account construction-related inflation costs;
- include a description of the performance measures and performance targets used in assessing the performance of the transportation system;
- include a system performance report evaluating the condition and performance of the system with respect to performance targets adopted by the state that detail progress over time;
- include multiple scenarios for consideration and evaluation relative to the state performance targets as well as locally-developed measures;
- conform to the applicable federal air quality plan, called the State Implementation Plan, for ozone and other pollutants for which an area is not in attainment; and
- consider planning factors and strategies in the local context (California Transportation Commission, 2010).

Infrastructure Investment and Jobs Act (IIJA)

In November 2021, the Infrastructure Investment and Jobs Act (IIJA) (Pub. L. No. 117-58), also referred to as the Bipartisan Infrastructure Law, was signed into law. The IIJA provides approximately $550 billion in new federal investment over five years for transportation, water, energy, and other infrastructure systems, representing a substantial increase in federal funding for surface transportation programs. The Act builds upon and reauthorizes prior federal surface transportation legislation, including the Fixing America's Surface Transportation (FAST) Act, and establishes the current federal framework for transportation planning and funding.

The IIJA emphasizes improving the condition and performance of the national transportation system, enhancing safety, reducing congestion, improving freight movement, and supporting economic competitiveness. The Act also places increased emphasis on climate resilience, reduction of greenhouse gas emissions, and the transition to cleaner transportation technologies, including funding programs to support zero-emission vehicles, charging infrastructure, and alternative fuels.

For metropolitan planning organizations (MPOs), such as Kern COG, the IIJA maintains requirements for performance-based planning and programming and strengthens consideration of multimodal transportation systems, including public transit, bicycle, and pedestrian facilities. The Act also expands funding opportunities for freight and goods movement projects, including programs focused on improving supply chain efficiency and reducing impacts associated with goods movement activities.

National Response Framework

The National Response Framework (NRF) presents the guiding principles that enable all response partners to prepare for and provide a unified national response to disasters and emergencies. It establishes a comprehensive, national, all-hazards approach to domestic incident response. The National Response Plan was replaced by the NRF effective March 22, 2008.

Aviation and Transportation Security Act (ATSA) by the 107th Congress: The Mission of the Transportation Security Administration (TSA)

Following the September 11, 2001, attacks, the Transportation Security Administration (TSA) was created under the 107th Congress as Public Law 107–71. The ATSA created the TSA to oversee the security of the nation's transportation systems. The TSA is a component of the DHS and is responsible for security of the nation's transportation systems. With state, local, and regional partners, the TSA oversees security for highways, railroads, buses, mass transit systems, and ports. A vast majority of its resources are dedicated to aviation security, and it is primarily tasked with screening passengers and baggage.

The Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 (DMA 2000) provides an opportunity for states, Tribes, and local governments to take a new and revitalized approach to mitigation planning. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 by adding Section 322 – Mitigation Planning. Section 322 placed new emphasis on mitigation planning, requiring governments to develop and submit mitigation plans as a condition of receiving any funding from the Hazard Mitigation Grant Program (HMGP) project grants. This Act reinforces the importance of pre-disaster infrastructure mitigation planning to reduce disaster losses nationwide and is aimed primarily at the control and streamlining of the administration of federal disaster relief and programs to promote mitigation activities.

National Incident Management System/Standardized Emergency Management System

The National Incident Management System/Standardized Emergency Management System (NIMS) is a tool for states, counties, and local jurisdictions to respond to catastrophic events through better communication and coordination. NIMS provides a consistent nationwide template to enable federal, state, local, and tribal governments and private sector and non-governmental organizations to work together effectively and efficiently to prepare for, prevent, respond to, and recover from domestic incidents, regardless of cause, size, or complexity, including acts of catastrophic terrorism.

California has a similar management system called the Standard Emergency Management System (SEMS), which is mandated under California Government Code Section §8607(a). State of California Executive Order S205 requires the state to integrate, to the extent appropriate, the NIMS into the state's SEMS.

United States Department of Defense (DOD)

The DOD has several installations within the Kern region. In the case of a large-scale emergency, the DOD is authorized to provide resources when response and recovery requirements are beyond the capabilities of civilian authorities, and these efforts do not interfere with the DOD's core mission of national defense. Requests for Defense Support to Civilian Authorities (DSCA) are made through the local, county, and state authorities is normally accompanied by, or submitted after a request from the Governor for a disaster declaration from the President.

Federal Highway Administration Congestion Management Process

23 CFR 450.320 requires transportation management agencies like Kern COG to address congestion management through a process that provides for safe and effective integrated management and operation of the multimodal transportation system, based on a cooperatively developed and implemented

metropolitan-wide strategy, of new and existing transportation facilities through the use of travel demand reduction and operational management strategies. Federal guidance recommends the use of performance measures that include vehicle-to-capacity ratios and level of service on a selected network of significant routes in a region.

4.16.2.2 State

CARB 2022 Scoping Plan and Vehicle Miles Traveled Reduction Strategies

In 2022, the California Air Resources Board (CARB) adopted the 2022 Scoping Plan (see further discussion of SB 375 below) for Achieving Carbon Neutrality, which establishes an updated statewide framework for reducing greenhouse gas (GHG) emissions and achieving carbon neutrality by 2045. The 2022 Scoping Plan emphasizes reductions in vehicle miles traveled (VMT), expansion of multimodal transportation options, increased use of zero-emission vehicles, and land use planning strategies intended to reduce transportation-related GHG emissions. The Scoping Plan also identifies integrated transportation and land use planning as an important component of achieving the State's long-term climate goals. Additional discussion regarding VMT reduction strategies and transportation-related GHG emissions is provided in **Section 4.8, Greenhouse Gases**.

Regional Transportation Plan Requirements

MPOs are required to prepare RTPs that also meet state requirements. Government Code sections 65080 *et seq.* state that each MPO must prepare and adopt a regional transportation plan directed at achieving a coordinated and balanced regional transportation system, including, but not limited to, mass transportation, highway, railroad, maritime, bicycle, pedestrian, goods movement, and aviation facilities and services. The plan must be action-oriented and pragmatic, considering both the short-term and long-term future, and shall present clear, concise policy guidance to local and state officials.

Under Government Code Section 14522, the CTC is authorized to prepare guidelines to assist in the preparation of RTPs. The CTC's RTP guidelines suggest that projections used in the development of an RTP should be based upon available data (such as from the Bureau of the Census), use acceptable forecasting methodologies, and be consistent with the Department of Finance baseline projections for the region. The guidelines further state that the RTP should identify and discuss any differences between the agency projections and those of the Department of Finance.

The RTP guidelines include provisions for complying with Senate Bill 375 (see below), as well as guidelines for regional travel demand modeling. The regional travel demand model guidelines are "scaled" to different sizes of metropolitan planning organizations (MPOs). Kern COG is included in the "D" grouping

of the MPOs that have populations of between 500,000 and 1 million. The guidelines for regional travel demand modeling for the "D" group include (among many other things) detailed guidelines and standards for validation and sensitivity testing of the model.

Senate Bill 375

Sen. Bill No. 375 (Stats. 2008, ch. 728) (SB 375) requires MPOs to prepare a Sustainable Communities Strategy (SCS) that demonstrates how the region will meet its greenhouse gas (GHG) reduction targets through integrated land use, housing, and transportation planning. Specifically, the SCS must identify a transportation network that is integrated with the forecasted development pattern for the plan area and will reduce GHG emissions from automobiles and light trucks in accordance with targets set by the California Air Resources Board. The targets for Kern COG (along with other San Joaquin Valley MPOs) are a 5 percent reduction in per capita GHG emissions by 2020, and a 10 percent reduction by 2035, in both cases compared with 2005 levels.

While increasing the SB 375 targets, CARB, in its 2018 Progress Report for SB 375, also noted that the increase fell short of what was needed to fully achieve state goals on GHG emissions reduction and climate change mitigation, largely due to the fact that statewide passenger vehicle travel per capita is increasing. In total, the revised SB 375 GHG emissions reduction targets for all of the state's MPOs would result in a statewide reduction of 19 percent (compared to 18 percent from the prior SCS achievement), but CARB estimates a 25 percent reduction is needed to fully meet the GHG emissions reduction goals of the Scoping Plan. The difference between the 19 percent resulting from CARB's updated SB 375 targets and the 25 percent identified need is referred to in other various CARB documents as the "gap."

In the SB 375 target resetting, CARB recognized that additional state action was needed to close this gap. "The recommended targets also recognize that additional State policy and funding tools are being developed to support further VMT reduction that will both help the State overall in achieving needed emission reductions and support MPOs in their ability to achieve higher targets by 2035." The categories of state action to accomplish this, with the help of MPOs and other organizations, were: funding mechanisms to incentivize infill development; improved performance analysis to assist agencies in funding supportive transportation projects; expanding investment in transit and active transportation; and pricing policies and programs. All focus on VMT reduction.

Two additional state documents provide context for understanding how these GHG emissions reduction targets relate to the transportation issues discussed in this section. One is the CARB 2022 Scoping Plan for Achieving Climate Neutrality (2022 Scoping Plan) itself, which also recognizes that statewide collaboration

is needed to address the gap; and further, that the gap in GHG emissions reductions would be closed through VMT reduction strategies:

Discussions among a broad suite of stakeholders from transportation, the building community, financial institutions, housing advocates, environmental organizations, and community groups are needed to begin the process to pursue and develop the needed set of strategies to ensure that we can achieve necessary VMT reductions and that the associated benefits are shared by all Californians.

The second document, published by CARB in January 2019, provided additional detail on the scope of the challenge and its relationship to CEQA: an RTP/SCS that meets the applicable SB 375 targets alone will not produce the GHG emissions reductions necessary to meet state climate goals in 2030 nor in 2050. This means that SB 375 targets are not stand-alone CEQA thresholds for GHG or transportation impact analysis (though SCS compliance may nonetheless entitle projects to certain CEQA exemptions or streamlining procedures pursuant to statute). In other words, a project that is consistent with an SCS may be eligible for certain exemptions, but compliance does not necessarily more-broadly imply consistency with state climate goals nor with science based GHG reduction targets, in CARB staff's non-binding view. Some land use development projects contemplated in an SCS that will be operational in 2030 and 2050 will be consistent with state climate goals, and SB 375 defines project circumstances under which CEQA streamlining is available to qualified projects consistent with an SCS. Other projects may need to consider additional mitigation measures to further reduce per capita light-duty transportation-related GHG emissions to levels that would not conflict with state climate goals. Likewise, certain transportation infrastructure projects that will be operational in 2030 and 2050 that substantially increase VMT may conflict with state climate goals, even if they are included in an SCS that meets the applicable SB 375 targets.

CARB's 2022 Scoping Plan concluded that a per capita reduction of at least 25 percent below 2019 levels by 2030 and 30 percent below 2019 levels by 2045 in light-duty VMT is needed to reduce overall transportation energy demand and meet the state's climate, air quality, and equity goals (see also discussion in Section **4.8, Greenhouse Gase**s).

Senate Bill 743

Senate Bill 743 (SB 743) was enacted in 2013 and became effective in July 2014. It requires OPR and the Natural Resources Agency to amend the *CEQA Guidelines* through developing criteria for determining the way transportation impacts are measured in California for new development projects, making sure they are built in a way that allows Californians more options to drive less (Pub. Res. Code § 21099(b).). Starting on July 1, 2020, agencies analyzing the transportation impacts of new projects must now look at a metric known as vehicle miles traveled (VMT) instead of LOS. VMT measures how much actual auto travel

(additional miles driven) a proposed project would create on California roads. If the project adds excessive car travel onto our roads, the project may cause a significant transportation impact. This change will help achieve climate commitments, preserve the environment, improve health and safety--particularly for the most vulnerable residents--and boost the economy by prioritizing co-located jobs, services, and housing. It will also reduce the time spent in cars to get places and provide more choices for how people travel, which will help to promote business, provide access to opportunity, and improve the quality of life across California.

SB 743 directed OPR to identify appropriate criteria for the evaluation of transportation impacts. OPR selected VMT as the preferred transportation impact metric and applied their discretion to require its use statewide. SB 743 also established that aesthetic and parking effects of a residential, mixed-use residential, or employment center projects on an infill site within a TPA are not significant impacts on the environment. The revised *CEQA Guidelines* that implement SB 743 became effective on December 28, 2018 and provides that VMT is the basis for evaluation of transportation impacts.[8] Vehicle level of service (LOS) and similar measures related to delay are not identified as appropriate metrics for determining the significance of transportation impacts under CEQA, although they may still be appropriate for evaluation of projects as part of the planning process.

CEQA Guidelines section 15064.3(c) indicates that each jurisdiction throughout the state had until July 1, 2020, to adopt VMT as the metric for evaluation of transportation impacts statewide, but that until that date, lead agencies may elect to use VMT and/or LOS to analyze transportation impacts (although CEQA has already been revised to indicate VMT as the appropriate metric for evaluation of transportation impacts).

The following state guidance has been produced:

- Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018); [9]
- The CARB 2022 Scoping Plan;[10]
- Caltrans (2024 – 2028) Strategic Plan; [11] and

---

8 *CEQA Guidelines* § 15064.3.

9 Governor's Office of Planning and Research. *Technical Advisory – On Evaluating Transportation Impacts in CEQA*. Available online at: http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf, accessed July 25, 2019.

10 California Air Resources Board. *CARB 2022 Scoping Plan* (December 2022). Available online at: https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf , accessed April 30, 2026

11 Caltrans. *Strategic Management Plan 2024-2028*. Available online at: https://dot.ca.gov/-/media/dot-media/programs/risk-strategic-management/documents/2024-28-caltrans-strategic-plan-final-a11y.pdf , accessed April 30, 2026.

- Caltrans Local Review Safety Review Practitioners Guidance. [12]

The Caltrans 2024–2028 Strategic Plan establishes statewide transportation priorities related to safety, climate resilience, economic vitality, multimodal mobility, equity, and system performance. The Caltrans Local Road Safety Plan Practitioners Guidance provides a framework for local agencies to identify transportation safety priorities, analyze collision trends, and develop strategies intended to reduce fatalities and serious injuries on local and regional transportation systems.

With respect to identifying what represents an appropriate threshold of significance for VMT impacts, the CARB 2022 Scoping Plan for Achieving Carbon Neutrality establishes the State's current framework for reducing GHG emissions and achieving carbon neutrality by 2045. The 2022 Scoping Plan emphasizes reductions in VMT, increased multimodal transportation options, transportation electrification, and integrated land use and transportation planning as key strategies for reducing transportation-sector GHG emissions. The 2022 Scoping Plan does not identify new GHG reduction targets for light-duty vehicles but indicates that further action must be implemented in the transportation sector beyond phasing out combustion technology and producing cleaner fuels, (i.e., reduction in VMT). CARB explains that managing total demand for transportation energy by reducing the miles people need to drive daily is also critical as the state aims for a sustainable transportation sector in a carbon neutral economy. Though GHG emissions are declining due to cleaner vehicles and fuels, rising VMT can offset the effective benefits of adopted regulations.

CARB has indicated that guidance with respect to how the aggressive VMT reduction targets in the 2022 Scoping Plan are to be achieved will be forthcoming (including updated SB 375 targets in 2026). As evidenced in CARB's SB 150 report, achieving VMT reductions in California is difficult. The 2022 Scoping Plan relies on many of the same or similar strategies already included in the SCS, it is unclear whether implementation of the suggested strategies in Appendix E of the Scoping Plan would be sufficient to reach the VMT and GHG reduction targets in the 2022 Scoping Plan.

Scoping Plan Appendix D (Local Actions) includes "recommendations intended to build momentum for local government actions that align with the State's climate goals, with a focus on local GHG reduction strategies (commonly referred to as climate action planning) and approval of new land use development projects, including through environmental review under CEQA." While Appendix D encourages local governments to adopt a CEQA-qualified Climate Action Plan (CAP) addressing the three priority areas (transportation electrification, VMT reduction, and building decarbonization), the 2022 Scoping Plan

---

12 Caltrans. Local Review Safety Review Practitioners Guidance, available at: https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/202402-ldr-safety-review-practitioners-guidance-a11y.pdf ,accessed April 30, 2026.

recognized that nearly half of jurisdictions do not have an adopted CAP, among other reasons because they are costly, requiring technical expertise, staffing, funding. Additionally, CAPs need to be monitored and updated as targets change and new data is available. Jurisdictions that wish to take meaningful climate action (such as preparing a non-CEQA-qualified CAP or as individual measures) aligned with the state's climate goals in the absence of a CEQA-qualified CAP should look to the three priority areas of transportation electrification, VMT reduction, and building decarbonization when developing local climate plans, measures, policies, and actions. "By prioritizing climate action in these three priority areas, local governments can address the largest sources of GHGs within their jurisdiction." Scoping Plan Appendix D recognizes that local jurisdictions must balance the need for housing and other considerations while aligning with the state's climate goals. Appendix D also cautions against jurisdictions creating targets that are impossible to meet as a basis to determine a project's significance under CEQA. Ultimately, targets that make it more difficult to achieve statewide goals by prohibiting or complicating projects that are needed to support the state's climate goals, like infill development, low-income housing or solar arrays, is not consistent with the state's goals. The state also recognizes the lead agencies' discretion to develop evidence-based approaches for determining whether a project would have a potentially significant impact on GHG emissions.

Scoping Plan Appendix E (Sustainable and Equitable Communities) provides a Policy Framework to Advance Sustainable and Equitable Communities. Appendix E is relevant to Kern COG's SCS and implementation of SB 375. This policy framework looks to build more sustainable and equitable communities to help California meet the State's goal of achieving carbon neutrality no later than 2045 to prevent the most adverse impacts of climate change and building more inclusive and equitable places. Appendix E discusses opportunities for California to move away from a cars-first model and build communities and infrastructure that enable a wider range of access and mobility choices.

Published prior to the 2022 Scoping Plan, the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR Technical Advisory) also provides non-binding recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. OPR cited to CARB's 2017 *Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals* to reiterate that "at present, consistency with RTP/SCSs does not necessarily lead to a less-than-significant VMT impact."[13] OPR found at that time:

> *Based on OPR's extensive review of the applicable research, and in light of an assessment by the California Air Resources Board quantifying the need for VMT reduction in order to meet the State's long-term climate goals, OPR recommends that a per capita [residential] or per employee [office]*

13 OPR Technical Advisory at p. 11.

> *VMT that is fifteen percent below that of existing [2017] development may be a reasonable threshold.*[14]

OPR further recommended a net increase in total retail VMT compared to existing (2017) may indicate a significant transportation impact.[15] OPR went on to indicate that:

> *Lead agencies can evaluate each component of a mixed-use project independently and apply the significance threshold for each project type included (e.g., residential and retail). Alternatively, a lead agency may consider only the project's dominant use. In the analysis of each use, a project should take credit for internal capture. Combining different land uses and applying one threshold to those land uses may result in an inaccurate impact assessment.*[16]

Since Kern's model generates VMT from all uses within the region, the estimated VMT cannot be compared to OPRs land-use specific targets because it is not possible to separate out the land uses.

For roadway capacity projects, OPR also recommends developing a project-level threshold based on VMT levels required to achieve legally mandated GHG emission reduction targets as set forth in the CARB Scoping Plan and 2016 Mobile Source Strategy by applying the following approach:

1. Propose a fair-share allocation of those budgets to their jurisdiction (e.g., by population);

2. Determine the amount of VMT growth likely to result from background population growth, and subtract that from their "budget";

3. Allocate their jurisdiction's share between their various VMT-increasing transportation projects, using whatever criteria the lead agency prefers. [17]

OPR also provides guidance on how to estimate VMT impacts from roadway expansion projects and suggests the following general mitigation and alternatives:

- Tolling new lanes to encourage carpools and fund transit improvements
- Converting existing general purpose lanes to HOV or HOT lanes
- Implementing or funding off-site travel demand management

---

14 *Id.* at p.10.

15 *Id.* at p. 16

16 *Id.* at p. 17

17 *Id.* at p. 22-23.

- Implementing Intelligent Transportation Systems (ITS) strategies to improve passenger throughput on existing lanes[18]

Additional project-level mitigation measures including in lieu mitigation fees to reduce VMTs are also provided.

While the OPR Technical Advisory remains available on OPR's web site, the 2022 Scoping Plan effectively updates VMT reduction targets; other guidance relative to how to assess impacts may still be applicable as updated by the 2022 Scoping Plan targets.

California Department of Transportation (Caltrans) State Highway System

Caltrans, in conjunction with the California Highway Patrol (CHP), develops, maintains, and operates the State Highway System within Kern County. Kern lies within District 6, which is headquartered in Fresno.

California Transportation Plan (CTP)

The CTP (SB 64; Chapter 711 Section 14536 amended 65073.1) is prepared by the California Department of Transportation every 5 years to provide a long-range policy framework to meet our future mobility needs and reduce greenhouse gas emissions. The CTP defines goals, performance-based policies, and strategies to achieve our collective vision for California's future statewide, integrated, multimodal transportation system by envisioning a sustainable system that improves mobility and enhances our quality of life. The CTP is developed in collaboration with transportation stakeholders such as Kern COG. Through ongoing engagement, the CTP is intended to provide goals and visions to support a fully integrated, multimodal, sustainable transportation system that supports the quality of life: prosperous economy, human and environmental health, and social equity. The CTP fulfills the state's goal to meet the Federal Transportation Improvement Program.

Assembly Bill 1358

AB 1358, also known as the Complete Streets Act of 2008, amended the California Government Code Section 65302 to require that any substantive revisions to a city or county's Circulation Element include provisions for accommodations of all roadway users, including bicyclists and pedestrians.

---

18 *Id.* at p.25.

California Congestion Management Program

The Congestion Management Program (CMP) is the State mandated program (Government Code 65089) aimed at reducing congestion on highways and roads in California. The CMP establishes a designated roadway network of regional significance, roadway service standards, multi-modal performance standards and a land use analysis element to identify and mitigate multijurisdictional transportation impacts resulting from local land use decisions. Federal, State and local transportation funding is contingent upon local agency compliance with the CMP.

California Vehicle Code (CVC)

The CVC provides requirements for ensuring emergency vehicle access regardless of traffic conditions. Sections 21806(a)(1), 21806(a)(2), and 21806(c) define how motorists and pedestrians are required to yield the right-of-way to emergency vehicles.

Executive Order (EO) B-16-2012 on Zero Emission Vehicles

EO B-16-2-12 was signed by Governor Brown on March 23, 2012, to encourage development of the zero emission vehicles (ZEVs) and related infrastructure to protect the environment, stimulate the economy, and improve the quality of life in the region. The goals that are promulgated include setting aggressive targets to meet goals in 2015, 2020, and 2025, supporting the rapid commercialization of clean vehicles, and pursuing policies to promote private sector investment and made-in California technologies. Executive Order B-16-2012 also set a target for 2050 of a reduction of greenhouse gas emissions from the transportation sector equaling 80 percent less than 1990 levels.

In February 2013, an interagency working group developed the ZEV Action Plan which identifies specific strategies and actions that state agencies will take to meet the milestones of the Executive Order. The ZEV Action Plan states that EVs are crucial to achieving the state's 2050 greenhouse gas goal of 80 percent emission reductions below 1990 levels, as well as meeting federal air quality standards, and that achieving 1.5 million ZEVs by 2025 is essential to advance the market and put the state on a path to meet these requirements (Governor's Interagency Working Group, 2013). The ZEV Action Plan was updated in 2016 and again in 2018, with targets of 200 hydrogen fueling stations and 250,000 electric vehicle chargers to support 1.5 million ZEVs on California roads by 2025 and 5 million by 2030. (Governor's Interagency Working Group on Zero-Emission Vehicles, 2016 and 2018). Building on the success and lessons of California's three ZEV Action Plans in 2013, 2016, and 2018, the ZEV Market Development Strategy is designed to help California collectively move forward and deliver zero-emission benefits to all Californians.

In 2020, CARB finalized an agreement with five automakers that require them to produce fleets averaging 51 miles per gallon by 2026.[19]

EO B-32-15 Integrated Action Plan to Improve California's Freight System

On July 16, 2015, Governor Brown issued EO B-32-15, which orders the Secretary of the California State Transportation Agency, the Secretary of the California Environmental Protection Agency, and the Secretary of the Natural Resources Agency to lead other relevant state departments including the California Air Resources Board, the California Department of Transportation, the California Energy Commission, and the Governor's Office of Business and Economic Development to develop an integrated action plan by July 2016 that establishes clear targets to improve freight efficiency, transition to zero-emission technologies, and increase competitiveness of California's freight system. The action plan shall identify state policies, programs, and investments to achieve these targets, and be informed by existing state agency strategies, including the California Freight Mobility Plan, Sustainable Freight Pathways to Zero and Near-Zero Emissions, Integrated Energy Policy Report, as well as broad stakeholder input. The California Sustainable Freight Action Plan was adopted in July 2016.[20]

4.16.2.3 Regional and Local Plans

RTP Congestion Management Program

Federal law requires MPOs to take into consideration congestion's impact on system performance while considering alternative transportation strategies to alleviate those impacts. The Kern COG has integrated the Congestion Management Program in Chapter 5 of the RTP and reflects SB 375 policy. The program provides an innovative mechanism to address congestion through corridor planning when congestion levels exceed the adopted standard. The corridor planning includes alternative strategies such as complete streets and multi-modal level of service to address congestion impacts.

Kern COG Project Delivery Policy and Procedures

---

19 The Hill, "California finalizes fuel efficiency deal with five automakers, undercutting Trump." 2020 Available online at: https://thehill.com/policy/energy-environment/512414-california-finalizes-fuel-efficiency-deal-with-five-automakers/, accessed April 16, 2026.

20 California Department of Transportation. California Sustainable Freight Action Plan. https://dot.ca.gov/programs/transportation-planning/division-of-transportation-planning/strategic-freight-planning/csfap , accessed April 15, 2026.

In November 2016, Kern COG updated the performance-based Project Delivery Policy and Procedure reflecting SB 375 related outcomes.[21] Depending on the funding source requirements, this process provides significant weighting to projects that promote SB-375 related outcomes including VMT reduction, emissions reduction and livability. Performance measures and ranking criteria for the selection of RTIP and CMAQ projects changed to give priority to projects that reduce VMT and emissions and promote livability consistent with the Kern COG SCS framework. Ranking criteria associated with congestion relief, safety, and sustainability were not removed from the RTIP and CMAQ ranking criteria because these outcomes are consistent with the goals of the adopted RTP.

Active Transportation Plan

Adopted by the Kern COG Board in 2018 the Kern Regional Active Transportation Plan contains a prioritized list of bicycle and pedestrian projects along with complete street recommendations for all the Cities and the County of Kern.

Transit Development Plans

A Transportation Development Plan (TDP) updates a municipal or county operated transit system's goals and objectives, develops service alternatives, provides funding estimates, and produces a plan to implement recommended service improvements for a five-year period. A number of agencies within Kern County have TDPs.

Airport Master Plans

Airports within Kern County are regulated by Airport Land Use Plans (ALUPs) and Airport Master Plans.

Local Agency General Plans

State law requires cities and counties to adopt general plans, which must incorporate a transportation circulation element. A general plan's transportation element describes the acceptable operating standards, levels of service, roadway classifications, and transportation related goals and policies of the city or county. Transportation elements also typically address public transit, bicycle, and pedestrian facilities; by law the transportation element must be compatible with the General Plan land element and must not conflict with any plan element. Recent state land use and housing legislation, including Senate Bill (SB) 375, SB 743, SB 9, SB 10, and related housing and infill development policies, increasingly link local land use planning, housing production, and transportation planning objectives. These regulations and policies encourage

---

21 Kern Council of Governments, *Project Delivery*, available at: https://www.kerncog.org/wp-content/uploads/2019/03/project_selection_policy_20190321.pdf , accessed April 17, 2026.

development patterns that reduce VMT, support infill and transit-oriented development, expand multimodal transportation options, reduce reliance on single-occupancy vehicle travel, and improve consistency between transportation improvements and state and local planned growth and economic development patterns. The performance measures used for evaluation of the 2026 RTP in this document are intended to supplement local standards by focusing explicitly on regional system performance.

4.16.3 ENVIRONMENTAL IMPACTS

4.16.3.1 Thresholds of Significance

For the purposes of this PEIR, Kern COG has determined that implementation of the proposed 2026 RTP would result in significant adverse impacts to transportation if any of the following could occur:

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
- Conflict or be inconsistent with *CEQA Guidelines* section 15064.3(b).
- Substantially increase hazards due to geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.
- In addition, the following criterion from **Section 4.20, Wildfire,** is addressed along with emergency access: Substantially impair an adopted emergency response plan or emergency evacuation plan.

4.16.3.2 Methodology

As discussed above, CARB and OPR have recommended VMT thresholds of significance in their guidance documents, however these thresholds are meant to apply at the project-level. CARB notes that the modeling used for the CTF forecast identifies ratios of total statewide VMT to population and that the suggested per capita reductions are not household generated VMT and that values are not directly comparable to output from a local or regional travel demand model. OPR notes that with respect to their recommended thresholds "combining different land uses and applying one threshold to those land uses may result in an inaccurate impact assessment." Since Kern COG's model generates trips from a variety of land uses and trips from each land use cannot be separated, comparison of Kern COG VMT data to OPR thresholds is not appropriate.

CEQA Guidelines section 15064.3(b) provides that local jurisdictions have the ability to select the most appropriate methodology for their jurisdiction or project. As discussed above, historically, methodologies and thresholds have been identified by OPR and CARB, as well as local jurisdictions. These thresholds are discussed in the Regulatory Framework above.

The CARB 2022 Scoping Plan recommends a per capita reduction of at least 25 percent below 2019 levels by 2030 and 30 percent below 2019 levels by 2045 in light-duty VMT to reduce overall transportation energy demand and meet the state's climate, air quality, and equity goals. However, the 2022 Scoping Plan also acknowledges that these targets are not regulatory requirements but that they should inform future planning processes. CARB is not setting regulatory limits on VMT in the 2022 Scoping Plan. Nonetheless, these targets are referenced in this document as the appropriate thresholds of significance at the regional level.

The objective of these thresholds is to meet statewide GHG emissions targets through VMT reductions from the transportation sector. Both CARB and OPR acknowledge that MPO's are tasked with meeting SB 375 GHG emissions targets, and while CARB has determined that meeting these targets will not be sufficient to attain state climate goals, more can be done at the project level. At the project level, lead agencies may consider CARB, OPR and other recommended thresholds of significance and determine which ones are appropriate and feasible for the particular project, or apply alternative thresholds, consistent with *CEQA Guidelines* Section 15064.3 which states, "[a] lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence." See also **Section 4.8, Greenhouse Gases,** for additional discussion on the connection between GHG and VMT and Kern COG's ability to meet SB 375 and consistency with SB 743 guidance and suggested targets as well as statewide climate goals.

Regional conditions for a number of key performance indicators form the basis for the transportation impacts analysis presented in this PEIR. These indicators include VMT (as discussed above), roadway congestion (as measured by LOS), vehicle hours of congestion, shares of transit and non-motorized trips, transit productivity, and miles of bicycle and pedestrian routes. These indicators have been important performance measures throughout the development of the RTP/SCS, and all relate directly to the performance of the region's transportation system.

One VMT is one vehicle traveling on a roadway for 1 mile. Regardless of how many people are traveling in the vehicle, each vehicle traveling on a roadway within the Kern region produces VMT.

For the purposes of the PEIR, VMT is estimated and projected for a typical weekday. VMT has been a primary indicator of travel for policy-makers and transportation professionals for decades. Several features collectively make VMT a key performance measure:

- First, it is relatively easy to calculate VMT by counting traffic on roadways at different locations. It is one of several measures of transportation performance consistently and comprehensively estimated and documented in the Kern region.

- Second, VMT bears a strong and direct relationship to vehicle emissions, although the relationship is becoming more complex moving into the future. Electric and hybrid vehicles, along with state and federal policies pertaining to vehicle fuel efficiency and the formulation of vehicle fuels suggest that on a per VMT basis, emissions for most pollutants will decline relative to today. However, even if emissions per VMT improve, lower VMT will still mean lower emissions.

- Third, VMT can be influenced by policy in a number of different ways. By providing more attractive alternatives to driving alone, VMT can be reduced by shifting from vehicle to non-vehicle modes (i.e., from a car trip to a bike or walk trip), or from single-occupancy vehicle (SOV) trips to higher occupancy vehicle (HOV) trips such as formal or informal carpooling or transit trip). VMT can be influenced by land use patterns as well. A better mix of residential, employment, education, and service uses in an area can allow people to accomplish their daily activities with less driving, and consequently, less VMT. Policies that aim to charge drivers user fees to cover the cost of services they use (such as parking) rather than have taxpayers and other third parties bear these costs also reduced VMT.

- Fourth, VMT correlates with travel time. The more miles driven, the more vehicles on the roadways at any given time and higher numbers of vehicles eventually result in longer travel times.

Transportation data was supplied by Kern COG based on using the Kern Regional Travel Demand Model (RTDM) which incorporates socioeconomic forecast data developed in the Kern Regional Growth Forecast and the Land Use model. This RTDM was used for characterizing the transportation environment for the region divided into nearly 2,000 Transportation Analysis Zones.

Model inputs are listed below.

- Socioeconomic Data by Census Block Group
- Highway Networks
- Land Use and Accessibility for Auto Ownership Model
- Land Use, Parking, and Pricing
- Transit Networks

- External Trips (inter-regional trips)
- Several special generators for military bases and other unique land uses.

The Kern COG Model includes modules that incorporate household characteristics (size, number of workers, income, single-family or multi-family unit); auto ownership; trip generation; trip distribution; mode choice (e.g., single-occupant vehicle, multi-occupant vehicle, transit and active modes (walking and cycling); and traffic assignment to the transportation network. Post processing is used to reflect interregional passenger rail services that are not readily modeled with a regional model.

Determination of Significance

The significance of impacts was determined by applying the significance criteria above to compare current regional transportation conditions to expected future conditions with the Plan. The RTDM provides performance data for future Plan conditions. The performance measure output for year 2049 with the Plan was compared to the existing regional conditions for each significance criterion to determine the significance of impacts. The 2049 transportation model output provides a regional and cumulative level of analysis for the impacts of the Plan on transportation resources.

Approach to Mitigation

As discussed in **Section 1.0, Introduction**, Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

4.16.3. 3 Impacts and Mitigation Measures

Impact TR-1 **Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.**

The 2026 RTP includes a series of individual transportation improvement projects and programs (including a substantial number of public transit, bicycle and trail, and pedestrian projects) and a land use strategy designed to enhance Kern's multi-modal transportation system. Individual transportation or land use projects must be consistent with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, and must conform to evolving requirements for performance and safety standards. The 2026 RTP would increase, rather than decrease, the performance of transit, bicycle, and pedestrian facilities; **Table 4.16-4** shows higher mode shares for each of these modes between 2024 and 2049. Therefore, impacts would be less than significant and no mitigation is required.

Transit Priority Areas

Design for adequate access for transit and active mode users will be essential to realizing the intent of TPAs to reduce driving and increase use of transit, biking, and walking. Individual transportation or land use projects must be consistent with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, and must conform to evolving requirements for performance and safety standards. The 2026 RTP would increase, rather than decrease, the performance of transit, bicycle, and pedestrian facilities; particularly in TPAs. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant at the regional and TPA levels.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less than significant at the regional and TPA levels.

Impact TR-2 Conflict or be inconsistent with *CEQA Guidelines* section 15064.3(b).

CEQA Guidelines Section 15064.3(b) is intended to be applied at the project level; therefore, the myriad transportation and development projects that will occur under the Plan will be required to address the specific requirements, as follows:

(b) Criteria for Analyzing Transportation Impacts.

(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact.

(2) Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152.

(3) Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

(4) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

The 2026 RTP is based on a regional employment and population forecast and accommodates this growth through the implementation of transportation projects and land use strategies. The Plan includes strategies to accommodate projected growth in a manner that increases transportation system efficiency and reduces VMT. Metrics such as VMT, VHT, and VHD have been used throughout the history of the Plan as a measure of the performance of the region's transportation system. Kern COG has traditionally used VMT to assess transportation impacts as it is a more useful tool to evaluate impacts at the regional-scale than delay-based metrics for roadways such as LOS. However, LOS is used as one piece of data to demonstrate overall efficiency of the transportation network.

Traditionally project-level analysis of transportation impacts focused on local-level congestion and delay-based impacts (e.g., intersection and roadway LOS). The analysis of the Plan is at the regional level and evaluates total regional VMT (including consideration of per capita data) and overall efficiency of the network. *CEQA Guidelines* section 15064.3(b) provides that local jurisdictions have the ability to select the most appropriate methodology for their jurisdiction or project. As discussed above, methodologies and thresholds have been identified by OPR and CARB, as well as local jurisdictions.

CARB notes that its modeling assumes continued improvements in vehicle efficiency and fuels and identifies target reductions in per capita VMT at the statewide level. The 2022 Scoping Plan includes more aggressive VMT reduction targets compared to earlier modeling assumptions and emphasizes that these targets are not directly comparable to VMT generated by individual projects or output from local or regional travel demand models. Discussion of CARB's modeling and suggested VMT thresholds under SB 743 is further discussed above and in **Section 4.8, Greenhouse Gases**. OPR notes that with respect to their suggested thresholds (a reduction of 15 percent as compared to existing conditions for residential and office uses and a net increase for retail uses) combining different land uses and applying one threshold to those land uses may result in an inaccurate impact assessment.

Each jurisdiction may select the appropriate methodology and threshold for their jurisdiction and projects as long as the methodology is consistent with *CEQA Guidelines* Section 15064.3(b)(4). Jurisdictions are encouraged to make use of Kern's regional data in establishing thresholds.

The 2026 RTP includes a series of individual transportation improvement projects and programs (street and highway, transit, bicycle and trail, pedestrian and other projects) to help expand and enhance Kern's multi-modal transportation system.

Table 4.16-4 shows changes in VMT and congested vehicle hours between 2024 and the horizon year of the Plan (2049).

Table 4.16-4
Plan Impacts on Key Transportation Measures vs. Existing and 2049 No Project

Indicators & Measures	2020	2024 Existing	2049 Plan	2024-2049 Change with Plan	2049 No Project	2049 Plan vs. No Project % Change
Total VMT per Weekday (Miles, in Thousands)	23,980	23,382	25,447	8.83%	26,826	-5.42%
Congested Vehicle Hours (Level of Service D, E, F)	592,141	493,669	551,175	11.65%	570,838	-3.57%
Congested Vehicle Hours in Core Urban Areas	305,767	263,911	289,277	9.61%	303,920	-5.06%
Other Indicators						
Public Transit (Boardings)	22,838	14,480	16,728	15.52%	16,205	0.45%
Transit (Walk+Drive)	0.60%	0.3%	0.3%	0.0 percentage points	0.3%	0.0 percentage points
Bike+Walk (Non-Motorized)	12.00%	7.1%	7.2%	+0.1 percentage points	7.6%	-0.4 percentage points
Single Occupancy Vehicle (SOV)	39.00%	42.0%	42.6%	+0.6 percentage points	42.8%	-0.2 percentage points
High Occupancy Vehicles (HOV) 2+ per vehicle	47.30%	49.0%	48.2%	-0.8 percentage points	47.6%	+0.6 percentage points
Per Capita Vehicle Miles Traveled (VMT) (All Trips)	26.45	25.69	25.02	-2.61%	26.37	-5.42%

Source: : Kern COG based on Kern COG Travel Model runs; 2024 transit boardings based on APTA and Kern COG data
Note: Values presented in the table may not calculate exactly due to rounding

As shown in **Table 4.16-4**, implementation of the 2026 RTP in 2049 will increase VMT and congested vehicle hours when compared to existing (2024) conditions. Overall, VMT levels will rise by approximately 9 percent by 2049, reflecting Kern's 11 percent population gains during the 24-year period. This increase in absolute VMT will result in an increase in the number of hours Kern motorists will experience congested conditions (defined by Kern COG as roadway traffic Levels of Service (LOS) grades D, E, and F. The Congested Vehicle Hours measure will increase by approximately 12 percent under the Plan compared to 2024 conditions.

LOS is no longer considered an impact under CEQA. However, Kern COG, in its role as Kern's Congestion Management Agency (CMA) maintains the Kern Congestion Management Program (CMP). In its role as CMA, Kern COG uses LOS measurement to assess the regionally significant system of streets and highway facilities. Proposed projects for the highway system are also analyzed for LOS impacts, to help determine and rank the type and number of transportation projects necessary to accommodate current and expected future growth. Use of an LOS performance measure is required by the federal congestion management

process guidance and, therefore, is included within this analysis to help demonstrate the overall performance of the transportation system.

LOS values range from A to F, representing various levels of traffic flow from free flow for A to stop-and-go gridlock traffic for F. Additional variations for LOS values are based on the road type; interrupted traffic flow facilities that include stop signs and signals have a modified version for LOS steps. Uninterrupted traffic flow facilities would include freeways and other highway facilities that do not have fixed traffic elements such as stop signs or signals. The Kern CMP establishes an LOS standard of exceeding (i.e., worse than) LOS E. Local jurisdictions have adopted standards of exceeding LOS C and D.

Kern COG calculated LOS for all regionally significant roadways using the Kern transportation model. The calculations compare projected Plan traffic volumes against roadway facility-specific capacity values. These volume-over-capacity values are translated into LOS values based on accepted industry standards for transportation models.

Results of the 2024 and 2049 Plan LOS segment analyses are shown in **Figures 4.16-3** and **4.16-4**. The projects and policies contained in the 2026 RTP are expected to improve LOS on many roadway segments. However, the figures indicate that, even with the 2026 RTP, 2049 will see an increase in the number of segments that will operate at LOS F, and a larger increase in the number of segments operating at LOS D and E. While LOS C or D may be acceptable for some communities, such segments are at risk of falling to lower levels if currently unforeseeable contingencies result in modestly higher traffic levels.

Table 4.16-4 shows that between 2024 and 2049, under Plan conditions, congested vehicle hours in the County will increase by 11.65 percent and by 9.61 percent in Core Urban Areas. In 2049, without the Plan, congested hours in the County would be 3.57 percent greater, and would be 5.06 percent greater in Core Urban Areas.

Between 2024 and 2049, public transit boardings are projected to more than double in absolute numbers, and transit's mode share will also rise. The share of trips by bicycle and walking will rise by 2.1 percent, and such active modes will represent 7.2 percent of all trips. The share of trips by single-occupancy vehicles will rise to 42.6 percent, and high-occupancy vehicle mode share will increase slightly to 48.2 percent of all trips. The combined effect of these transportation mode shifts and the SCS land use pattern will result in a significant reduction in VMT per capita between 2024 and 2049. Overall VMT per capita will decline by 2.61 percent.

Emerging technologies vary widely when it comes to their effect on VMT, and therefore GHG emissions. Some of these technologies, such as alternative fuel vehicles, micro-mobility, bikesharing and microtransit,

have a mitigating influence on GHG emissions. Others, such as ride-hailing and automated vehicles, are expected to increase VMT and GHG emissions if their business models do not adapt.

For informational purposes, the last two columns of **Table 4.16-4** compare the Plan against the No Project alternative in which new transportation investments cease after 2026, while population and development continue to grow to forecast levels, and development follows a more dispersed pattern than called for in the Plan. Compared to the No Project Alternative, the Plan would result in nearly 5.42 percent less VMT and almost 5 .06 percent fewer hours in congestion. The Plan would also result in an increase in transit use and mode share, and would substantially increase use of active modes, while reducing vehicle use. Both total and per capita VMT measures drop by about 5.42 percent with the Project versus the 2049 No Project alternative.

Potential development projects anticipated to occur under the Plan should consider the CEQA guidance regarding VMT; LOS may be used in the decision-making process, but is no longer an impact under CEQA. In general, as stated in *State CEQA Guidelines* Section 15064.3(b)(1), projects located within TPAs would likely have less than significant transportation impacts. For those projects located outside of TPAs, transportation impacts would be determined based on the project's ability to reduce VMT.

For transportation projects under the Plan, those projects that reduce VMT, such as most transit and bike projects, the assumption is that impacts will be less than significant. However, consistency with the RTP does not necessarily lead to a less than significant impacts. Further, OPR's technical guidance on SB 743 states "building new roadways, adding roadway capacity in congested areas, or adding roadway capacity to areas where congestion is expected in the future, typically induces additional vehicle travel. For the types of projects previously indicated as likely to lead to additional vehicle travel, an estimate should be made of the change in vehicle travel resulting from the project."

Ultimately, the determination of VMT impacts will be made at the project level. As discussed above and elsewhere in this PEIR (see **Section 4.8, Greenhouse Gases**), lead agencies have the discretion to determine the appropriate methodology and level of analysis. As described, there are multiple potential VMT targets. CARB has identified substantially greater reductions in per capita VMT in the 2022 Scoping Plan and emphasizes the need to reduce VMT to meet the State's long-term climate goals, with modeled scenarios generally achieving reductions on the order of approximately 20 to 25 percent by 2030, with additional reductions thereafter (based on specific modeling assumptions and ratios that are not directly comparable to data from regional travel demand models, see discussion in **Section 4.8, Greenhouse Gases**) and OPR has identified 15 percent lower per capita residential and office VMT and no net increase in retail VMT (OPR recommends that these reductions be calculated separately for each land use).

At the regional level, CARB has set a regional target for Kern of a 15 percent reduction in per capita on-road light-duty transportation-related GHG emissions by 2035 relative to 2005. While Kern meets this target, as noted above, CARB has indicated that additional reductions are needed beyond targets set for the MPOs and has identified a "gap" between the regional target and the emissions/VMT reductions necessary to meet the state's climate action goals. Although the region is making progress in per capita VMT reductions, and is making significant strides in the development of new initiatives, projects, and programs in the Plan, and is not interfering with the statewide VMT reductions required to meet the state's climate goals, the Plan does not clearly achieve the necessary level of VMT reductions now forecast by the state to meet AB 32 and SB 32 (as well as associated SB 743 guidance) GHG reduction goals. As discussed above and in **Section 4.8, Greenhouse Gases**, there is a "gap" between the current MPO emissions reduction targets and the emissions/VMT reductions necessary to meet the state's climate action goals.

While CARB acknowledges that Kern COG and other MPOs cannot meet this need without the collaboration and help of the state itself (i.e., through stricter regulation), as well as local partners, at the time of writing this PEIR, it is unknown how CARB and other state agencies, through statewide programs or in coordination with local and regional governments, would meet the identified higher VMT reductions. It is expected that individual projects will need to review their projects in light of CARB and OPR guidance regarding VMT reduction targets to determine the appropriate levels of reductions. In some cases, it could be CARB's targets, or OPRs' 15 percent (for residential and office uses) reduction. Neither the agencies nor the courts have provided clear guidance yet as to the appropriate methodology, and it is expected that there will not be a "one size fits all" approach. Each project will need to be evaluated in light of its particular components and the latest information available from CARB and other sources.

Thus, comparing Plan conditions to existing conditions and despite the benefits shown by implementing the Plan, the Plan would increase VMT, which would be inconsistent with *State CEQA Guidelines* section 15064.3(b) and may not support achievement of the state's VMT goals as identified in the 2022 Scoping Plan, constituting a significant impact requiring the consideration of mitigation measures. Measures intended to reduce VMT are part of the 2026 RTP. These include increasing transit use, ridesharing, and other measures to reduce demand on the transportation system; investments in non-motorized transportation; seeking to optimize land use/transportation connection; other travel demand measures required by local agencies; and key roadway investments targeted to reduce VMT. However, additional mitigation may be required. **Mitigation Measures TR-1** through **TR-4** are described below.

Transit Priority Areas

The 2026 RTP land use policies aim to focus growth in TPAs with enhanced opportunities for Kern residents to access destinations without the use of the automobile. While the Plan would limit VMT growth, it would

not eliminate substantial increases in VMT. Due to transit options, VMT in urban areas would likely be reduced compared to non-TPAs, but would still remain significant due to population and increased intensity of development. As for the region as a whole, impacts on VMT in TPA areas would increase, and mitigation is required; see **Mitigation Measures MM TR-1 through MM TR-4**, below.

Level of Significance Before Mitigation

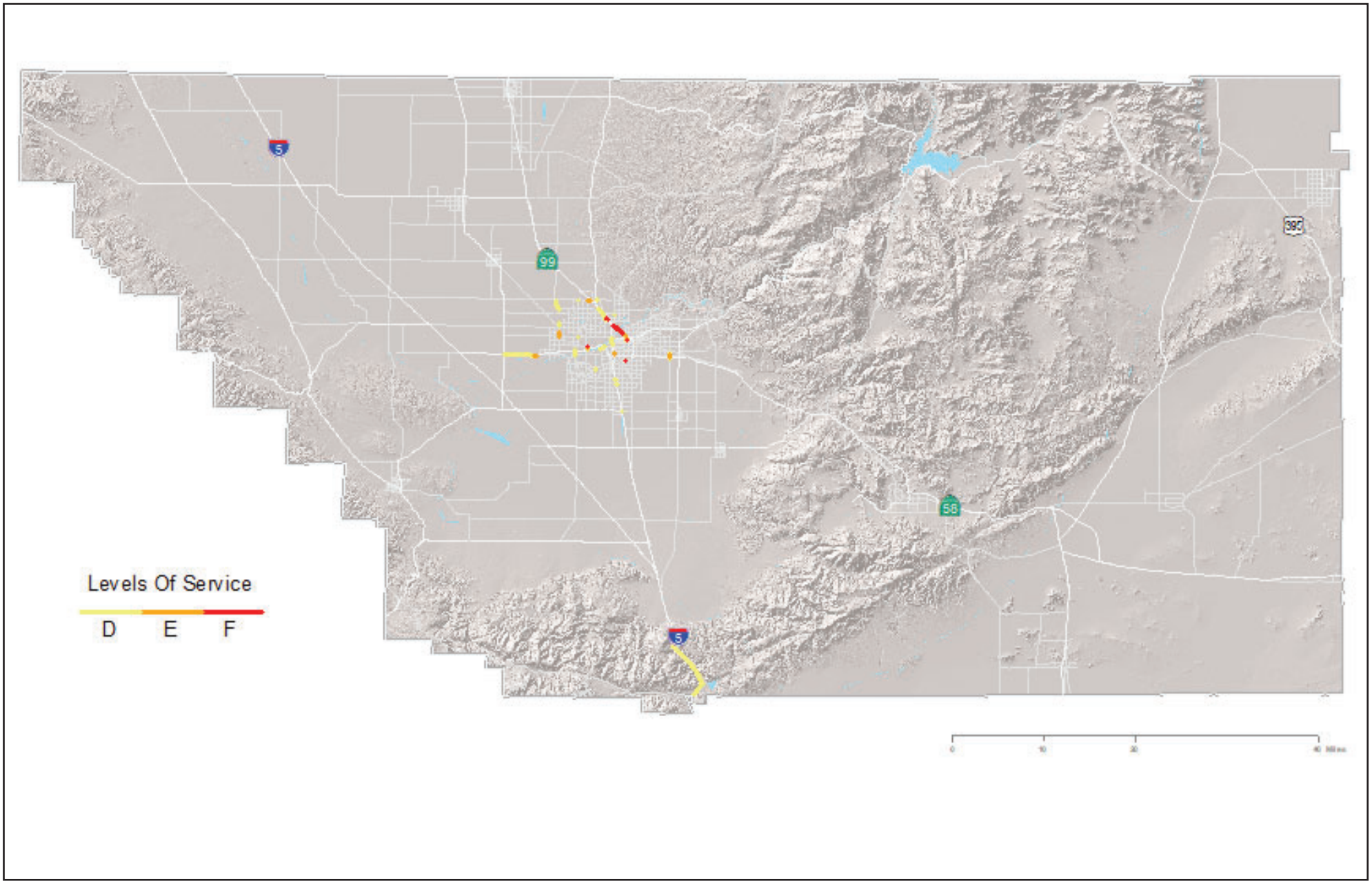
Significant at the regional and TPA levels.

Mitigation Measures

MM TR-1: Consistent with the CMP, Kern COG shall encourage and work with local governments to develop multimodal performance standards to determine how much traffic, during peak hours, is acceptable on state freeways, highways, and major streets within Kern County. Local jurisdictions should incorporate multimodal level of service standards in their circulation plans consistent with AB 1358 California Complete Streets Act of 2008 and as appropriate for each community facility type, place type and corridor type as recommended in the latest Highway Capacity Manual update. In addition, Kern COG will work with local agencies to identify frequency and routing of transit service, in order to assist in coordinating transit service provided by separate operators throughout Kern County.

MM TR-2: In addition to the current Tier 1 and Tier 2 RTP projects, Kern COG shall continue to explore potential measures to reduce vehicular travel. Such measures as land-use strategies, car-sharing programs, additional car- and vanpool programs, additional bicycle programs, and implementation of a universal transit booking and fare collection smart phone application should be considered.

MM TR-3 Kern COG will continue to encourage and facilitate transportation projects that maximize efficiency of the transportation system, and include VMT reduction.



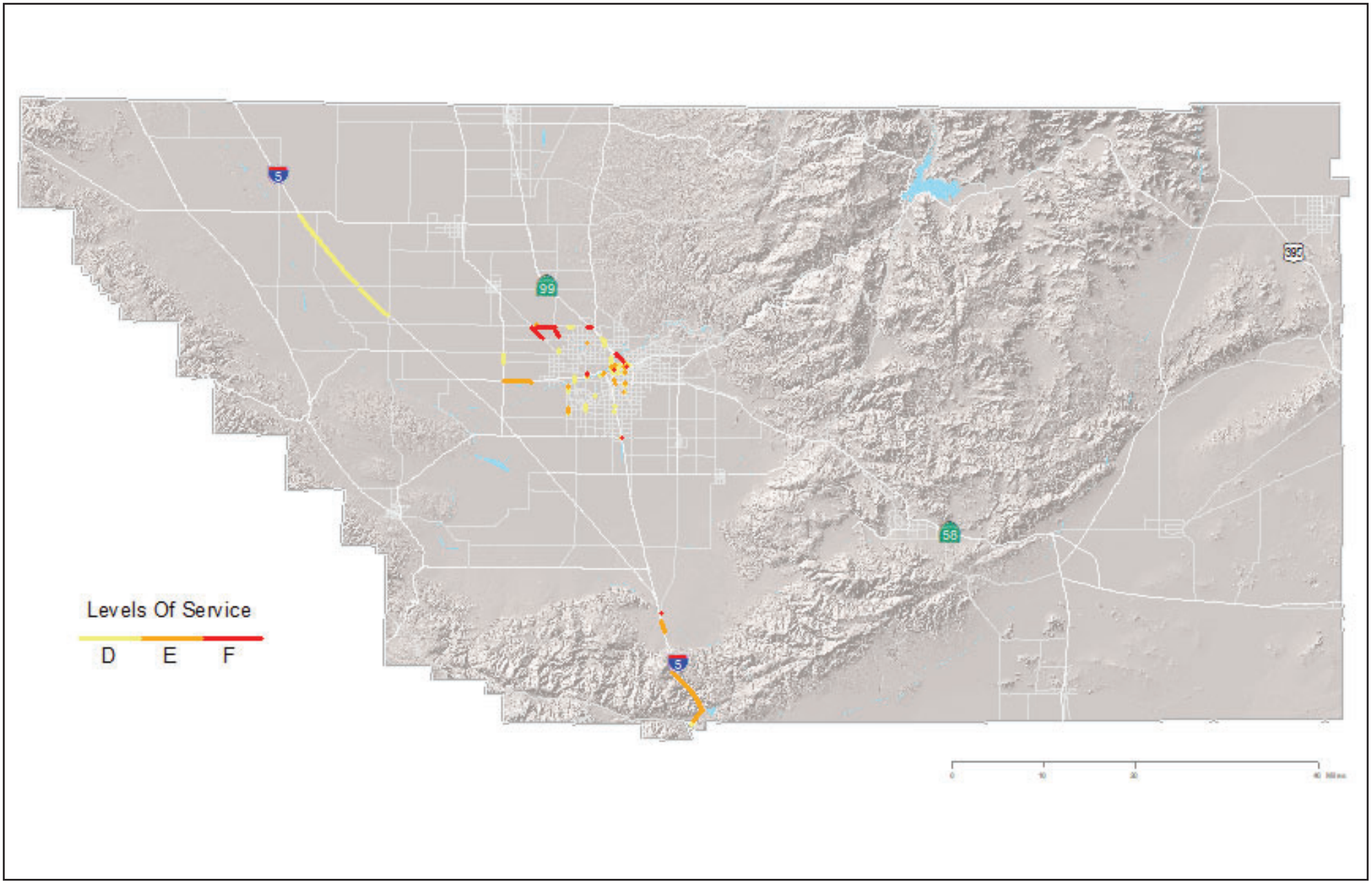
SOURCE: Kern COG, 2026

FIGURE **4.16-3**

IMPACT SCIENCES

2024 Level of Service (LOS)

1170.004•04/26



SOURCE: Kern COG, 2026

FIGURE **4.16-4**

IMPACT SCIENCES

2049 Level of Service (LOS)

1170.004•04/26

MM TR-4 Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to evaluate VMT as part of project specific review and identify and implement measures that reduce VMT including mixed use, alternative transportation facilities (bike racks, transit stops, and pedestrian amenities) as appropriate for each local agency.

Level of Significance After Mitigation

Mitigation Measures **MM TR-1** through **MM TR-4** would reduce increases to VMT and congested vehicle hours. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts would remain significant and unavoidable.

Impact TR-3 **Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).**

Regional and Transit Priority Area Impacts

The 2026 RTP would not result in increased hazards due to design features (e.g., sharp curves or dangerous intersections) or increased conflicts between incompatible uses (e.g., farm equipment and other vehicular traffic). The 2026 RTP land use policies aim to focus growth in TPAs generally located away from high-speed facilities, where potential hazards due to design features tend to be high. Moreover, development in TPAs will increase the number of Kern residents proximate to transit and in areas with good opportunities for walking and biking, making it imperative that facilities for these non-automobile modes are designed to enhance the safety of transit riders, bicyclists, and pedestrians. Design of new transportation facilities, including new pedestrian and bicycle facilities, routinely takes into account potential hazards and avoids risks, and the design of unsafe conditions is not anticipated. Therefore, impacts related to design hazards would be less than significant.

Level of Significance Before Mitigation

Less than significant at the regional and TPA levels.

Mitigation Measure

None required.

Level of Significance After Mitigation

Less than significant at the regional and TPA levels.

Impact TR-4 Result in inadequate emergency access. (See also HAZ-6)

Regional Impacts

Between 2025 and 2049, VMT and congestion would increase, which could adversely impact emergency access. The adequacy of emergency service may be influenced by factors such as staffing levels, emergency response times, technology improvements, management strategies, and mutual aid agreements. The 2026 RTP would generally enhance mobility and access to destinations (including access for emergency vehicles) as compared to the No Project Alternative, but increased VMT and congestion as compared to existing conditions (as described above) could impact emergency vehicle access.

While the 2026 RTP would increase congestion, there is not a direct relationship between predicted travel delay and response times, as California state law requires drivers to yield the right-of-way to emergency vehicles and even permits emergency vehicles to use opposing lanes of travel, the center turn lanes, or bus-only lanes. In some instances, roadway reconfigurations with the implementation of the transportation improvements as part of the 2026 RTP could improve emergency access. For example, a roadway reconfiguration could improve emergency access where a bus-only lane or a contiguous center left-turn lane is introduced where it did not exist. Emergency vehicles may use bus-only lanes for local access to emergency destinations. People traveling by bicycle are required to pull to the side of the road to yield access to emergency providers, regardless of whether they are traveling in a bus-only lane or in a standard travel lane. It is more likely that when en route to an emergency incident, general traffic will merge into the bus-only lane, permitting the emergency vehicle to pass in the through lane to the left. Emergency responders also routinely use the center left-turn lanes, or even travel in opposing travel lanes if needed. Generally, multi-lane roadways allow emergency vehicles to travel at higher speeds and permit other traffic to maneuver out of the path of the emergency vehicle.

Knowing exactly how fire and emergency service access could be affected calls for a great deal of speculation. It is not possible to predict the 2026 RTP impacts at the street level. This is one factor as to why it is not possible to forecast response times. The other is that, as explained above, the relationship between emergency access and traffic and potential impacts associated with emergency access is complex and involves factors such as the following:

- Proximity of emergency service facilities to those they serve.
- Staffing and equipment at fire stations.

- Opportunity for emergency responders to use alternative routes in an area.
- Specific street configuration.
- Project-specific mitigation requirements, such as requiring fire-retardant landscaping, prohibiting construction in fire hazard areas, requiring design features that reduce fire potential, and developing emergency response plans.
- Changing demand for service is complex. For example, with increasing populations, there may be more density and more construction, though new buildings are constructed in accordance with increasingly stringent building and fire codes, making them safer and more resistant to fires, such as requiring fire sprinklers. The population is aging, which may increase demand for services. But it is also feasible that the population may not need additional service, as healthcare and other technologies evolve and are improved.
- Future factors that could increase efficiencies in response, including improvements in technology and management, such as changes in the deployment of equipment and staff and mutual aid agreements.

The fire departments throughout the county are responsible for maintaining adequate response times (see discussion of impacts to Fire Protection in **Section 4.15, Public Services**), and future projects, both transportation and development, would undergo further environmental analysis that would include evaluation and mitigation of impacts to emergency access. Therefore, impacts would be less than significant at the regional level, and no mitigation is required.

Transit Priority Areas

The 2026 RTP land use policies aim to focus growth in TPAs, which are generally located in already developed areas served by emergency and public services or are a part of new development that should be comprehensively planned to include access to emergency and public services. Land use strategies in the Plan encourage more compact development; compact land uses are generally more efficient at serving the public in emergency response. This is often because urban areas tend to be well served with these facilities and also because the more compact land use pattern better facilitates access to specific sites. Emergency vehicles are required to be given right of way during emergencies (lights and sirens), which will continue to be true in the future, allowing emergency vehicles to avoid some congestion. For the same reasons as described above, impacts would be less than significant at the TPA level.

Level of Significance Before Mitigation:

Less than significant at the regional and TPA levels.

Mitigation Measure

None required.

Level of Significance After Mitigation

Less than significant at the regional and TPA levels.

4.16.4 CUMULATIVE IMPACTS

Implementation of the 2026 RTP would result in an increase in density and land use development over the next 24 years. Implementation of the 2026 RTP combined with growth outside the region has the potential to add to VMT increases (and congestion) occurring outside Kern County. As discussed above, implementation of the 2026 RTP would have significant impacts related to increases in VMT that would add to impacts from RTP in adjacent counties. The 2026 RTP would not result in an overall increase in hazards due to design features or an increase in conflicts between incompatible uses. Additionally, it would increase connectivity between Kern and the surrounding region, resulting in increased emergency access. The Plan, when considered with other projects and RTPs, would not conflict with adopted policies and plans regarding public transit, bicycle, or pedestrian facilities, and therefore would not contribute to cumulative impacts in the Kern region or surrounding areas.

4.17 UTILITIES & SERVICE SYSTEMS

This section addresses the existing utilities and service systems (solid waste and wastewater) within the region and evaluates the significance of the changes in these services that could result from the 2026 RTP. In addition, this Program EIR identifies mitigation measures as appropriate and feasible. Sources used in this discussion include the Kern County Waste Management Department, California State Water Resources Control Board, and CalRecycle.

4.17.1 DEFINITIONS

To provide a context for analysis, definitions of terms used in the regulatory framework, characterization of baseline conditions, and impact analysis for utilities and service systems are provided below.

Nonhazardous Municipal Solid Waste: More commonly known as trash or garbage, consists of everyday items that are used and then thrown away, such as product packaging, grass clippings, furniture, clothing, bottles, food scraps, newspapers, appliances, paint, and batteries. This comes from homes, schools, hospitals, and businesses.

Regional Water Quality Control Board (RWQCB): There are nine RWQCBs in California. The RWQCBs protect ground and surface water quality and are responsible for implementing Water Quality Control Plans.[1]

Sanitary Landfill: Sanitary landfills are sites where waste is isolated from the environment until it is safe. It is considered safe when it has completely degraded biologically, chemically, and physically.

Septic Tank: An underground vessel for treating wastewater from a single dwelling or building by a combination of settling and anaerobic digestion. Effluent is usually disposed of through a dispersal system, which consists of one or a combination of leach fields, seepage pits, and/or subsurface drip dispersal systems. Settled solids in the septic tank are pumped out periodically and hauled to a treatment facility for disposal.

Storm Water and Stormwater: In layman's terms, stormwater is defined as an abnormal amount of surface water due to a heavy rain or snowstorm. The term "stormwater," instead of "storm water," is used when employed by the cited source of information. In all other instances, "stormwater" is used, consistent with the provision of Appendix G of the *State CEQA Guidelines* and as defined by the U.S. EPA. Stormwater

1 Water Education Foundation, *Regional Water Quality Control Boards in California.* Available online at: https://www.watereducation.org/aquapedia/regional-water-quality-control-boards-california, accessed March 31, 2026.

runoff is generated when precipitation from rain and snowmelt events flows over land or impervious surfaces and does not percolate into the ground. As the runoff flows over the land or impervious surfaces (paved streets, parking lots, and building rooftops), it accumulates debris, chemicals, sediment, or other pollutants that could adversely affect water quality if the runoff is discharged untreated.[2]

Tier 1 Onsite Wastewater Treatment System (OWTS): Low Risk New or Replacement OWTS applies to new or replacement OWTS that comply with conservative siting and design standards described in the OWTS Policy. Tier 1 applies when a Local Agency Management Program (LAMP) has not been approved by the Regional Water Board. Maximum flow rate is 3,500 gallons per day (gpd).[3]

Tier 2 Onsite Wastewater Treatment System (OWTS): Tier 2 applies to new or replacement OWTS that comply with the siting and design standards in an approved LAMP. As with Tier 1, LAMPs are developed by Local Agencies based on local conditions; however, under Tier 2, siting and design standards may differ from Tier 1 standards. The maximum flow rate is 10,000 gpd.[4]

Tier 3 Onsite Wastewater Treatment System: Advanced Protection Management Program. Applies to OWTS located near impaired surface water bodies that are subject to a Total Maximum Daily Load (TMDL) implementation plan, a special provision contained in a LAMP, or are located within 600 feet of a water body listed on OWTS. Supplemental treatment requirements may apply to a Tier 3 system. The maximum flow rate is 10,000 gpd.[5]

Water Supply System: A water supply system is a system for the collection, transmission, treatment, storage, and distribution of water from source to consumers, for example, homes, commercial establishments, industry, irrigation facilities, and public agencies for water-related activities (firefighting, street flushing, and so forth).

Wastewater: The spent or used water of a community or industry that contains dissolved and suspended matter.

---

2 U.S. Environmental Protection Agency, NPDES Stormwater Program. Available online at: https://www.epa.gov/npdes/npdes-stormwater-program, accessed March 31, 2026.

3 California Water Boards. Fact Sheet: Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy). Available online at: https://www.waterboards.ca.gov/water_issues/programs/owts/owts_policy.html, accessed March 31, 2026.

4 Ibid.

5 Ibid.

4.17.2 SOLID WASTE

4.17.2.1 Environmental Setting

Existing Conditions

In 2024, Kern County residents produced a total of 1,419,751 tons of solid waste, a decrease of 346,158 tons compared to the solid waste generated in 2020. Compared to the state's total waste of 39,598,924 tons, the County was responsible for approximately 3.5 percent of the state's total solid waste tonnage.[6]

Solid Waste Collection

The majority of people in Kern County have curbside trash collection. Local waste haulers are contracted, under a franchise system, to provide this service to residents living within the County. Incorporated cities negotiate their own hauling contracts to provide trash collection. Within the City of Bakersfield, the City's Solid Waste Division and local waste haulers provide curbside refuse collection. There are remote areas of the County where collection service is provided through bin sites and transfer stations.

Kern County Waste Management Department

Kern County Waste Management Department (KCWM) operates seven landfills, five transfer stations, and four bin sites. Residents are not charged a waste disposal fee for ordinary household trash. Specific disposal sites maintain varying waste disposal fees for residential and commercial refuse.

Landfills

KCWM operates seven landfills throughout the County. Landfills are located in Bakersfield (referred to as the Bena Landfill), Boron, Mojave-Rosamond, Ridgecrest, Shafter-Wasco, Taft, and Tehachapi. A sanitary landfill is a site for the disposal of waste materials by burial. It is the oldest and most common method of waste disposal. In addition, Kern County landfill facilities fulfill other waste management purposes, such as the temporary storage, consolidation, recycling, and transfer of solid waste.

All County landfills have areas for diversion as well. Metals, cardboard, green and wood waste, electronic waste, concrete, and asphalt are materials that can be reused or recycled. KCWM's goal is to divert as much material as possible from landfill burial to prolong the landfill's life. After loads are deposited, bulldozers are used to spread and compact the waste on the working face. Before leaving the landfill, all vehicles return to the gatehouse area in order to be weighed without their load. As a result of the weighing process,

6 Cal Recycle. *2024 Landfill Summary Tonnage Report*. Available online at: https://www2.calrecycle.ca.gov/LandfillTipFees/, accessed on March 31, 2026.

daily incoming waste tonnage can be calculated and recorded. In addition to standard trash trucks and pick-up trucks and trailers, roll-off trucks (with a 20, 30, or 40 cubic yard bin) can also dispose of material at local landfills. Compacted waste is "covered" each day with "daily cover" including dirt, tarps, and other alternative materials. **Table 4.17-1, Active Solid Waste Landfills in Kern County,** provides information on active solid waste landfills in the County.

Table 4.17-1
Active Solid Waste Landfills in Kern County

Landfill	Location	Projected Closure Date	Max. Daily Disposal (tons/day)	Max. Capacity (cubic yards)	Remaining Capacity (cubic yards)
Bakersfield (Bena) Landfill	2951 Neumarkel Rd. Caliente, CA 93518	12/01/2047	4,500	53,000,000	21,942,706
Boron Sanitary Landfill	11400 Boron Ave Boron, CA 91536	07/01/2027	200	1,057,000	176,074
Edwards AFB-Main Base Landfill	220 Landfill Road Edwards AFB, CA 93524	02/01/2099	510	3,287,337	1,465,378
Ridgecrest Recycling & Sanitary Landfill	3301 W Bowman Rd Ridgecrest, CA 93555	12/01/2050	701	10,500,000	4,002,092
McKittrick Waste Treatment Site	56533 Highway 58 McKittrick, CA 93251	01/01/2043	3,500	5,474,900	3,151,900
Shafter-Wasco Recycling & Sanitary Landfill	17621 Scofield Ave Shafter, CA 93249	04/01/2054	1,500	21,895,179	12,874,292
Taft Recycling & Sanitary Landfill	13351 Elk Hills Rd Taft, CA 93268	08/01/2071	800	11,000,000	6,771,697
U.S. Borax Inc.-Gangue/Refuse Waste Pile	14486 Borax Rd Boron, CA 93516	02/01/2048	443	8,500,000	1,163,279
Clean Harbors Buttonwillow LLC	2500 West Lokern Rd Buttonwillow, CA 93206	01/01/2040	10,500	13,250,000	-

Source: Cal Recycle, *Solid Waste Information System (SWIS).* Available online at: *https://www2.calrecycle.ca.gov/SolidWaste/Site/Search*, accessed March 31, 2026.

Transfer Stations

Similar to the landfills, transfer stations, and "Bin Sites" accept trash for disposal. County transfer stations, located in Glennville, Kern Valley, Lebec, and McFarland-Delano areas, accept waste from both residential self-haulers as well as commercial refuse haulers. These facilities collect material that is then "transferred" to the nearest landfill site. While not as all-inclusive as a landfill, transfer stations provide a broad collection opportunity for local residents. **Table 4.17-2, Active Transfer Stations in Kern County,** provides information on active transfer stations in the County.

Table 4.17-2
Active Transfer Stations in Kern County

Transfer Station	Location	Max. Permitted Throughout	Permitted Capacity
Bear Valley CSD Transfer Station	28999 Lower Valley Road Tehachapi, CA 93561	99 tons/day	6,610 tons/year
Dave Pearsons Recycling Center	1536 N Mahan St. Ridgecrest, CA 93555	15 tons/day	3,725 tons/year
Glennville Recycling/Transfer Station	9301 Highway 155 Glennville, CA 93226	60 cubic yards/day	60 cubic yards/year
J.S. Martin Transfer Station	1316 J. Street Wasco, CA 93280	99 tons/day	35,640 tons/year
Keene Transfer Station	29592 Woodford-Tehachapi Rd Keene, CA 93531	15 tons/day	2,340 tons/year
Kern Valley Recycling/Transfer Station	9800 Sierra Way Kernville, CA 93238	300 tons/day	300 tons/day
Lebec Transfer Station	300 Landfill Road Lebec, CA 93243	99 tons/day	25,540 tons/year
Lorraine-Twin Oaks Transfer Station	Caliente Creek Rd 1/4 N Sand Canyon Shop Loraine, CA 93518	15 tons/day	5,475 tons/year
Martin Feed, Inc. T/P Facility	12838 Wible Road Pumpkin Center, CA 93313	100 tons/day	25,000 tons/year
McFarland-Delano Recycling/Transfer Station	11249 Stradley Ave. Delano, CA 93216	99 tons/day	99 tons/day
Mt Vernon Ave Recycling & Composting Facility	2601 South Mt Vernon Avenue Bakersfield, CA 93307	575 tons/day	54,650 tons/year
California City Recycling and Transfer Station	19901 Neuralia Road California City, CA 93505	-	-
Occidental of Elk Hills, Inc.	28590 Highway 119 Tupman, CA 93276	60 cubic yards/day	60 cubic yards/day
Occidental Section 26R Transfer Station	T30S, R23E, Section 26-NW Elk Hill/Skyline Fellows, CA 93276	15 tons/day	3,575 tons/year
Pine Mountain Club Transfer Station	16143 Aleutian Drive, Pine Mountain Club Frazier Park, CA 93222	60 cubic yards/day	8,000 cubic yards/year
Randsburg Transfer Station	Goler Rd 1/4 Mile North Of Randsburg Rd Randsburg, CA 93554	15 cubic yards/day	5,475 cubic yards/year
Section 32 Drilling Trash Facility	1/4 Mile E Of Property Line Rd On Hill R McKittrick, CA 93251	20 cubic yards/day	20 cubic yards/day
Stallion Springs Transfer Station	27800 Stallion Springs Drive Tehachapi, CA 93561	6 cubic yards/day	2,045 cubic yards/year
Tehachapi Recycling, Inc.	416 North Dennison Road Tehachapi, CA 93561	850 tons/day	-

Transfer Station	Location	Max. Permitted Throughout	Permitted Capacity
Valley Tree & Construction Disposal Site	4233 Quinn Road Bakersfield, CA 93308	750 tons/day	168,900 cubic yards/year

Source: Cal Recycle, Solid Waste Information System (SWIS). Available online at: https://www2.calrecycle.ca.gov/SolidWaste/Site/Search, accessed March 31, 2026.
Notes:
- Data not available

Bin Sites

Bin Sites are much smaller than transfer stations and are for residential use only. Residents with pick-up trucks and small trailers are the most common users. A series of 3-yard bins or a single large compactor is the typical collection mechanism used at bin sites. Currently, there are bin sites in the communities of Keene, Loraine-Twin Oaks, and Randsburg.

Waste Diversion and Recycling

The California Integrated Waste Management Act (AB 939) requires every city and county in the state, as part of the Countrywide Integrated Waste Management plan, to prepare a Source Reduction and Recycling Element that identifies how each jurisdiction would meet the mandatory state waste diversion goals of 25 percent by the year 1995 and 50 percent by the year 2000. CalRecycle produces a yearly Diversion/Disposal Progress Report for each county and the applicable local jurisdictions. For 2024 (the most current data available), the following cities met the required diversion rate as explained under AB 939: Bakersfield, Delano, Shafter, Taft, and Tehachapi.[7,8]

4.17.2.2 Regulatory Framework

Federal

Resource Conservation and Recovery Act

40 CFR, Part 258 Subtitle D of the Resource Conservation and Recovery Act (RCRA) establishes minimum location standards for siting municipal solid waste landfills. Because California laws and regulations

7 Cal Recycle, *Countywide Jurisdiction Diversion/Disposal Progress Report,* 2024. Available online at: https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/DiversionDisposal, accessed March 31, 2026.

8 Compliance order**:** A formal CalRecycle order finding that a jurisdiction has failed to implement its source reduction and recycling element (SRRE) or its household hazardous waste element (HHWE), and comply with the act. The compliance order contains a specific schedule for achieving compliance, as well as specific conditions that CalRecycle deems necessary for the jurisdiction to complete in order to implement its SRRE or HHWE or reach its required per capita disposal target. Please see Public Resources Code section 41825.

governing the approval of solid waste landfills meet the requirements of Subtitle D, the U.S. EPA delegated the enforcement responsibility to the State of California.

State

California Integrated Waste Management Act

As many of the landfills in the state are approaching capacity and the siting of new landfills becomes increasingly difficult, the need for source reduction, recycling, and composting has become readily apparent. In response to this increasing solid waste problem, in September 1989, the state assembly passed Assembly Bill 989, known as the California Integrated Waste Management Act. This statute emphasizes conservation of natural resources through the reduction, recycling, and reuse of solid waste. Assembly Bill 989 required cities and counties in the state to divert 25 percent of their solid waste stream from landfills by 1995 and 50 percent by the year 2000 or face potential fines of millions of dollars per year. On June 30, 2008, the State Assembly amended Senate Bill 1252 to include further waste diversion goals of 60 percent by the year 2015 and 75 percent by the year 2025.[9] The California Integrated Waste Management Act also requires that all cities conduct a Solid Waste Generation Study and prepare a Source Reduction Recycling Element.

AB 939 established the current organization, structure, and mission of CalRecycle. The purpose was to direct attention to the increasing waste stream and decreasing landfill capacity, and to mandate a reduction of waste being disposed. All Jurisdictions were required to meet diversion goals of 25 percent by 1995 and 50 percent by the year 2000. A disposal reporting system was established with CalRecycle oversight, facility and program planning were required, and cities and counties began to address waste problems.

Since 1989, Kern County has worked with public and private organizations to implement a variety of programs addressing waste concerns, including drop-off recycling, voluntary curbside recycling, and commercial waste recycling; household hazardous waste recycling; electronic waste recycling; green waste recycling; and construction & demolition recycling programs.

California Solid Waste Reuse and Recycling Act

The California Solid Waste Reuse and Recycling Act of 1991 (Pub. Res. Code §§ 42900-42901) was enacted to assist local jurisdictions with accomplishing the goals of AB 939. In accordance with AB 2176, any development project that has submitted an application for a building permit must include adequate, accessible areas for the collection and loading of recyclable materials. Furthermore, the areas to be utilized

9 CWIMB, *Senate Bill 1252 Amendment*, June 30, 2008.

must be adequate in capacity, number, and distribution to serve the proposed project. Moreover, the collection areas are to be located as close to existing exterior refuse collection areas as possible.

Solid Waste: Diversion Rule (AB 341)

Under the commercial recycling law (Chapter 476, Statutes of 2011), Assembly Bill (AB) 341 directed CalRecycle to develop and adopt regulations for mandatory commercial recycling. The final regulation was approved by the Office of Administrative Law on May 7, 2012. AB 341 declared a policy goal of the state that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020.

2025 California Green Building Standard Code (CALGreen)

The California Green Building Standards Code is Part 11 of 12 parts of the official compilation and publication of the adoption, amendment, and repeal of building regulations to the CCR, Title 24, Part 11, also referred to as the California Building Standards Code or CALGreen. The purpose of this code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices, including recycling of construction (diversion of 50 percent) and other waste streams. The provisions of this code shall apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure, unless otherwise indicated in the code, throughout the State of California.

SB 1016

SB 1016 created a change in how diversion rates are computed. The new per capita disposal and goal measurement system moves the emphasis from an estimated diversion measurement number to using an actual disposal measurement number as a factor, along with evaluating program implementation efforts.

The California Universal Waste Law

Adopted in 2006, universal wastes are hazardous wastes generated by a wide variety of people. Examples of these wastes are batteries, fluorescent tubes, and some electronic devices that contain mercury, lead, cadmium, copper, and other substances hazardous to humans and the environment.

Universal waste cannot be thrown away in solid waste landfills. Rather, universal wastes can be recycled. Recycling requirements are less stringent than those of other hazardous wastes to encourage recycling and recovery of valuable metals.

Local

Countywide Integrated Waste Management Plan

Counties are required to prepare and submit to CalRecycle an integrated waste management plan which includes all Source Reduction and Recycling Element (SRREs), all Household Hazardous Waste Element (HHWEs), a Countywide Siting Element (CSE), all Nondisposal Facility Elements (NDFEs), all applicable Regional SRREs, HHWEs, and an applicable Regional Siting Element if Regional Agencies have been formed. Public Resources Code (PRC) Section 41751 requires that a countywide integrated waste management plan include a summary of significant waste management problems facing the county or city and county. The plan is required to provide an overview of the specific steps that will be taken by local agencies, acting independently and in concert, to achieve the purposes of this division. The plan is required to contain a statement of the goals and objectives set forth by the countywide task force.

Source Reduction and Recycling Element

The Source Reduction and Recycling Element (SRRE) consists of the following components: waste characterization, source reduction, recycling, composting, solid waste facility capacity, education and public information, funding, special waste, and integration. Each city and county is required to prepare, adopt, and submit to the Board an SRRE, which includes a program for management of solid waste generated within the respective local jurisdiction. The SRREs must include an implementation schedule for the proposed implementation of source reduction, recycling, and composting programs. In addition, the plan identifies the amount of landfill and transformation capacity that will be needed for solid waste that cannot be reduced, recycled, or composted.

Household Hazardous Waste Element

Each city and county is required to prepare, adopt, and submit to the Board a Household Hazardous Waste Element (HHWE) that identifies a program for the safe collection, recycling, treatment, and disposal of hazardous wastes that are generated by households. The HHWE specifies how household hazardous wastes generated by households within the jurisdiction must be collected, treated, and disposed of.

Non-Disposal Facility Element

Each city and county is required to prepare, adopt, and submit to the Board a Non-Disposal Facility Element (NDFE) that includes a description of new facilities and expansion of existing facilities, and all solid waste facility expansions (except disposal and transformation facilities) that recover for reuse at least 5 percent of the total volume. The NDFE is to be consistent with the implementation of a local jurisdiction's

SRRE. Each jurisdiction must also describe transfer stations located within and outside of the jurisdiction, which recover less than 5 percent of the material received.

Countywide Siting Element

Counties are required to prepare a Countywide Siting Element (CSE) that describes areas that may be used for developing new disposal facilities. The element also provides an estimate of the total permitted disposal capacity needed for a 15-year period if counties determine that their existing disposal capacity will be exhausted within 15 years or if additional capacity is desired (PRC Sections 41700-41721.5).

As the largest jurisdictions in the region are the ones most likely to be impacted by the 2026 RTP, the applicable general plan policies for Kern County and the City of Bakersfield are identified below. Other cities in the region have similar applicable policies.

Kern County General Plan

The Kern County General Plan includes the following policies related to solid waste:

- General Plan Amendments for new residential development shall be discouraged in areas that are within 1,320 feet of a permitted solid waste disposal facility (Map Code 3.4) or within 200 feet of other waste facilities (Map Code 3.7).
- Development, which is located adjacent to a burn dumpsite and requires a discretionary permit, shall be reviewed for land use compatibility and possible soil contamination.
- The efficient and cost-effective delivery of public services and facilities will be promoted by designating areas for urban development that occur within or adjacent to areas with adequate public service and facility capacity.
- Ensure that adequate collection, treatment, and disposal facilities are constructed concurrently with planned growth.
- Ensure that appropriate funding mechanisms are in place to fund the needed improvements that result from development and subsequent growth.
- Individual projects will provide availability of public utility service as per the approved guidelines of the serving utility.
- Environmentally safe locations for the disposal of solid waste will be assured by locating sites in accordance with the criteria set forth in Appendix E of Kern County's General Plan.

- A designated site for solid waste disposal facilities shall be protected from encroachment of incompatible land uses and intensive urban development… Intensive residential uses, community care facilities, schools, hospitals, recreational vehicle parks, and other uses involving sensitive populations, concentrations of people, and other activities will usually be incompatible adjacent to or near solid waste disposal facilities.

- A solid waste disposal facility and other waste facilities shall pay their pro-rata share of the upgrading of pertinent County roads.

- For solid waste disposal facilities, all necessary permits shall be obtained from the Kern County Environmental Health Services Department, Kern County Waste Management Department, State of California Integrated Waste Management Board, State of California Regional Water Quality Control Board, the appropriate Air Pollution Control District, and all other responsible agencies prior to the commencement of operations.

- The County shall ensure landfill capacity for the residents and industry of Kern County.

- All solid waste disposal facilities shall designate a buffer around the permitted disposal area as defined by the Map Code 3.4 land use designation.

- All other waste facilities (non-hazardous/non-disposal) shall designate a buffer around the permitted waste area as defined by the 3.7 land use designation.

- Community sewage treatment and disposal facilities with collection systems will be required for all developments of 75 or more lots proposed as one development or cumulatively with other developments in a community area, unless soils engineering studies performed at the time of any land division project and approved by the Kern County Environmental Health Services Department, indicate that alternative septic systems, either individual or community design, are equal to or better than a community collection, treatment, and disposal system.

- Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

- Development in areas without adequate infrastructure or development that places a burden on public services (i.e., fire, sheriff, parks, and libraries) shall be discouraged.

Metropolitan Bakersfield General Plan

The Metropolitan Bakersfield General Plan includes the following policies related to solid waste:

- Locate new development where infrastructure is available or can be expanded to serve the proposed development.
- Ensure that land use and infrastructure development are coordinated.
- The developer shall be responsible for all on-site costs incurred as a result of the proposed project, in addition to a proportional share of off-site costs incurred in service extension or improvements. The availability of public or private services or resources shall be evaluated during discretionary project consideration. Availability may affect project approval or result in a reduction in size, density, or intensity otherwise indicated in the general plan's map provisions.

4.17.2.3 Environmental Impacts

Thresholds of Significance

For the purposes of this EIR, Kern COG has determined that adoption and/or implementation of the 2026 RTP would result in significant impacts to the County's solid waste capacity, if the following could occur:

- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals
- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste

Methodology

The following analysis evaluates solid waste disposal and transfer facilities that could be affected by the implementation of the projects, programs, and policies identified in the 2026 RTP. Impacts to these facilities were evaluated with respect to projected population, housing, and employment growth. The methodology for determining the significance of these impacts applies the significance criteria above to the expected future (2049) demand for solid waste disposal and compares future demand with the 2026 RTP to the existing capacity.

Both short-term construction related impacts and long-term or permanent impacts from new facilities and development resulting from implementation of the 2026 RTP are discussed below. The following analysis

is programmatic in nature, project specific impacts may vary, and appropriate mitigation measures must be developed on a project-by-project basis.

Determination of Significance

The following analysis evaluates solid waste disposal and transfer facilities that could be affected by the implementation of the projects, programs, and policies identified in the Plan. Impacts to these facilities were evaluated with data related to projected population, housing, and employment growth and available data on public services. The methodology for determining the significance of these impacts applies the significance criteria above to the expected future (2049) demand for solid waste disposal and compares future demand with the Plan to the existing capacity. Implementation of the 2026 RTP would affect solid waste facilities. Expected significant cumulative impacts include a potential increase in demand for solid waste disposal facilities.

Both short-term construction-related impacts and long-term or permanent impacts from new facilities could result from the implementation of the Plan. Below are descriptions of the types of direct impacts foreseeable from new transportation projects proposed in the 2026 RTP. Indirect, cumulative impacts from implementation of the Plan, in combination with increases in growth and development, are also identified. Project-specific impacts may vary, and appropriate mitigation measures would need to be developed on a project-by-project basis.

Approach to Mitigation

As discussed in **Chapter 1.0, Introduction,** Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2026 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-

specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

Impacts and Mitigation Measures

Impact SW-1 **Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.**

Impact SW-2 **Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.**

Regional and Transit Priority Area Impacts

Many of the transportation projects within the 2026 RTP have the potential to generate a substantial amount of solid waste during construction through grading and excavation activities, as well as debris resulting from the removal of structures. Construction of urban development would generate similar debris. In addition, the operation of some of the proposed transportation facilities would generate minor amounts of solid waste, such as from garbage cans at transportation facilities and roadside waste.

Construction debris could be recycled or used as fill at other projects (clean dirt) or transported to the nearest landfill site and disposed of appropriately. The nine landfills located in Kern County, listed in **Table 4.17-1**, **Active Solid Waste Landfills in Kern County**, function at or below their permitted capacity. Construction of development projects in tandem with population growth would likely generate substantial amounts of solid waste. Under the California Green Building Code described above, construction waste diversion of 50 percent is required during most new construction projects. In addition, the waste diversion rates are anticipated to increase over time, reducing the amount of construction waste further.

The population of Kern County is projected to increase by 106,900 by the RTP horizon year (2049). The California Department of Resources Recycling and Recovery (CalRecycle) estimates that the average resident in California disposes of 6.2 pounds of trash per day.[10] According to Calrecycle, the average employee disposes of 10.53 pounds of trash per day.[11] Assuming the AB 939 diversion rate of 50 percent

10 CalRecycle, State of Disposal and Recycling in California, 2024. Available online at: https://calrecycle.ca.gov/stateofreport/, accessed March 31, 2026.

11 CalRecycle, Estimated Solid Waste Generation Rates. Available online at: https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates, accessed March 31, 2026.

and similar generation rates to the California average, this equates to approximately 3.1 pounds of trash per day for residences and 5.7 pounds of trash per day for employees.

These solid waste generation rates were used to calculate the solid waste generated in 2049. As discussed above, solid waste generation per capita had been steadily reducing each year until 2013, when it began to rise again. Despite recent increases, it is expected that solid waste generation will return to a decreasing trend in the future due to sustainable policies and practices. Using the average California generation rates and AB 939 diversion requirements of 50 percent, solid waste generation rate for 2049 results in a conservative estimate of solid waste generation. Assuming a diversion of 50 percent, the adjusted waste generated per day in Kern County under 2049 RTP conditions would be 2,794 tons per day as compared to 2,421 tons per day in 2024 (see **Table 4.17-3, Solid Waste Generated in Kern County**).

The maximum daily disposal for the 11 landfills in Kern County is calculated to be 22,654 tons/day. As noted above, construction of development projects in tandem with population growth would likely generate substantial amounts of solid waste, while operation of some of the proposed transportation facilities would generate minor amounts of solid waste, such as from garbage cans at transportation facilities and roadside waste.

However, only four of the landfills are anticipated to remain operational by 2049 with a collective daily disposal limit of 3,511 tons/day. Therefore, there is not currently enough forecast disposal capacity to meet the projected need in 2049. As stated above, the amount of solid waste projected to be generated is a conservative estimate. In addition, the higher density, infill developments proposed as part of the 2026 RTP would generate less solid waste than the same population accommodated by dispersed development. However, sufficient landfill capacity has not been identified to serve the needs of the County; therefore, the impact on solid waste facilities would be potentially significant. As such, mitigation is required. **Mitigation Measure MM-SW-1** through **MM-SW-3** below would mitigate these impacts.

Compliance with federal, state, and local statutes related to solid waste is required, and implementation of the projects in the 2026 RTP would not lead to non-compliance with any identified statutes. Therefore, impacts to SW-2 – comply with federal, state, and local management and reduction statutes and regulations related to solid waste – would be less than significant.

Table 4.17-3
Solid Waste Generated in Kern County

Year	Number of People [a]	Solid Waste Generation Rate (lbs/day) [b]	Solid Waste Generated (tons/day)	Adjusted Solid Waste Generated (tons/day)*
Population				
2024	910,300	6.2	2,822	1,411
2049	1,017,200	6.2	3,153	1,577
Employment				
2024	354,400	10.5	1,861	1,010
2049	426,900	10.5	2,241	1,217
Population and Employment				
2024 Total			**4,683**	**2,421**
2049 Total			**5,394**	**2,794**

* *Assuming a diversion of 50 percent to achieve state standards.*
Source:
[a] *Kern COG 2026*
[b] *CalRecycle, State of Disposal and Recycling in California, 2024, CalRecycle, Estimated Solid Waste Generation Rates.*

Level of Significance Before Mitigation

Potentially significant for SW-1 and less than significant for SW-2 at the regional and TPA levels.

Mitigation Measures

MM SW-1: Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage diversion of solid waste such as recycling and composting programs.

MM SW-2: Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage local jurisdictions to require project sponsors to integrate green building measures consistent with CALGreen (California Building Code Title 24) into project design which could include the following:

- Reuse and minimization of construction and demolition (C&D) debris and diversion of C&D waste from landfills to recycling facilities.
- The inclusion of a waste management plan that promotes maximum C&D diversion.

- Source reduction through (1) use of materials that are more durable and easier to repair and maintain, (2) design to generate less scrap material through dimensional planning, (3) increased recycled content, (4) use of reclaimed materials, and (5) use of structural materials in a dual role as finish material (e.g., stained concrete flooring and unfinished ceilings).

- Reuse of existing structure and shell in renovation projects.

- Design for deconstruction without compromising safety.

- Design for flexibility through the use of moveable walls, raised floors, modular furniture, moveable task lighting, and other reusable building components.

- Development of indoor recycling program and space.

MM SW-3: Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage local jurisdictions and waste management agencies to discourage the siting of new landfills unless all other waste reduction and prevention actions have been fully explored. If landfill siting or expansion is necessary, landfills should be sited with an adequate landfill-owned, undeveloped land buffer to minimize the potential adverse impacts of the landfill in neighboring communities.

Level of Significance After Mitigation

Mitigation Measures **MM SW-1** through **MM SW-3** would reduce impacts on solid waste facilities. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with the reduction in waste materials sent to landfill as a result of the diversion of recyclable and compostable waste, impacts are considered significant and unavoidable.

4.17.2.4 Cumulative Impacts

The 2026 RTP includes transportation projects and development in Kern County. The Plan targets growth and development in urbanized areas. While Kern County is currently adequately served by landfills, existing landfill space is a finite resource. Therefore, impacts on existing infrastructure would be significant. As population increases across the state, it is expected that additional demands will be placed on landfills with remaining capacity both from inside Kern County and from nearby areas such as Los Angeles. The increased demand on landfill capacity could result in the need to truck waste long distances. As a result,

the 2026 RTPS could add to impacts on available landfill capacity in other jurisdictions. This impact would be cumulatively considerable.

4.17.3 WASTEWATER

4.17.3.1 Environmental Setting

Kern County Waste Management Department

The Kern County Waste Management Department (WMD) operates two County Sanitation Districts (Kern Sanitation Authority [KSA] and Ford City-Taft Heights Sanitation District), two wastewater plants (the KSA Treatment Plant and Taft Treatment Plant), and two County Service Area (CSA) wastewater treatment facilities. The WMD also provides maintenance or treatment services for several CSA wastewater collection systems. The Board of Supervisors serve as the members of the Board of Directors for the two districts.

Table 4.17-4, Wastewater Flow and Capacity of Treatment Facilities in the Kern COG Region, provides the current flow and capacity flow of these facilities and the local cities' facilities located in the County. Details on each of the wastewater treatment facilities are provided below.

Bear Valley Wastewater Treatment Plant

The Bear Valley Wastewater Treatment Plant (WWTP) provides wastewater treatment for the Bear Valley area and is operated by the Bear Valley Community Services District (CSD). The Bear Valley WWTP consists of an oxidation ditch plant which includes a bar screen, an oxidation ditch, a secondary clarifier, a chlorinator and contact chamber, two continuous backwash sand filters, and a final chlorine contact chamber. Treated effluent is directed and re-used to irrigate turf at the Bear Valley Golf Course; when the Bear Valley Golf Course is not needing water during colder and wetter months, the treated effluent is discharged down Sycamore Canyon. [12] The plant has been rated with a capacity of approximately 0.25 million gallons per day (mgd).[13]

Buena Vista Aquatic Recreation Area Wastewater System

The Buena Vista Aquatic Recreation Area Wastewater System is owned by the County of Kern and provides wastewater treatment for the recreation area which includes a 112-unit overnight campground and car and boat parking lots. Wastewater treatment is completed in an extended aeration package plant that consists

---

12 Bear Valley Community Services District, Wastewater Treatment Process. Available online at: https://www.bvcsd.org/wastewater-treatment-process, accessed April 30, 2026.

13 Ibid.

of an aeration chamber, a clarifier, and a digester. Effluent disposal is accomplished in two fenced percolation/evaporative ponds, which total two acres. A maximum of 200,000 gallons of wastewater are treated each day at the facility.[14]

Table 4.17-4
Wastewater Flow and Capacity of Treatment Facilities in the Kern COG Region

Responsible Agency	Wastewater Facility	Current Flow (mgd)	Capacity Flow (mgd)
Bear Valley CSD	Bear Valley CSD Sewer Treatment Plant [a]	0.093	0.25
County of Kern	Buena Vista Aquatic Recreation Area Wastewater System [b]	0.2*	0.2
California City	California City Wastewater Treatment Plant [c]	1.0*	1.0
City of Taft	California Correctional Institute Facility's Wastewater Treatment plant [q]	0.46*	0.46
City of Arvin	City of Arvin Wastewater Treatment Plant [p]	1.1	2.0
City of Bakersfield	City of Bakersfield Treatment Plant 2 [d]	13.7	25
City of Bakersfield	City of Bakersfield Treatment Plant 3 [d]	17.3	32
City of Delano	City of Delano Wastewater Treatment Facility [e]	7.2*	7.2
City of McFarland	City of McFarland Wastewater Treatment Facility [f]	1.1	1.55
City of Ridgecrest	City of Ridgecrest Wastewater Treatment Plant [g]	2.1	3.6
North of the River Sanitary District	City of Shafter/North of River Sanitary District Number 1 Wastewater Plant [h]	5.9	7.5
City of Tehachapi	City of Tehachapi Wastewater Treatment Plant [i]	0.65	1.25
City of Wasco	City of Wasco Wastewater Treatment Facility Plant [j]	1.7	3.0
Golden Hills Sanitation Company	Golden Hills Sanitation Company Wastewater Treatment Plant [k]	0.03	0.2
Kern Sanitation Authority	Kern Sanitation Authority Wastewater Treatment Plant [b]	3.2	4
Lamont Public Utilities District	Lamont Public Utilities District Plant [l]	1.2	2.0
County Service Area 39.8	Reeder Tract County Service Area 39.8 Wastewater System [m]	0.04*	0.04
County of Kern	Sheriff's Lerdo Facility Wastewater System [m]	0.54	0.54
Stallion Springs Community Services District	Stallion Springs Community Services District Wastewater Treatment Facility [n]	0.1	0.5
Ford City-Taft Heights	Taft Municipal Wastewater Treatment Facility [o]	1.3	1.5
	Total	**58.91**	**94.84**

Note:
* *Assuming maximum flows.*
Sources:
[a] *Bear Valley CSD. Collection System. https://www.bvcsd.org/wastewater-treatment-process, accessed March 31, 2026.*
[b] *Kern County Waste Management. Sewer Information – What We Do. https://www.kernpublicworks.com/services/development/sewer-information, accessed March 31, 2026.*
[c] *California City. California City Wastewater Treatment Plant. http://www.californiacity-ca.gov/CC/index.php/work-orders-3, accessed March 31, 2026.*
[d] *City of Bakersfield. Wastewater Treatment Plants. https://www.bakersfieldcity.us/679/Wastewater-Treatment-Plants, accessed March 31, 2026.*

14 Kern County Public Works, Sewer Information – What We Do. Available online at: https://www.kernpublicworks.com/services/development/sewer-information, accessed April 30, 2026.

Responsible Agency	Wastewater Facility	Current Flow (mgd)	Capacity Flow (mgd)

[e] *City of Delano, 2020 Urban Water Management Plan. https://www.cityofdelano.org/DocumentCenter/View/6002/2020-City-of-Delano-UWMP, accessed March 31, 2026.*

[f] *City of McFarland, Sewer. https://www.mcfarlandcity.org/home-property-community/water-and-wastewater/, accessed March 31, 2026*

[g] *City of Ridgecrest, Wastewater Treatment Plant Facility Plan. https://www.ridgecrest-ca.gov/DocumentCenter/View/223/Wastewater-Treatment-Plant-Facility-Plan-PDF?bidId=, accessed March 31, 2026.*

[h] *North of River Sanitary District, https://norsd.specialdistrict.org/files/678aed6f8/NORSD+2023+Sewer+Master+Plan+reduced.pdf, accessed March 31, 2026.*

[i] *City of Tehachapi, Wastewater. https://www.liveuptehachapi.com/571/Wastewater-Division, https://www.liveuptehachapi.com/DocumentCenter/View/8405/Sewer-Sevice-Rate-Studypdf, accessed March 31, 2026.*

[j] *City of Wasco, Public Works Department. https://www.cityofwasco.org/177/Wastewater, accessed March 31, 2026.*

[k] *Golden Hills Community Service District, DEIR for Golden Hills Wastewater Treatment System Improvement Project. https://psbweb.kerncounty.com/planning/pdfs/eirs/golden_hills/ghwwts_deir_vol2.pdf, accessed March 31, 2026.*

[l] *Lamont Public Utilities District, Wastewater Collection System. https://www.lpud.org/wastewater, accessed March 31, 2026.*

[m] *Kern County, Integrated Waste Management Plan. http://www.kernirwmp.com/documents/Prioritization/CK.pdf, accessed March 31, 2026.*

[n] *California State Water Resources Control Board (SWRCB), Stallion Springs Community Services District Wastewater Treatment Facility. https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/kern/r5-2025-0051_tso.pdf, accessed March 31, 2026.*

[o] *City of Taft, Sewer System Maintenance Plan. 2018. https://www.cityoftaft.org/files/documents/document1515080732062118.pdf, accessed March 31, 2026.*

[p] *City of Arvin, Arvin Sewer Master Plan. 2019. https://www.arvin.org/DocumentCenter/View/467/Arvin-Sewer-Master-Plan---Volume-1-PDF, accessed March 31, 2026.*

[q] *California Regional Water Quality Control Board Central Valley Region, Order R5-2025-0055. Available online at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/rescissions/r5-2025-0055_rec.pdf, accessed March 31, 2026.*

California City Wastewater Treatment Plant

The California City WWTP is owned and operated by California City. The California City sewer treatment facility treats and disposes of up to 1.0 mgd of wastewater to tertiary levels.

California Correctional Facility Wastewater Treatment Plant

The City of Taft operates the Correctional Facility's Wastewater Treatment Plant. The Correctional Facility's WWTP has an existing capacity of 0.46 mgd; the Correctional Facility's Wastewater Treatment Plant is evaluating an increase in capacity from 1.5 mgd to 2.0 mgd with upgrades to tertiary treatment.

City of Arvin Wastewater Treatment Facility

The Arvin Wastewater Treatment Facility (WWTF) treats wastewater for the City of Arvin. Veolia Water currently maintains a 35-year contract with the City and operates the facility. The water treatment processes includes influent screening and pumping and secondary treatment though parallel 0.6 mgd and 1.4 mgd oxidation ditches. The secondary effluent is pumped to storage reservoirs and utilized on City owned fields, (approximately 240 acres). The waste activated sludge is stored in an aerated sludge storage tank and dewatered until it reaches 15 percent solids with a belt press. The dewatered sludge is stored on-site where it is annually removed and taking to a composting site. The plant currently treats approximately 1.1 mgd of wastewater and has been rated with a capacity of approximately 2.0 mgd.

City of Bakersfield Treatment Plants

Four wastewater treatment plants serve the City of Bakersfield. East Niles Community Services District (East Niles CSD) also services certain unincorporated areas of Kern County and portions of the City of Bakersfield. The City owns, operates, and maintains the collection sewer system for WWTP 2 and WWTP 3. The WWTP 2 and WWTP 3 provide primary and secondary treatment of incoming wastewater. All treated effluent is currently used for agricultural irrigation for a variety of crops on farmland surrounding the treatment plants. During the winter months, the recycled water not used for irrigation is discharged to storage reservoirs and used for irrigation during the following growing season. The WWTP 2 currently treats approximately 13.7 of wastewater and has been rated with a capacity of approximately 25 mgd. The WWTP 3 was constructed in 1972 and upgraded in 2010 from 16 mgd to 32 mgd capacity.

Remaining wastewater not treated by WWTPs 2 and 3 is treated by the Kern Sanitation Authority WWTP and City of Shafter/North of River Sanitary District Number 1 WWTP. Additional information on these facilities is provided below.

City of Delano Wastewater Treatment Facility

The City of Delano owns and operates a WWTF. The plant provides wastewater services to its residential, commercial, and industrial users within the City limits and some unincorporated areas, including the North Kern State Prison. The facility consists of flow metering, screening, aerated grit chamber, primary clarification, biofiltration, secondary clarification, primary and secondary sludge pumping facilities, shops, an effluent pumping facility, sludge digesters, and a sludge thickener. The plant has been rated with a capacity of approximately 7.2 mgd. The City of Delano WWTF was originally constructed in 1979 and upgraded in 2011.

City of McFarland Wastewater Treatment Facility

The City of McFarland operates a wastewater collection, treatment, and disposal facility for the residents and small industry of the City of McFarland. The existing WWTF provides secondary treatment of the wastewater stream. Treatment includes screening to remove large solids, aeration, and sedimentation. Effluent is discharged to approximately seven (7) acres of lined aeration lagoons. Effluent then is discharged to approximately 30 acres of unlined evaporation/percolation ponds or an approximately 270-acre use area. The WWTF has an average daily flow of about 1.1 mgd and has been rated with a capacity of 1.55 mgd.

City of Ridgecrest Wastewater Treatment Facility

The City of Ridgecrest is responsible for the collection, conveyance, treatment, and disposal of wastewater generated within a majority of the District's service area (City of Ridgecrest) and China Lake Naval Air Weapons Station (NAWS). All wastewater collected is conveyed through regional wastewater conveyance facilities to the City of Ridgecrest's Regional WWTP. The plant is located on Navy property and provides secondary treatment of incoming wastewater. The City is currently in the early planning stages for the construction of an additional wastewater treatment plant. More than one-third of the wastewater treated at the plant is generated by the Navy, with the remainder generated within the City of Ridgecrest.[15]

City of Shafter/North of River Sanitary District Number 1 Wastewater Plant

Through a Joint Powers Agreement (JPA) executed in 1990, the ownership of the North of the River Sanitary District (NORSD)/City of Shafter WWTF became vested in NORSD and the City of Shafter in direct proportion to the fraction of the total cost of the treatment and disposal facilities paid by each. The City of Shafter owns one-third of the facility's current 7.5 mgd of raw sewage capacity and has a current flow of 5.9 mgd. It is anticipated that the City will continue to exercise its option of purchasing an additional one-third ownership of future plant capacity expansions to ensure sewer service for future growth and development. The WWTF, which is located within City limits, is operated by NORSD and renders wastewater treatment services for all residences and most businesses and industries within the City of Shafter limits, the City of Bakersfield, and unincorporated areas of the County.

Effluent from primary clarifiers is pumped through a biofilter, which reduces organic matter. After this process, the effluent flows into a final clarifier. Through sedimentation, particulate matter settles to the bottom of the tank and is removed. A portion of the recycled water from this treatment process is used by a neighboring farming operation for crop watering, thus eliminating reliance on groundwater supplies.

City of Tehachapi Wastewater Treatment Plant

The City of Tehachapi owns and operates the WWTP that provides services to the residences and businesses in the City. The plant provides secondary treatment of incoming wastewater. The facility consists of some headworks screening and grinding, followed by a lift by two pumps that lift the influent into the oxidation ditch. In the oxidation ditch, the biological action occurs by breaking down wastes and then discharging the water to the clarifier for settling action. Sludge and heavies are settled to the bottom of the clarifier in this process, and a portion of the sludge is sent back to the oxidation ditch for the health

---

15 Provost & Pritchard Consulting Group, *Water Treatment Plant Facility Plan, City of Ridgecrest, 2015. Available online at:* https://ridgecrest-ca.gov/DocumentCenter/View/223/Wastewater-Treatment-Plant-Facility-Plan-PDF?bidId=, accessed March 31, 2026.

of that process, while the other (waste) sludge is sent to the drying beds for dewatering. The treated effluent from the clarifier is sent through pond numbers 5, 8, and 13, reaching the pump station whereby the treated effluent is pumped to the winter storage area or "borrow pit." During the reclamation season, the water is pumped from the borrow pit as well as pond number 13 to the 140-acre reclamation site located on the north side of the Tehachapi Municipal Airport.[16]

City of Wasco Wastewater Treatment Facility

The City of Wasco owns and operates a WWTF located west of the community. The present wastewater treatment facilities were originally constructed in 1937. The facilities have since been enlarged and/or modified on a number of occasions. The current plant facilities consist of headworks with a Parshall flume, one mechanical bar screen, and flow meter, aerated grit chamber, two primary clarifiers, two plastic media trickling filters, two secondary clarifiers, two smaller bentonite-lined aerated ponds and one large 25-acre unlined storage pond, three anaerobic sludge digesters, four unlined sludge drying beds, centrifuge facility and three 15-acre effluent disposal ponds.

The City is permitted to discharge its effluent to 605 acres of City-owned land that surrounds the facility to the south and west, comprised of 160 acres percolation and storage plus 445 acres irrigation. The irrigation practice helps to replenish the area groundwater table through deep percolation and reduces groundwater overdraft. Effluent generally flows by gravity with the use of booster pumps during high flows through several miles of pipeline and open ditches. It is expected that this practice will continue in the future and aid the groundwater basin recharge.

Golden Hills Sanitation Company Wastewater Treatment Plant

The Golden Hills WWTP is owned and operated by the Golden Hills Sanitation Company. The plant was constructed in 1984. The plant provides services to the Golden Hills CSD, an area with an approximate population of 8,656. The WWTP consists of a bar screen box type headworks, two equalization basins, 12 extended aeration basins, four clarifying sedimentation basins, two filter wet-well holding tanks, a filter pump station, a vertical pressure automatic backwashing sand filter, a chlorination disinfection system, and an aerobic digester chamber. The effluent is discharged into Tom Sawyer Lake. The Plant's current flow rate is 25,000 to 30,000 gallons per day but has a peak flow rate and permitted capacity of 200,000 gallons per day, or 0.2 mgd.

---

16 City of Tehachapi. *2015 Tehachapi Regional Urban Water Management Plan,* https://tccwd.specialdistrict.org/files/7c9d0ac5c/combinepdf.pdf, accessed March 31, 2026.

Kern Sanitation Authority Wastewater Treatment Plant

In the 1940s, East Bakersfield area residents petitioned the Board of Supervisors to form several Sanitation Districts to manage wastewater. In 1991, these districts became the Kern Sanitation Authority (KSA). The KSA operates the KSA Wastewater Treatment Plant and sewer system servicing certain County areas of metropolitan Bakersfield. East Niles CSD also provides sewer and water services within portions of the East Bakersfield area through a separate and independent service district.

Approximately 4 million gallons of industrial, commercial and domestic wastewater from nearly 40,000 people in East Bakersfield, is treated each day at the KSA Treatment Plant. Wastewater treatment is obtained via a headworks screening unit; two primary clarifiers; an anaerobic digester; two trickling filters; two secondary clarifiers and recirculation pumps. Plant effluent is used to irrigate 1,100 acres of adjacent farmland owned by the Authority. The biosolids produced at the plant are treated to the highest Class A Exceptional Quality (EQ) level and hauled to a composting facility. No chemicals are used to treat wastewater at the Kern Sanitation Authority sewer plant.

All of the wastewater received and processed at the sewer plant is reused. Natural processes clean up the wastewater so it can be used for irrigation of non-food crops. After treatment, the digested solids are relatively free of infectious agents and are suitable, after drying and aging, for nonfood crop fertilizer use and soil reclamation.

Lamont Public Utilities District Plant

The Lamont Public Utilities District operates a sewage collection system. The collection flows by gravity to the District's WWTP, therefore there are no lift stations or force mains. The District operates a 3.25 mgd secondary-level WWTP located on the northwest and southwest corners of Wildman Road and East Bear Mountain Road. The District currently disposes of its treated wastewater, or effluent, on District owned land. The majority of the District's effluent is used in the green waste composting process, owned by Community Recycling and Resource Recovery (CR&RR), which is located due south of the wastewater treatment plant. The remaining is applied on 130 acres of land owned by the District and farmed by CR&RR. The permitted capacity of this facility is 2.0 mgd and the average sewage flow per day is 1.2 mgd.

Reeder Tract County Service Area 39.8 Wastewater System

The Reeder Tract WWTF is owned by County Service Area 39.8, which is administered by the Kern County Engineering, Survey, and Permitting Services Department. The facility provides wastewater treatment for a residential area between the communities of Lake Isabella and Bodfish. A maximum of 40,000 gallons of domestic wastewater, from the Reeder Tract area adjacent to Lake Isabella, are treated each day at the

Reeder Tract WWTF. Wastewater treatment is obtained in an extended aeration package plant with flow equalization, aeration, sedimentation, coagulation, flocculation, filtration, disinfection, and appurtenant facilities. Effluent is used for landscape irrigation at the treatment plant and for spray irrigation on 9 acres of an undeveloped portion of Lake Isabella Park.

Shafter Field Airport District Wastewater Plant

The Shafter Field Airport District Wastewater Treatment plant located within the Minter Field Airport District (Minter Field) was constructed in 1940 and currently services the commercial and industrial customers located within Minter Field and the City's Industrial Park. The plant is operated by Minter Field as a single-stage trickling filter plant. The influent flow is pumped directly to the intermediate clarifier, which now serves as the primary clarifier in the single stage trickling filter process. Effluent from the final clarifier flows into an effluent pond, where it recharges the groundwater basin.[17]

Sheriff's Lerdo Facility Wastewater System

The Sheriff's Lerdo WWTF is owned by the County of Kern. The sewer plant provides wastewater treatment for the Sheriff's Lerdo Jail and the adjacent juvenile facility. Approximately 540,000 gallons of wastewater, generated by the Sheriff's Lerdo Jail and nearby juvenile facility inmates and offices are treated each day at the wastewater treatment facility. Wastewater treatment is obtained via a headworks, two surface aerated lagoons, and irrigation regulating reservoir and an effluent disposal area. Expansion of the wastewater treatment facility is anticipated to accommodate an additional 160,000 gallons of wastewater per day.

Stallion Springs Community Services District Wastewater Treatment Facility

Stallion Springs CSD owns and operates a wastewater collection, treatment, and disposal system. The treatment system consists of a bar screen, two oxidation ditches/clarifier units, a chlorine feed system, a chlorine contact chamber, a dechlorination agent feed system, four concrete-lined sludge drying beds, and a 1.5-million-gallon concrete-lined effluent storage pond. Effluent is discharged into Chanac Creek. The WWTF has permitted flow of 0.1 mgd and design flow of 0.5 mgd.

---

17 City of Shafter, *Urban Water Management Plan Update for 2020*, May 2021. Available online at: https://www.shafter.com/DocumentCenter/View/4963/Shafter-2020-UWMP---Final-Draft, accessed March 31, 2026.

Taft Municipal Wastewater Treatment Plant

Ford City-Taft Heights is a County Sanitation District (FC-THSD) which manages wastewater from the unincorporated areas of Ford City and Taft Heights. Sewer collection for the two communities joins the City of Taft system and gravity flows to the Taft Municipal WWTP.

The Taft WWTP is jointly owned by the City of Taft (52 percent) and the Ford City-Taft Heights Sanitation District (48 percent). Wastewater treatment is obtained via a headworks; four aerated facultative ponds; chlorine contact basin; effluent holding pond; solar sludge drying beds and 135-acre effluent disposal area. The City of Taft operates the sewer plant through a contract with a private company. Currently, secondary treated wastewater is provided by the northern plant to a local agricultural field. The plant produces 1.3 mgd and utilizes all the effluent to irrigate 110 acres of crops year round with grain hay in the winter and alfalfa in the summer. The City of Taft provides the effluent to the agricultural producers and has a profit sharing agreement with the producer in exchange for the water.

4.17.3.2 Regulatory Framework

Federal

Clean Water Act/National Pollutant Discharge Elimination System Permits

The Clean Water Act (CWA) (*33 United States Code* Section 1251 et seq.*)* is the cornerstone of water quality protection in the United States. The statute employs a variety of regulatory and on-regulatory tools to sharply reduce direct pollutants discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water.

The CWA regulates discharges from "non-point source" and traditional "point source" facilities, such as municipal sewage plants and industrial facilities. The CWA makes it illegal to discharge pollutants from a point source to the waters of the United States. CWA Section 402 creates the National Pollutant Discharge Elimination System (NPDES) regulatory program. Point sources must obtain a discharge permit from the proper authority (usually a state, sometimes the U.S. EPA, a tribe, or a territory). NPDES permits cover industrial and municipal discharges, discharges from storm sewer systems in larger cities, storm water associated with numerous kinds of industrial activity, runoff from construction sites disturbing more than one (1) acre, mining operations, and animal feedlots and aquaculture facilities above certain thresholds.

All so-called "indirect" dischargers are not required to obtain NPDES permits. An indirect discharger is one that sends its wastewater into a city sewer system, so it eventually goes to a sewage treatment plant. Although not regulated under NPDES, indirect discharges are covered by the CWA "pretreatment" program. Indirect dischargers send their wastewater into a city sewer system, which carries it to the municipal sewage treatment plant, through which it passes before entering surface water.

National Pretreatment Program

The National Pretreatment Program is an extension of NPDES regulatory program. The National Pretreatment Program is a cooperative effort of federal, state, and local regulatory environmental agencies established to protect water quality. The program is designed to reduce the level of pollutants discharged by industry and other non-domestic wastewater sources into municipal sewer systems, and thereby, reduce the amount of pollutants released into the environment through wastewater. The objectives of the program are to protect Publicly Owned Treatment Works (POTW) from pollutants that may interfere with plant operation, to prevent pollutants that may pass through untreated from being introduced into the POTW, and to improve opportunities for the POTW to reuse wastewater and sludges that are generated.

The term "pretreatment" refers to the requirement that non-domestic sources discharging wastewater to POTW control their discharges, and meet limits established by the U.S. EPA, the state or local authority on the amount of pollutants allowed to be discharged. The control of the pollutants may necessitate treatment prior to discharge to the POTW (therefore the term "pretreatment"). Limits may be met by the non-domestic source through pollution prevention techniques (product substitution recycle and reuse of materials) or treatment of the wastewater.

Safe Drinking Water Act

The Safe Drinking Water Act was originally passed by Congress in 1974 to protect public health by regulating the Nation's public drinking water supply. The Act was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and groundwater wells. This Act authorizes the U.S. EPA to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants that may be found in drinking water. The Act also mandates a Groundwater/Wellhead Protection Program be developed by each state in order to protect groundwater resources that serve as a source for public drinking water.

State Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code Section 13000 et. seq.) acts in cooperation with the CWA to establish the State Water Resources Control Board (SWRCB). The SWRCB's mission is to preserve, enhance, and restore the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations.[18] The SWRCB is divided into nine regions, each overseen by a Regional Water Quality Control Board (RWQCB). The SWRCB, and thus each RWQCB, is responsible for protecting California's surface waters and groundwater supplies.

The Porter-Cologne Water Quality Control Act develops Basin Plans that designate the beneficial uses of California's rivers and groundwater basins. The Basin Plans also establish narrative and numerical water quality objectives for those waters. Basin Plans are updated every three years and provide the basis of determining waste discharge requirements, taking enforcement actions, and evaluating clean water grant proposals. Under the Porter-Cologne Water Quality Control Act the SWRCB and RWQCBs are also responsible for implementing CWA Sections 401-402 and 303(d).

California Water Code

The California Water Code contains provisions that control almost every consideration of water and its use. Division 2 of the California Water Code provides that the SWRCB shall consider and act upon all applications for permits to appropriate waters. Division 6 of the California Water Code controls conservation, development, and utilization of the state water resources, while Division 7 addresses water quality protection and management.

Local

Utility Master Plans & Utility Capital Improvement Programs

Jurisdictions usually have utility master plans or other planning documents that identify and prioritize projects needed to maintain adequate levels of utility service in the jurisdiction.

General Plans

Local policies related to utilities and service systems are established in each jurisdiction's general plan. In general, jurisdictions have policies in place that state that utility and service systems must be provided

18 California State Water Resources Control Board, *About Us.* Available online at: https://www.waterboards.ca.gov/about_us/, accessed March 31, 2026.

at the same time (or in advance of) need. In addition to these general policies, jurisdictions may have more specific policies tailored to performance objectives including wastewater treatment services.

Wastewater treatment services, policies, and strategies might include provisions for equal access to utilities, promote innovative and efficient solutions for wastewater treatment, encourage extension of sewer services to currently unserved areas, develop level of service standards, and encourage design and operation standards that minimize impacts to environmentally sensitive areas and habitats.

As the largest jurisdictions in the region where the most impacts are anticipated to occur, policies from the Kern County and Bakersfield General Plans are identified below. Other cities in the County have similar policies.

Kern County General Plan

The Kern County General Plan includes the following policies related to wastewater:

- Ensure effective slope stability, wastewater drainage, and sewage treatments in areas with steep slopes are adequate for development.
- The efficient and cost-effective delivery of public services and facilities will be promoted by designating areas for urban development which occur within or adjacent to areas with adequate public service and facility capacity.
- Ensure that adequate storage, treatment, and transmission facilities are constructed concurrently with planned growth.
- Encourage the utilization of wastewater treatment facilities which provide for the reuse of wastewater.
- Encourage the conversion of private sewer systems (septic tanks) to public systems.
- Ensure that adequate collection, treatment, and disposal facilities are constructed concurrently with planned growth.
- Ensure that appropriate funding mechanisms are in place to fund the needed improvements which result from development and subsequent growth. Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.
- Community sewage treatment and disposal facilities with collection systems will be required for all developments of 75 or more lots proposed as one development or cumulatively with other developments in a community area, unless soils engineering studies performed at the time of any land

division project and approved by the Kern County Environmental Health Services Department, indicate that alternative septic systems, either individual or community design, are equal to or better than a community collection, treatment, and disposal system.

- Should an urban area not be presently serviced by any sewage collection system, a timetable will be established in cooperation with the California Regional Water Quality Control Board for siting and construction of necessary collection, treatment, and disposal facilities.

- All methods of sewage disposal and water supply shall meet the requirements of the Kern County Environmental Health Services Department and the California Regional Water Quality Control Board. The Environmental Health Department shall periodically review and modify, as necessary, its requirements for sewage disposal and water supply, and shall comply with any new standards adopted by the state for implementation of Government Code Division 7 of the Water Code, Chapter 4.5 (Section 13290-13291.7).

- The County will explore financing and methods of installation of public sewage systems, which will be encouraged both in areas of existing urban density served by septic systems and in existing communities experiencing repeated septic system failures.

- Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

- The extent of community-type public services and facilities required for urban densities in the Mountain, Valley and Desert regions vary according to the following criteria:

  – Within the Valley and Desert regions, new residential development sites less than or equal to 1 acre net lot size density, commercial, and industrial land uses shall be serviced by necessary and appropriate sewer and water systems.

  – Within the Valley and Desert regions, new residential development sites less than or equal to 1 acre net lot size density, commercial, and industrial land uses shall be serviced by necessary and appropriate sewer and water systems.

  – Within the Mountain Region, new residential development sites less than or equal to 2.5 acres gross lot size density, commercial, and industrial land uses shall be serviced by necessary and appropriate sewer and water systems.

- Development in areas without adequate infrastructure or development that places a burden on public services (i.e., fire, sheriff, parks, and libraries) shall be discouraged.

- Locations for new industrial activities shall be provided with adequate infrastructure (water, sewage disposal systems, roads, drainage, etc.) to minimize effects on County services.

- Encourage utilization of wastewater treatment facilities which provide for the reuse of wastewater.

Metropolitan Bakersfield General Plan

The Metropolitan Bakersfield General Plan includes the following policies related to wastewater:

- Locate new development where infrastructure is available or can be expanded to serve the proposed development.

- Ensure that land use and infrastructure development are coordinated.

- The developer shall be responsible for all on-site costs incurred as a result of the proposed project, in addition to a proportional share of off-site costs incurred in service extension or improvements. The availability of public or private services or resources shall be evaluated during discretionary project consideration. Availability may affect project approval or result in a reduction in size, density, or intensity otherwise indicated in the general plan's map provisions.

- In the county, all residential developments that provide complete public infrastructure improvements including community water distribution and sewage collection and treatment systems may be permitted a density increase up to 20 percent. All land division activities shall be consistent with this provision.

- Effect the consolidated collection, treatment, and disposal of wastewater from all urban development within the metropolitan area, discouraging the creation or expansion of separate systems, and encouraging the consolidation and interconnection of existing separate systems.

- Define benefit-related areas in which appropriate development fees will be assessed or assessment districts will be established to defray the costs of the wastewater collection, treatment, and disposal facilities necessary to serve such areas.

- Consider utilization of capital improvement funds and assessment district monies to construct sewer trunk lines consistent with development timing.

4.17.3.3 Environmental Impacts

Thresholds of Significance

For the purposes of this EIR, Kern COG has determined that adoption and/or implementation of the proposed 2026 RTP would result in significant impacts to the County's wastewater, if any of the following would occur:

- Require or result in the relocation or construction of new or expanded wastewater treatment facilities or expansion of existing facilities, the construction or relocation of which could cause significant environmental effects.
- Result in the determination by a wastewater treatment provider that it has inadequate capacity to serve projected demand in addition to existing commitments.

Methodology

Project impacts are evaluated according to the above standards of significance by using information on existing wastewater systems infrastructure in Kern County. The methodology for determining the significance of these impacts applies the significance criteria above to the expected future (2049) demand for wastewater facilities and compares future demand under the 2026 RTP to the existing capacity.

Both short-term construction-related impacts and long-term or permanent impacts from new facilities resulting from the implementation of the 2026 RTP are discussed below. In addition, there is potential for direct impacts (need to relocate existing sewers) from new transportation projects, and possibly development projects. Project specific impacts may vary and appropriate mitigation measures would need to be developed on a project-by-project basis.

Determination of Significance

The determination of significance for wastewater impacts compares existing capacity of wastewater systems to expected demand in future plan conditions.

Impacts and Mitigation Measures

Impact WW-1 **Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or**

telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Impact WW-2 **Result in the determination by a wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projected demand in addition to the provider's existing commitments.**

Regional and Transit Priority Area Impacts

Wastewater generation rates are closely tied to population growth (and water conservation measures). The total population of Kern County is increase by 106,900 persons or 12 percent over the time period of the Plan, thus wastewater generation is anticipated to increase by up to 12 percent. However, water conservation is likely to substantially reduce wastewater generation through a combination of mandates and voluntary efforts. There is currently insufficient information to precisely determine future reductions in water use and, therefore, wastewater generation. **Table 4.17-4,** above, provides the current flows and capacity flows of the wastewater treatment plants located in Kern County. As shown, the wastewater treatment plants in Kern County have approximately 94.84 mgd of flow capacity. Based on the current flows, the wastewater treatment plants are operating at approximately 62 percent capacity. Consequently, there is a remaining capacity of approximately 38 percent or approximately 36 mgd of flow capacity. This may not be sufficient to accommodate the wastewater flows produced by the anticipated increased population, especially because population growth may not occur where existing wastewater treatment capacity exists. As such, new or expanded wastewater treatment plants and associated infrastructure could be required, the construction of which could result in a potentially significant impact.

Wastewater treatment is strictly regulated, and exceedances of wastewater treatment requirements of the Regional Water Quality Control Board are not anticipated.

In addition to increasing demand for wastewater treatment facilities, increases in housing and population would increase the use of existing wastewater conveyance infrastructure (sewers). The proposed development projects would either be accommodated by existing infrastructure, or project proponents would be required, by local ordinances and state regulations, to make wastewater infrastructure improvements. In less developed areas of the region, new housing and employment developments would require additional wastewater infrastructure and control measures to minimize additional wastewater generation. The higher-density development proposed as part of the 2026 RTP could also require construction of new wastewater infrastructure in existing urbanized areas with greater conveyance capacity.

It is anticipated that development under the 2026 RTP will require construction of new wastewater treatment facilities as well as new wastewater conveyance facilities in order to meet demand. Routine infrastructure projects involving replacing or upgrading sewer lines generally result in less than significant effects. Any impacts from the construction of new wastewater treatment facilities would occur at the local level. While it is anticipated that additional facilities would be necessary to accommodate growing capacity, no such projects are proposed at this time. Therefore, to the extent that any significant impacts could result from the unique characteristics of a specific project site, those impacts would be speculative.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Impacts regarding exceeding treatment requirements, impacts from the construction of facilities, and inadequate capacity are considered less than significant.

4.17.3.4 Cumulative Impacts

The 2026 RTP includes transportation projects and development in the region. The Plan targets growth primarily in urban areas. However, the 2026 RTP could facilitate additional development and, therefore, demand for wastewater outside the region. However, in general, wastewater conveyance and treatment infrastructure that would be impacted by the 2026 RTP is contained within Kern County, and a substantial addition to cumulative impacts in other areas is not anticipated. Impacts would not be cumulatively considerable.

4.18 WILDFIRE

This section describes existing wildfire conditions within Kern County, identifies the regulatory framework with respect to laws and regulations that affect wildfire, and analyzes the potential impacts of the Kern COG RTP. In addition, this EIR provides regional-scale mitigation measures as well as project-level mitigation measures to be considered by lead agencies for subsequent, site-specific environmental review to reduce identified impacts as appropriate and feasible.

4.18.1 ENVIRONMENTAL SETTING

4.18.1.1 Definitions

Definitions of terms used in the regulatory framework, characterization of baseline conditions, and impact analysis for wildfire are provided.

CAL FIRE: California Department of Forestry and Fire Protection (abbreviated Cal Fire and styled CAL FIRE). CAL FIRE is the State of California's fire protection agency responsible for the protection and stewardship of over 31 million acres of the state's privately-owned wildlands. CAL FIRE is an "all-risk" department, meaning its teams may respond to a car crash, medical incident, hazardous material spill, or natural disaster, not just fires. CAL FIRE is also responsible for managing 71,000 acres of Demonstration State Forests, overseeing enforcement of state forest management regulations, and operating training and certification courses.[1]

Clearance: Space cleared of vegetation as required by law, regulation, easement, etc., for the purpose of preventing fires.

Containment/Control: A fire is contained when it is completely surrounded by a boundary, but is still burning and has the potential to jump a boundary line. The boundary may be a "fire line," which is a strip of area where the vegetation has been removed to deny the fire fuel, or a river, a freeway, or some other barrier that is expected to stop the fire. Hose lines from fire engines may also contribute to a fire being surrounded and contained. A fire is controlled when there is no further threat of it jumping a containment line. While crews continue to do mop-up work within the fire lines, the fire fight is over.

Contract Counties: Contract counties are counties where the local county fire department is contracted by CAL FIRE to protect a State Responsibility Area (SRA). Section 4133 of the Public Resources Code and Section 55607 of the Government Code permit the CAL FIRE Director to contract with counties for

1 California Department of Forestry and Fire Protection. About Us. Available online at https://www.fire.ca.gov/about-us/, accessed April 5, 2026.

protection of SRAs. In California, six counties provide fire-prevention services in SRAs under contract with the state. These counties are Marin, Kern, Santa Barbara, Ventura, Los Angeles, and Orange.

Damage Assessment: Amount of economic loss, including cost of fire suppression.

Defensible Space: An area either natural or manmade where material capable of causing a fire to spread unchecked has been treated, cleared, reduced or changed in order to act as barrier between the advancing wildfire and the loss to life, property, or resources. This concept is vital for firefighter safety and provides the single significant element of protection of individual property owners. California law requires homeowners to maintain 100 feet of defensible space around homes and structures.

Easement: A right to cross or otherwise use someone else's property for a specified purpose.

Fire Hazard: Dangerous accumulation of flammable fuels in wildland areas, usually referring to vegetation or the flammable materials that may be ignited by various fire risks or cause fires to increase in intensity or rate of spread.

Fire Hazard Zoning: A planning and regulatory activity (typically conducted by a local agency such as a city or county) which provides criteria for what kinds, how many and under what conditions development or other activities should be regulated in areas of various hazard classification.

Fire Season: In California fire season generally lasts for six to eight months, from summer to early fall. In recent years, fire season has extended into December.

Greenbelts: A facility or land use designed for a use other than fire protection, which will slow or resist the spread of a wildfire. Includes parking lots, irrigated or landscaped areas, golf courses, parks, playgrounds and maintained vineyards, orchards or annual crops that do not cure in the field.

Interface/ Wildland Interface: The meeting point of wildland and structures. At this interface, structures and vegetation are sufficiently close that a wildland fire could spread to structures or a structure fire ignites vegetation.

Intermix/ Wildland Intermix: Interspersing of developed land with wildland, where there are no easily discernible boundaries between the two systems. In this setting, there may be homes or other structures intermixed with wildland fuels, as opposed to a distinct area of wildland fuel adjacent to a developed area.

Local Responsibility Area (LRA): Areas where wildland fire protection is the responsibility of the local government. Local responsibility area fire protection is typically provided by city fire departments, fire protection districts, counties, and by CAL FIRE under contract to local governments.

Prescribed Burning: Controlled application of fire to wildland fuels, in either their natural or modified state, under conditions of weather, fuel moisture, soil moisture, etc., as to allow the fire to be confined to a predetermined area and at the same time to produce results to meet planned objectives of land management.

Santa Ana Winds: Santa Ana winds blow from the northeast toward the beaches as areas of strong high pressure build across the interior west. The wind speed can be magnified as air squeezes over mountain passes and rushes downhill, heating and drying as it descends in elevation. Severe Santa Ana Wind events pose a heightened wildfire risk.

State Responsibility Area (SRA): SRAs are areas in which the primary financial responsibility for preventing and suppressing fires is that of the state and is defined based on land ownership, population density and land use. These include lands covered wholly or in part by timber, brush, undergrowth or grass, whether of commercial value or not; lands which protect the soil from erosion, retard run-off of water or accelerated percolation; lands used principally for range or forage purposes; lands not owned by the Federal government; and lands not incorporated. By Board regulations, unless specific circumstances dictate otherwise, lands are removed from SRA when housing densities average more than 3 units per acre over an area of 250 acres. CAL FIRE has SRA responsibility for the protection of more than 31 million acres of California´s privately-owned wildlands.[2]

Wildland: Refers to unoccupied lands

Wildland Urban Interface: Refers to the geographical point where flammable vegetation meets man- made structures.

4.18.1.2 Existing Conditions

A wildfire is defined as a non-structural fire in undeveloped area with the potential to spread to an urban area. While wildfires are common across California, a variety of factors can affect the likelihood of a fire occurring and the severity of the burn. Unsurprisingly, locations with hot, dry, and windy conditions face a greater fire hazard than wetter and cooler locations, and communities near wildland areas are more endangered than those in cities and towns. Vegetation, topography, roadways, and management methods also contribute to an area's potential for fire hazards. Steep hillsides and varied topography may also increase the risk of wildland fires, and could affect natural resources, as well as life and property. Most fires in California occur during late summer and early fall, but recently the fire season is starting earlier

2 CAL FIRE. *Fire Hazard Severity Zones*. Available online at: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones, accessed April 5, 2026.

and lasting longer in the year, affecting areas longer, and resulting in more extreme events due to climate change.

CalFire publishes Fire Hazard Severity Zone Maps for the entire State of California, which include fire hazard measurements, as well as the areas that are under State Responsibility Areas (SRA) lands or Local Responsibility Area (LRA) lands, for each county in the State. These maps place areas of the state into different fire hazard severity zones (FHSZ) based on a hazard scoring system using subjective criteria for fuels, fire history, terrain influences, housing density, and occurrence of severe fire weather where urban fire could result in catastrophic losses. As part of this mapping system, land where CAL FIRE is responsible for wildland fire protection and generally located in unincorporated areas is classified as a SRA. In addition to establishing local or state responsibility for wildfire protection in a specific area, CAL FIRE designates areas as very high fire hazard severity (VHFHSZ) zones or non-VHFHS zones.[3]

As part of a nationwide climate change trend, California has been experiencing exceedingly hotter years on record every year.[4] The heat, coupled with years of drought and an increase of forest pests and disease linked to climate change, has created perfect fire conditions that allowed for some of the most destructive and deadliest fires in the state's history. Wind direction and intensity, particularly for fires close to populated areas pose not only safety issues, but also air quality related health issues.

Fire Hazard Severity Zones

Wildland fire protection in California is the responsibility of either the local, state, or federal government. Public Resources Code Section 4201-5 (Chapter 806, Statues of 1982) requires CAL FIRE to evaluate fire hazard severity and map FHSZ for all SRA.[5] FHSZs are based on factors such as fuel, slope, and weather and are designated as moderate, high, and very high. Zone classification is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings. By identifying areas with the potential for more severe wildfire hazards, FHSZ maps allow for proper planning, prevention, and mitigation that reduce wildfire damages. CAL FIRE produced Fire Hazard Severity Zone maps for the areas of California where local governments have financial responsibility for wildland fire protection, known as Local Responsibility Area or LRA at the end of 2023 which then went into effect in April 2024. Per law, only lands zoned as Very High Fire Hazard Severity are identified within local responsibility

---

3 CAL FIRE. *Fire Hazard Severity Zones*. Available online at: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones, accessed April 5, 2026.

4 NASA Earth Observatory, *California Heatwave Fits a Trend*, September 6, 2020. Available online at: https://science.nasa.gov/earth/earth-observatory/california-heatwave-fits-a-trend-147256/#:~:text=The%20dry%2C%20hot%20conditions%20helped,intense%20heatwaves%20in%20Southern%20California. , accessed on April 6 2026.

5 California Legislative Information. 1982. *Article 9. Fire Hazards Severity Zones [4201-4204].*

areas.[6]

After the Oakland Hills Fire of 1991, the "Bates Bill" (Senate Bill 337) was passed in 1992, calling on CAL FIRE to make recommendations to local jurisdictions where VHFHSZs exist. The bill provides direction for local jurisdictions to mitigate fire spread and reduce the intensity of uncontrolled blazes.

Fire hazard severity zone levels range from Moderate to Very High. Fire hazard severity zones are designated in three types of areas based on the level of government that is financially responsible for preventing and suppressing wildfires:

- Federal Responsibility Areas (FRAs): The federal government is financially responsible for wildfire suppression. Within Kern County, FRAs are located principally northeast of Bakersfield and in the far east of the county along its border with San Bernardino County.

- State Responsibility Areas (SRAs): The state is financially responsible for wildfire suppression. SRAs are located in unincorporated areas of the County, particularly along the mountain ranges east of Bakersfield.

- Local Responsibility Areas (LRAs): Cities or the County are financially responsible for wildfire suppression. LRAs in Kern County are in the center of the county, in and around Bakersfield, and in the southeast area of the County.

Kern County

Though wildland fires are a natural part of the ecological processes, in the past, it was presumed that all wildland fires should be extinguished promptly. This caused "protected" vegetation to grow denser, weakening vegetation in a struggle for living space and increasing destruction by pests and disease, and in turn, added fuel for future fire. In addition, the absence of fire can alter or disrupt the cycle of natural plant succession and the associated habitats that form. Recognizing this, land management agencies are now committed to finding ways, such as prescribed burning, to reintroduce fire into natural ecosystems. In addition, California has experienced extended droughts, which increase dead and dying vegetation, dry fuel per acre volumes, and many days of low humidity. Furthermore, the majority of wildfires in the region are human-caused by factors including but not limited to campfires and building fires. This remains true even before accounting for the crisis of anthropogenic climate change, which exacerbates wildfires. Wildfire increases the potential for runoff and erosion, as fire removes ecological stabilizers such as vegetation and healthy soil. In coastal regions and other areas with steep slopes, scorched land left after a wildfire is

6 CAL FIRE. Fire Hazard Severity Zones. Available online at: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones, accessed April 5, 2026

particularly susceptible to debris flow and other hazards. SRAs and LRAs have been mapped throughout Kern County.[7] The majority of VHFHSZs are located where wildlands meet urbanized areas, usually near large recreation areas.

Climate Change

In the last decade, California has experienced nine of the state's ten most destructive fires in its history.[8] The State has also continued to incur substantial wildfire suppression costs. In 2025 alone, California experienced more than 8,000 wildfires that burned over 500,000 acres and destroyed more than 16,000 structures.[9] In response to increasing wildfire risk, the State has continued to allocate significant funding toward wildfire resilience and prevention. The 2025–2026 State Budget includes substantial investments in forest health, wildfire prevention, defensible space, and community hardening programs.[10] Over the past five decades, summertime forest fires have increased in size by roughly 800 percent. Though no single wildfire can be attributed solely to climate change, evidence shows that the increase in average temperatures statewide is creating conditions more prone to wildfires.[11] Recent temperature trends indicate that California continues to experience above-average warming conditions, which contribute to drier fuels and longer fire seasons. In addition, wildfire events continue to represent a substantial source of greenhouse gas emissions. For example, in 2024, wildfires in California burned approximately 1 million acres. [12] For comparison, during the 2020 wildfire season, wildfires burned approximately 4.2 million acres and emitted approximately 106.7 million metric tons of carbon dioxide. Studies suggest that greenhouse gas emissions from wildfires create a positive feedback loop, wherein the emissions warm the planet further, leading to more wildfires and more emissions.[13]

---

7 CAL FIRE. Fire Hazard Severity Zones. Available online at: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones, accessed April 5, 2026

8 CalFire, Statistics. Available online at: https://www.fire.ca.gov/our-impact/statistics , accessed on April 8, 2026.

9 CalFire, Statistics. Available online at: https://www.fire.ca.gov/our-impact/statistics , accessed on April 8, 2026.

10 California Department of Finance, 2025–2026 State Budget – Climate and Wildfire Resilience Investments. Available online at: https://www.ebudget.ca.gov , accessed April 17, 2026.

11 Earth's Future, Observed impacts of anthropogenic climate change on wildfire in California. Earth's Future, 7, 892– 910. 2019. Available online at: https://doi.org/10.1029/2019EF001210 , accessed April 8, 2026.

12 CAL FIRE, 2024 Incident Statistics Summary. Available online at: https://www.fire.ca.gov/our-impact/statistics, accessed April 2026.

13 California Air Resources Board, Greenhouse Gas Emissions of Wildfires, Prescribed Fire, and Forest Management Activities,. Available online at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/pubs/ca_ghg_wildfire_forestmanagement.pdf

4.18.2 REGULATORY FRAMEWORK

4.18.2.1 Federal

Disaster Mitigation Act (DMA) of 2000

DMA 2000 (Public Law 106-390) provides the legal basis for FEMA mitigation planning requirements for state, local, and tribal governments as a condition of mitigation grant assistance. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act by repealing the previous mitigation planning provisions and replacing them with a new set of requirements that emphasize the need for state, local, and tribal entities to closely coordinate mitigation planning and implementation efforts. The requirement for a state mitigation plan is continued as a condition of disaster assistance, adding incentives for increased coordination and integration of mitigation activities at the state level through the establishment of requirements for two different levels of state plans. DMA 2000 also established a new requirement for local mitigation plans and authorized up to seven (7) percent of Hazard Mitigation Grant Program (HMGP) funds available to a state for development of state, local, and tribal mitigation plans.[14]

Federal Response Plan

The Federal Response Plan of 1999 is a signed agreement among 27 federal departments and agencies, including the American Red Cross, that (1) provides the mechanism for coordinating delivery of federal assistance and resources to augment efforts of state and local governments overwhelmed by a major disaster or emergency; (2) supports implementation of the Robert T. Stafford Disaster Relief and Emergency Act, as well as individual agency statutory authorities; and (3) supplements other federal emergency operations plans developed to address specific hazards. The Federal Response Plan is implemented in anticipation of a significant event likely to result in a need for federal assistance or in response to an actual event requiring federal assistance under a Presidential declaration of a major disaster or emergency.[15]

Federal Emergency Management Agency (FEMA) Regulation

The primary mission of FEMA is to reduce the loss of life and property and protect the nation from all hazards, including natural disasters, acts of terrorism, and other human-made disasters, by leading and supporting the nation in a risk-based, comprehensive emergency management system of preparedness,

---

14 FEMA. *Disaster Mitigation Act of 2000*. Available online at: https://www.fema.gov/emergency-managers/risk-management/hazard-mitigation-planning/regulations-guidance, accessed April 8, 2026

15 *Federal Response Plan, April 1999*. Available online at: http://www1.mwcog.org/security/security/otherplans/fed_response_sum.pdf, accessed April 8, 2026.

protection, response, recovery, and mitigation.[16] Kern County is under the jurisdiction of FEMA Region 9, which covers Arizona, California, Hawaii, Nevada, Guam, American Samoa, Commonwealth of Northern Mariana Islands, Republic of Marshall Islands, Federated State of Micronesia, and more than 150 sovereign tribal entities. In California, FEMA Region 9 specifically plans for hazards such asmajor earthquakes and wildfires.[17]

National Fire Plan

The Department of the Interior's National Fire Plan is intended to ensure an appropriate federal response to severe wildland fires, reduce fire impacts to rural communities, and ensure sufficient firefighting capacity in the future.[18]

4.18.2.2 State

Senate Bill 99

In November 2018, the Camp Fire devastated the town of Paradise, California, killing 86 people and destroying nearly 19,000 structures. One reason the Camp Fire was so deadly was the lack of adequate evacuation routes to simultaneously allow residents to leave and first responders to enter. Although modern developments require adequate ingress and egress routes, many existing developments, such as those in Paradise, predate these requirements. SB 99, signed into law on August 30, 2019, requires cities to identify in the safety element of their general plans any residential developments in any wildfire hazard areas that do not have at least two emergency evacuation routes.[19] Senate Bill 901

After record-breaking drought in California from 2011 to 2017, perfect wildfire conditions allowed faulty PG&E utility lines to spark devastating fires that would scorch over 4,000 square miles of land across the state. In response to the deadly season, the California Legislature developed Senate Bill 901 (Utility Wildfire Management Plans) as the "centerpiece measure" in its attempt to rectify damages from the 2017 wildfires and prevent future wildfire disasters. SB 901 mandates all electric utilities to prepare and submit wildfire mitigation plans that describe the utilities' plan to prevent, combat, and respond to wildfires

---

16 Government Publishing Office. *Title 44: Emergency Management and Assistance*. Available online at: https://www.ecfr.gov/current/title-44/part-201, accessed April 8, 2026.

17 FEMA. *FEMA Region IX: Arizona, California, Hawaii, Nevada. & the Pacific Islands.* Available online at: https://www.fema.gov/fema-region-ix-arizona-california-hawaii-nevada-pacific-islands, accessed April 8, 2026.

18 *Wildland Fire Management: The National Fire Plan*. Available online at: https://www.forestsandrangelands.gov/documents/resources/reports/2007/nfp2007_budget_justification.pdf, accessed April 8, 2026.

19 California Legislative Information. 2019. *Senate Bill No. 99.*

affecting their service territories. The California Public Utilities Commission (CPUC) will review and refine the plans before implementing and enforcing them. In the short-term, SB 901 allows PG&E to lean on its customers in paying for billions of dollars in fire-related damages. It also provides over $1 billion for vegetation management over five years.[20]

Assembly Bill 1054 (AB 1054)

AB 1054 was signed into law by Governor Gavin Newsom on July 12, 2019, creating a $21 billion fund to help California's investor-owned utilities cover liabilities caused by wildfires. Under the legislation, the state's investor-owned utilities will put a combined $5 billion toward improvements in their electrical grids to access the fund. Ratepayers will also contribute $10.5 billion by way of a 15-year extension of an existing rate increase. The bill also imposes several conditions on utilities, including $5 billion in safety investments and utility participation in a new annual safety certification process overseen by CPUC.[21] The legislation was passed in the wake of the Camp Fire, California's deadliest and most destructive wildfire in history. Pacific Gas & Electric (PG&E) Corp's equipment failure was responsible for the blaze. PG&E sought bankruptcy protection after the Camp Fire so it could reorganize its finances to pay $30 billion in liabilities from multiple wildfires.[22]

Senate Bill 1079 (SB 1079)

SB 1079 (Forest Resources: Fire Prevention Grant Fees) builds from existing laws establishing grants to private entities, Native American tribes, and public agencies to assist in the implementation and administration of projects and programs relating to improving forest health and reducing GHG emissions. SB 1079 authorizes CAL FIRE to make advance payments to grantees (such as fire safe councils, Native American tribe, or special district), which receive funds from the healthy forest and local fire-prevention grant programs.[23]

---

20 Office of Energy Infrastructure. *https://energysafety.ca.gov/what-we-do/electrical-infrastructure-safety/wildfire-mitigation-and-safety/wildfire-mitigation-plans/)*. Available online at: https://energysafety.ca.gov/what-we-do/electrical-infrastructure-safety/wildfire-mitigation-and-safety/wildfire-mitigation-plans/ accessed April 8, 2026.

21 California Legislative Information. 2019. *Assembly Bill No. 1054.*

22 Washington Post. *PG&E power lines to blame for California's deadliest wildfire ever, officials say.* Available online at: https://www.washingtonpost.com/nation/2019/05/15/camp-fire-caused-by-electrical-lines-owned-operated-by-pge-authorities-say/, accessed April 8, 2026.

23 California Legislative Information. 2018. *Senate Bill No. 1079*.

Senate Bill 1241 (SB 1241)

In 2012, SB 1241 added Section 66474.02 to Title 7 Division 2 of the California Government Code, commonly known as the Subdivision Map Act. The statute prohibits subdivision of parcels designated as very high fire hazard, or that are in an SRA, unless certain findings are made prior to approval of the tentative map. The statute requires that a city or county planning commission make three new findings regarding fire hazard safety before approving a subdivision proposal. The three findings are, in brief: (1) the design and location of the subdivision and its lots are consistent with defensible space regulations found in PRC Section 4290-91, (2) structural fire protection services will be available for the subdivision through a publicly funded entity, and (3) ingress and egress road standards for fire equipment are met per any applicable local ordinance and PRC Section 4290. The Occupational Safety and Health Act (29 Code of Federal Regulations [CFR] Parts 70 to 2400), which is implemented by the Federal Occupational Safety and Health Administration (OSHA), contains provisions with respect to hazardous materials handling. Federal OSHA requirements, as set forth in 29 CFR Section 1910 et seq., are designed to promote worker safety, worker training, and a worker's right–to-know. In California, OSHA has delegated the authority to administer OSHA regulations to the State of California.[24]

Assembly Bill 301

Assembly Bill 301 was enacted to amend Section 4213.1, and to add Section 4213.2 to the Public Resources Code related to fire prevention. Section 4213.1 requires CAL FIRE to notify a property owner that the property's terms of sale could include a portion of the Fire Prevention Fee. Section 4213.2 allows a property owner to negotiate a portion of the fee as one of the terms of sale.[25]

Assembly Bill 38 (California Emergency Services Act)

This bill would require the Natural Resources Agency, by July 1, 2021, and in consultation with the State Fire Marshal and the Forest Management Task Force, to review the regional capacity of each county that contains a very high fire hazard severity zone to improve forest health, fire resilience, and safety, as specified. On or after July 1, 2021, the bill would require a seller of real property located in a high or very high fire hazard severity zone to provide specified documentation to the buyer that the real property is in compliance with the wildfire protection measures or a local vegetation management ordinance, or enter into an agreement with the buyer pursuant to which the buyer will obtain documentation of compliance.[26]

---

24 California Legislative Information. 2012. *Senate Bill No. 1241*.

25 California Legislative Information. 2015. *Assembly Bill No. 301*.

26 California Legislative Information. 2008. *Assembly Bill No. 38*.

Assembly Bill 2551

Approved in 2018, Assembly Bill 2551 Forestry and Fire Prevention: Joint Prescribed Burning Operation (AB 2551) authorizes CAL FIRE to collaborate with private landowners on controlled burns to reduce wildfire fuel. Mismanagement of the forests can lead to a build-up of forest underbrush that serves as a perfect fuel for wildfires. By allowing small, non-industrial landowners to choose to individually implement various fire prevention programs, such as prescribed burns, AB 2551 promotes good, local forest management in the state.[27]

State California Department of Forestry and Fire Protection

CAL FIRE protects the people of California from fires, responds to emergencies, and protects and enhances forest, range, and watershed values, providing social, economic, and environmental benefits to rural and urban citizens. CAL FIRE's firefighters, fire engines, and aircraft respond to an average of more than 5,600 wildland fires each year. The Office of the State Fire Marshal supports CAL FIRE's mission by focusing on fire prevention. It provides support through a wide variety of fire safety responsibilities including regulating buildings in which people live, congregate, or are confined; controlling substances and products which may, in and of themselves, or by their misuse, cause injuries, death, and destruction by fire; providing statewide direction for fire prevention in wildland areas; regulating hazardous liquid pipelines; reviewing regulations and building standards; and providing training and education in fire protection methods and responsibilities.[28]

State Fire Regulations

Fire regulations for California are established in Sections 13000 et seq. of the California Health and Services Code and include regulations for structural standards (similar to those identified in the California Building Code); fire protection and public notification systems; fire protection devices such as extinguishers and smoke alarms; standards for high-rise structures and childcare facilities; and fire suppression training. The State Fire Marshal is responsible for the enforcement of these established regulations and building standards for all state-owned buildings, state-occupied buildings, and state institutions within California.[29]

---

27 California Legislative Information. 2018. *Assembly Bill No. 2551*.

28 CAL FIRE Office of the State Fire Marshal. 2022. *About the Office of State Fire Marshal*. Available online at: https://osfm.fire.ca.gov/about-us/, accessed April 8, 2026.

29 California Legislative Information. *Division 12. Fires and Fire Protection*.

California Governor's Office of Emergency Services (OES)

Cal OES is the Emergency Management authority for the State of California. The California Governor's Office of Emergency Services (Cal OES) began as the State War Council in 1943. With an increasing emphasis on emergency management, it officially became OES in 1970. On July 1, 2013, Governor Edmund G. Brown Jr.'s Reorganization Plan #2 eliminated the California Emergency Management Agency (Cal EMA); restored its powers, purposes, and responsibilities to Cal OES; and also merged it with the Office of Public Safety Communications. Cal OES' mission statement is the following: "Protect lives and property, build capabilities, and support our communities for a resilient California." OES goals include:[30]

- **Goal 1:** Anticipate and enhance prevention and detection capabilities to protect our State from all hazards and threats.
- **Goal 2:** Strengthen California's ability to plan, prepare for, and provide resources to mitigate the impacts of disasters, emergencies, crimes, and terrorist events.
- **Goal 3:** Effectively respond to and recover from both human-caused and natural disasters.
- **Goal 4:** Enhance the administration and delivery of all state and federal funding and maintain fiscal and program integrity.
- **Goal 5:** Develop a united and innovative workforce that is trained, experienced, knowledgeable, and ready to adapt and respond.
- **Goal 6:** Strengthen capabilities in public safety

California Public Resources Code

Fire Hazard Severity Zones – Public Resources Code Sections 4201–4204 Public Resources Code (PRC) Sections 4201–4204 and Government Code Sections 51175–89 direct CAL FIRE to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. FHSZ define the application of various mitigation strategies to reduce risk associated with wildland fires.[31]

---

30 Governor's Office of Emergency Services. *Strategic Plan Goals.* Available online at: https://www.caloes.ca.gov/cal-oes-divisions/about-cal-oes/strategic-plan, accessed April 8, 2026.

31 California Legislative Information. 1982. *ARTICLE 9. Fire Hazard Severity Zone [4201-4204].*

California Fire Code

Part 9 of the 2019 California Building Standards Code (CBC) (Cal. Code Regs., Title 24) covers the California Fire Code (2019, Title 24, Part 9). The purpose of the California Fire Code is to establish the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures, and premises.

The purpose of the California Fire Code is to establish the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout California. The Fire Code includes regulations regarding fire-resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire services features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas. The Kern County Fire Department has adopted the California Fire Code as part of its building regulations.[32]

California Fire Plan

The Fire Plan is a cooperative effort between the State Board of Forestry and Fire Protection and the California Department of Forestry and Fire Protection. By placing the emphasis on what needs to be done long before a fire starts, the Fire Plan looks to reduce firefighting costs and property losses, increase firefighter safety, and to contribute to ecosystem health. The current plan was adopted in 2024, which reflects CAL FIRE's goals of 1) fire prevention and suppression activities to protect lives, property, and ecosystem services, and 2) natural resource management to maintain the state's forests as a resilient carbon sink to meet California's climate change goals and to serve as important habitat for adaptation and mitigation.[33]

California Disaster Assistance Act (CDAA)

The California Disaster Assistance Act (CDAA; CCR Title 19, Chapter 6) authorizes the Director of the

---

32 Building Codes, Kern County Fire Department. Available online at: https://kerncountyfire.org/fire-prevention/building-codes/, accessed on April 8, 2026.

33 CAL FIRE. *Strategic Fire Plan for California*. Available online at: https://www.fire.ca.gov/about/cal-fire-strategic-plan-2024 , accessed April 8, 2026.

California Governor's Office of Emergency Services (Cal OES) to administer a disaster assistance program that provides financial assistance from the state for costs incurred by local governments as a result of a disaster event. Funding for the repair, restoration, or replacement of public real property damaged or destroyed by a disaster is made available when the Director concurs with a local emergency proclamation requesting state disaster assistance.[34]

Governor's Office of Planning and Research (OPR)

The Governor's Office of Planning and Research serves the Governor and his Cabinet as staff for long-range planning and research and constitutes the comprehensive state planning agency (Government Code Section 65040). OPR is empowered to draft *State CEQA Guidelines* for adoption by the Secretary of Natural Resources in collaboration with the Natural Resources Agency. In January 2018, OPR transmitted its proposal for comprehensive updates to the *State CEQA Guidelines* to the Natural Resources Agency, which finalized the updates in late 2018. The updated Guidelines became effective on December 28, 2018.

California Public Utilities Commission Fire Safety Rulemaking

In December 2017, CPUC issued Decision (D.) 17-12-024 adopting regulations to enhance fire safety in the High Fire Threat District (HFTD) and subsequently adopted CPUC's final fire threat map. This map, together with CAL FIRE's Tier 1 High Hazard Zones comprise the HFTD Map where stricter fire-safety regulations apply. These regulations include requiring utilities to prioritize safety hazards, maintain more stringent wire-to-wire clearances in certain areas, and prepare a fire prevention plan annually if they have overhead facilities in the HFTD.

Further, electric utilities may disconnect service to customers who refuse to provide access to their property for the removal of trees that pose an immediate threat to contacting a power line.[35]

4.18.2.3 Local

County General Plans

In addition to federal and state requirements, general plans and municipal codes of counties and cities in Kern County include safety elements with goals and policies related to protecting people and property

---

34 Governor's Office of Emergency Services. 2026. *California Disaster Assistance Act (CDAA)*. Available online at: https://www.caloes.ca.gov/cal-oes-divisions/recovery/public-assistance/california-disaster-assistance-act, accessed April 8, 2026.

35 California Public Utilities Commission, Press Release December 14, 2017. *CPUC Adopts New Fire-Safety Regulations.* Available online at: http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M201/K352/201352402.PDF, accessed January 12, 2022.

from risks from wildfires and associated hazards.

Kern County General Plan

The Safety Element of the Kern County General Plan sets strategies for natural and man-made hazards in Los Angeles County.[36] Section 4.6 of the Safety Element identifies wildland and urban fire hazards in Kern County, along with policies and mitigation measures to enhance wildfire and evacuation safety. These applicable goals and policies include:

Policies

1) Require discretionary projects to assess impacts on emergency services and facilities.

2) The County will encourage the promotion of public education about fire safety at home and in the workplace.

3) The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.

4) Ensure that new development of properties has sufficient access for emergency vehicles and for the evacuation of residents.

5) Require that all roads in wildland fire areas are well-marked, and that homes have addresses prominently displayed.

6) All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

Implementation Measures

a) Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

b) The provision of an adequate water supply for firefighting purposes should be encouraged for all housing areas where an inadequate supply now exists.

---

36 Chapter 4-Safety Element. *Kern County General Plan*. 2009. Available online at: Kern County General Plan - Safety Element, accessed on April 8, 2026.

City General Plans

The Kern COG region spans countywide inclusive of 11 cities, each of which has a general plan that contains policiesrelated to hazards, including those related to fires. Additional plans and ordinances at the master plan level, city-level, and specific plan level may also apply within the Kern COG region. Furthermore, fire departments and other agencies in the Kern COG region have a variety of local laws that regulate reporting, storage, handling, and transporting hazardous substances and materials.

4.18.3 ENVIRONMENTAL IMPACTS

4.18.3.1 Thresholds of Significance

For the purposes of this PEIR, Kern COG has determined that adoption and/or implementation of the proposed RTP would result in significant impacts to the County's wildfire risk, if any of the following could occur:

- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires.
- If located in or near state responsibility areas of lands classified as very high fire hazard severity zones, the project would:
- Substantially impair an adopted emergency response plan or emergency evacuation plan (this criterion is addressed in **Section 4.16, Transportation, Traffic, and Safety**);
- Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;
- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or
- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

4.18.3.2 Methodology

The methodology for determining the significance of the Plan's impacts on wildfire response and related hazards and infrastructure compares the existing conditions to future (2049) conditions. The Kern County Fire Department's Emergency Operations Plan evaluated conditions and hazards within Kern County at

the programmatic level, in relation to the general plans of the county and 11 cities within Kern County.[37]

The Plan provides for the integration and coordination of planning efforts of the County/Operational Area with those of its cities, special districts, and the state. The content is based on guidance provided by the California Emergency Management Agency, the Federal Emergency Management Agency, and the Department of Homeland Security. The intent of the Plan is to facilitate emergency response and short-term recovery by providing a framework for response to all significant emergencies, regardless of the nature of the event. This analysis considers the Plan's impacts on wildfire hazards, provides mitigation measures, where necessary, and addresses the environmental effects related to wildfire hazards. The potential for impacts related to wildfire was assessed by evaluating the location of existing and planned major transportation projects in relation to surrounding land uses and fire hazard severity zones. Because some transportation projects and growth under the Plan could be located in or near SRAs or lands classified as very high hazard severity zones, all potential wildfire impacts are analyzed below.

Determination of Significance

The significance of impacts was determined by applying the significance criteria above to compare current regional wildfire and transportation conditions to expected future conditions with the Plan. Other considerations, such as the existing drought, climate change, and other environmental factors, could exacerbate wildfire risks to areas surrounding future development projects. Existing emergency plans, policies, bills, and measures could offset and mitigate wildfire risks; however, the statewide trend indicates that such natural disasters will worsen with time.

Approach to Mitigation

As discussed in **Chapter 1.0, Introduction**, Kern COG has no authority to impose mitigation measures on individual projects for which it is not the lead agency. Mitigation measures in this Program EIR that include the language, "Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to …" are intended to be used by projects seeking to use this Program EIR for CEQA streamlining (e.g., under SB 375, SB 743, and SB 226) and tiering. For projects seeking to use CEQA streamlining and/or tier from the 2022 RTP Program EIR, mitigation measures included in this Program EIR (or their equivalent) should be required by the lead agency as appropriate and applicable. Many lead agencies have existing regulations, policies, and/or standard conditions of approval that address potential impacts. Nothing in this Program EIR is intended to supersede existing regulations and policies of individual jurisdictions. Since Kern COG has no authority to

[37] Kern County Fire Department. Emergency Operations Plan. Available online at: https://kerncountyfire.org/education-safety/emergency-plans/, accessed on April 8, 2026.

impose mitigation measures, all mitigation measures are subject to a city or county's independent discretion as to whether measures are applicable to projects in their respective jurisdictions. Lead agencies may use, amend, or not use measures identified in this Program EIR as appropriate to address project-specific conditions. The determination of significance and identification of appropriate mitigation is solely the responsibility of the lead agency.

4.18.3.3 Impacts and Mitigation Measures

Impact WF-1 Expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

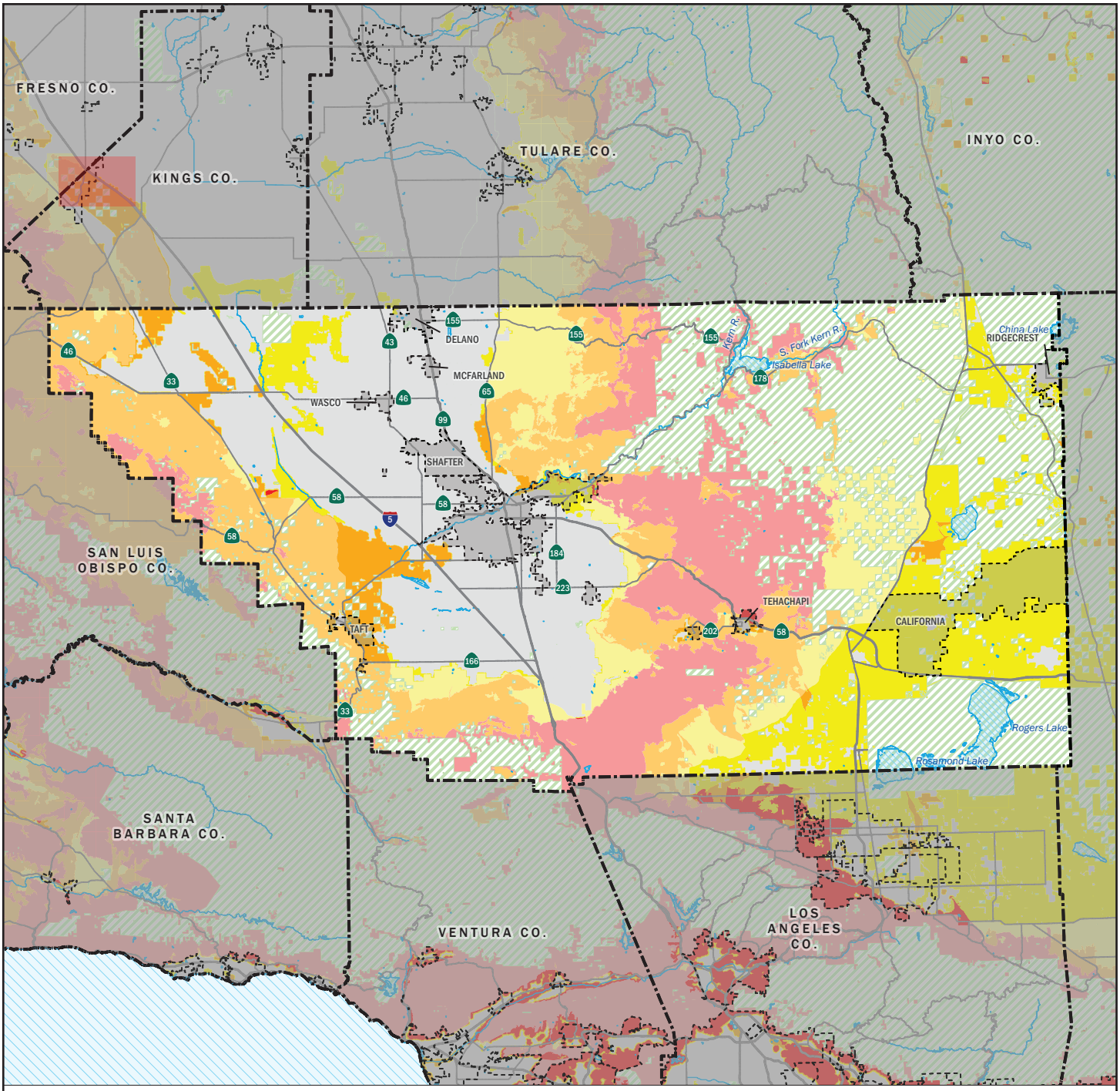
Regional and Transit Priority Area Impacts

Wildfires can cause significant damage to people and property because they can spread quickly across large areas. Implementation of the 2026 RTP could pose a significant risk of loss, injury, or death as some development projects may be adjacent to wildlands intermixed with wildlands.

In this analysis, anticipated future land uses are discussed in general programmatic terms. Project-specific, future land uses are unknown. Fire threats are depicted in **Figure 4.18-1, Kern County Wildfire Hazard Severity Zones.** By 2049, the number of structures adjacent to wildlands and areas known for wildfire risk would be expected to increase as the population and number of housing units increase. The threat of wildfires from the development of areas within CAL FIRE's responsibility, which include non-federal lands in unincorporated areas with watershed value, is addressed through compliance with Title 14 of the CCR, Division 1.5, to minimize exposing people and structures to loss, injury, or death and damage. Title 14 identifies the minimum development standards for emergency access, fuel modification, setback, signage, and water supply, which help prevent damage to structures or people by reducing wildfire hazards.

In addition, wildfire prevention is a shared responsibility between federal, state, and local agencies. Federal lands fall under Federal Responsibility Areas, and all incorporated areas and other unincorporated lands are classified as Local Responsibility Areas.

The 2026 RTP includes the expansion or extension of the transportation system, which could increase the threat of adverse impacts from wildland fires. Transportation improvements that expand the transportation system and extend it to new areas can expose more urban-adjoining land uses to risks associated with wildland fires.





Fire Hazard Severity Zones (FHSZ) in Local Responsibility Area (LRA), as Identified by the State Fire Marshal

Very High | High | Moderate

Fire Hazard Severity Zones in State Responsibility Area (SRA), Effective April 1, 2024

Very High | High | Moderate

Mi 0 10 20 30 40 50

Km 0 10 20 30 40 50 60 70 80

Projection: NAD 83 California Teale Albers
Scale: 1:980,000 at 11" x 17"

Incorporated City | Waterbody

Unzoned LRA | Federal Responsibility Area (FRA)

SOURCE: CalFire, 2026

FIGURE **4.18-1**

Kern County Wildfire Hazard Severity Zones

IMPACT SCIENCES

1170.004•04/26

Transportation improvements, especially capacity improvements, generally improve the transportation network to move people more efficiently, in case there is a need to evacuate due to a wildfire. As discussed above, the threat of wildfires from transportation improvements and development within CAL FIRE's responsibility is addressed through compliance with Title 14 of the CCR, Division 1.5.

Nonetheless, implementation of the 2026 RTP would result in additional residential structures being located in wildfire risk areas. As such, the impact would be potentially significant. **Mitigation Measures MM WF-1** and **MM WF-2** below are required.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

MM WF-1 Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to avoid siting new development in wildfire zones.

MM WF-2 Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to ensure that in the event that new development occurs in wildfire zones, the projects comply with safety measures as specified by CAL FIRE.

Level of Significance After Mitigation

Mitigation Measures MM WF-1 and **MM WF-2** would reduce the potential for residential structures being located in wildfire risk areas. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts are considered significant and unavoidable.

Impact WF-2 **If located in or near state responsibility areas of lands classified as very high fire hazard severity zones, the project would:**

Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

According to Cal Fire, Kern County has areas of moderate, high, and very high fire hazard zones, which,

like most of California, is susceptible to wildfires, particularly during the summer and fall seasons.[38] Proposed transportation project buildout under the 2026 RTP in relation to wildfire hazard severity zones is delineated in **Figure 4.18-1, Kern County Wildfire Hazard Severity Zones**. As shown, a majority of the highway and carpool ITS/ROW projects are concentrated in urbanized and agricultural areas, which are less susceptible to wildfire risk. However, one improvement project is located in a high fire hazard zone in the center of the County, and several more are located to the eastern part of the County in moderate fire hazard zones. Mitigation measures included in this section are meant to off-set risks in the development of these projects.

Examples of recent fires in the central California region include: the Erskine Fire that burned the Lake Isabella region of Kern County and was recorded to be the second-largest fire of the 2016 California season at almost 50,000 acres;[39] and the French Fire in 2021, which burned more than 26,000 acres west of Lake Isabella.[40] The Erskine Fire was caused by a powerline that wore down over time as it rubbed against a tree,[41] while the cause of the French Fire has yet to be determined.[42]

Wildfires have the potential to occur not only in fire-prone undeveloped areas, but also in developed areas where existing transmission lines, lightning strikes, lawn equipment operated over dry grass, fireworks, and even arson may ignite a wildfire.

During peak wildfire season, when high winds and low humidity may occur, electrical utilities may preemptively shut off power to customers in wildfire-prone areas as a precautionary measure. For example, Southern California Edison began this practice in 2017 and notifies customers two days in advance. At the direction of CPUC, customers who live in high fire risk areas, as defined by CPUC maps, are more likely to experience a power shutoff.[43]

The ongoing crisis of climate change has worsened wildfire conditions in California and Kern County. Since the early 1970s, California's annual wildfire extent has increased fivefold, punctuated by extremely large and destructive wildfires in 2017 and 2018. This trend was mainly due to an eightfold increase in

---

38 Cal Fire, *Very High Fire Severity Hazard*. Available online at: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones , accessed on April 8, 2026.

39 Bakersfield.com, *Erskine Fire Caused by Power Line, Fire Officials Say*, 2019. Available online at: https://www.bakersfield.com/news/erskine-fire-caused-by-power-line-fire-officials-say/article_bd1f7a02-bbc6-59e2-a47f-30fc7a99b744.html, accessed on April 8, 2026.

40 Bureau of Land Management, *Central California District – French Fire*. 2021. Available online at: https://inciweb.nwcg.gov/incident/7813/, accessed on April 8, 2026.

41 Ibid at Bakersfield.com.

42 Ibid at Bureau of Land Management.

43 Southern California Edison. *Public Safety Power Shutoffs.* Available online at: https://www.sce.com/safety/wildfire/psps, accessed April 8, 2026.

summertime forest-fire area and was very likely driven by drying of fuels promoted by human-induced warming.[44] Since climate change makes droughts more frequent and severe and makes temperatures warmer in California, the drying of fuels is likely to continue worsening conditions in wildfire-prone areas of Kern County.

Wildfires pose a significant public health risk due to their air quality impacts, particularly with regard to smoke and particulate matter exposure. This risk persists even after a wildfire is extinguished because particulate matter from fire ash can be picked up by winds. In addition, as discussed in **Section 4.8, Greenhouse Gases**, wildfires release substantial amounts of greenhouse gases.

Furthermore, wildfire-prone areas tend to pose accessibility challenges for vehicular access points due to topography. These roads could face more gridlock in the event of a sudden emergency evacuation than flat, urbanized areas may experience. Such circumstances could expose vehicle occupants to active flames and potential death, as was seen in the Palisades Fire in Pacific Palisades[45], the Camp Fire in the town of Paradise and the Woolsey Fire in Malibu.[46] Transportation projects and anticipated development projects may be located in wildfire-prone areas, which could potentially exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from wildfires or the uncontrolled spread of wildfires, particularly those populations living downwind of the fire. As such, impacts would be significant and unavoidable. Mitigation is required.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

See **Mitigation Measures MM WF-1** and **MM WF-2** above.

Level of Significance After Mitigation

Mitigation Measures MM WF-1 and **MM WF-2** would reduce the potential for residential structures being

---

44 Williams, A. P., Abatzoglou, J. T., Gershunov, A., Guzman-Morales, J., Bishop, D. A., Balch, J. K., & Lettenmaier, D. P. (2019). Observed impacts of anthropogenic climate change on wildfire in California. Earth's Future, 7, 892–910. Available online at: https://doi.org/10.1029/2019EF001210, accessed April 8, 2026..

45 Hoa Ding, *Evacuation Challenges During the Palisades Fire: Initial Insights,* January 2026, available at: https://lewis.ucla.edu/research/evacuation-challenges-during-the-palisades-fire-initial-insights/ , accessed April 30, 2026.

46 New York Times, *Forced Out by Deadly Fires, Then Trapped in Traffic.* Available online at: https://www.nytimes.com/2018/11/11/us/california-fire-paradise.html, accessed April 8, 2026.

located in wildfire risk areas. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts are considered significant and unavoidable.

Impact WF-3 Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risks or that may result in temporary or ongoing impacts to the environment.

Kern County contains a mix of urban and agricultural uses as well as oil and gas industry. Mountainous and desert regions exist to the eastern part of the County, prone to wildfire risk. Future development and/or re-development in these areas has the potential to require the installation of new roadways or infrastructure facilities such that there is an increased risk of new ignition sources generating the spread of wildfires. Areas with dry vegetation have the potential to exacerbate wildfire risk due to future development activities that could generate flammable debris piles. This is particularly true in the rural and underdeveloped parts of the County. Future roadway and development construction in such areas, while likely to be less in the future, may still occur, such development has the potential to result in significant impacts as a result of construction equipment generating sparks or oil spill and other combustible materials leading to the start and spread of wildfires. Newer electrical equipment providing power to any new homes developed in fire prone areas is anticipated to be fitted with fire-safe devices, but hazards may remain as a result of electricity infrastructure as well as common fire hazards associated with human habitation.

The Plan includes land use strategies that encourage further development in urban areas. As discussed above, natural lands conservation has the co-benefit of protecting communities from major hazards caused or exacerbated by climate change, such as wildfires and flooding.

Nonetheless, it is expected that new development will also occur in rural or suburban areas which may have a greater wildfire risk. Increased development, in combination with a push for more electrical infrastructure (e.g., SB 100), may result in increased wildfire risk due to power lines. SCE maintains a policy to shut off power to its lines during high wildfire probability events (i.e., when conditions are such that wildfire is a high probability) which would help to reduce potential impacts.47 In addition, many local jurisdictions and plans require undergrounding of electrical infrastructure which also helps to reduce risk of wildfire. Development may continue to occur in urban/wildlands interface areas which would necessitate infrastructure such as power poles that could result in wildfire risk. As such, significant impacts would occur and mitigation measures are required.

47 Southern California Edison. *Public Safety Power Shutoff.* Available online at: https://www.sce.com/safety/wildfire/psps, accessed April 8, 2026.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

See **Mitigation Measures MM WF-1** and **MM WF-2** above.

Level of Significance after Mitigation

Mitigation Measures **MM WF-1** and **MM WF-2** would reduce overall fire risk. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts are considered significant and unavoidable.

Impact WF-4 Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope stability, or drainage changes.

Wildfires are becoming more and more common and intense in all areas of the County. While the RTP focuses development in urban and compact areas, Kern COG recognizes there will continue to be development towards, and through natural wildland areas. These potential fire-prone spaces have created situations where people and property could be impacted by wildfire and associated subsequent hazards (flooding, landslides, etc.). As discussed in **Section 3.10, Hydrology and Water Quality**, intense rainfall may occur during winter months, creating natural flooding events when the ground in saturated and water levels are high. This has the potential for flooding issues, and fire hazards may exacerbate such flooding and debris flows along waterways. Since debris flows may occur quickly and without warning, such flows can damage structures, block drainage or even sweep away vegetation resulting in tenuous post-fire slope stability. Fast moving debris flows can be one of the most dangerous post-fire hazards. Due to the loss of vegetation and potential resulting soil erosion, debris flows may cause a risk to life and physical property, destroy or strip vegetation, block existing drainage patterns, and impact roadways and other infrastructure. If this were to occur within the 100-year floodplain areas, existing flow conditions may be altered, or new sources of flooding may be created. This has the potential to alter peak flow conditions and affect upstream, as well as downstream areas. Typically, debris flow from fire damaged areas may be a result of excessive rainfall runoff and surface erosion, since previously-burned slopes repel water and generate higher runoff rates. This can be especially true in the higher elevation areas, with steep slopes and limited drainage basins. Post-fire debris flows are typically triggered by heavy rainfall in areas already damaged by recent wildfire events, and susceptible to soil erosion.

Landslides, mudslides, and highly destructive debris flows can occur in the years immediately after wildfires as a response to high-intensity rainfall.[48] This is due in large part to the water that liquefies unstable, dry soil and burned vegetation.[49] Post-fire debris flows are particularly hazardous because they can occur with little warning, strip vegetation, block drainage ways, damage structures, and endanger human life. A demonstration of such destructive landslides occurred in the Montecito community of Santa Barbara County on January 9, 2018, as a result of the 2017 Thomas Fire, which resulted in 23 deaths.[50]

In October 2025, communities in the Kern River Valley faced flash flooding and an atmospheric river threatening mudslides.[51] Moreover, during the winter of 2022, a severe rainstorm in Kern County triggered intense flash flooding and massive mudslides between the Central Valley and Southern California that caused the closure of Interstate 5 over the Grapevine.[52] Such instances are expected to continue to occur in communities and landscapes devastated by wildfires followed by intense rainstorms. Development of homes and infrastructure is anticipated to continue to occur in areas of the region that are subject to wildfire hazards, despite the Plan's focus on adding development to existing urban areas. Due to the anticipated increased consumption of greenfields under the Plan, development may continue to occur in urban/wildlands interface areas, which would result in significant risks for people and structures. Therefore, the impacts would be significant and unavoidable, requiring mitigation.

Level of Significance Before Mitigation

Potentially significant at the regional and TPA levels.

Mitigation Measures

See **Mitigation Measures MM WF-1** and **MM WF-1** above.

---

48 USGS, *What should I know about wildfires and debris flows?* Available online at: https://www.usgs.gov/faqs/what-should-i-know-about-wildfires-and-debris-flows, accessed on April 8, 2026..

49 USGS, Post-wildfire Landslides Becoming More Frequent in Southern California, February 25, 2021. Available online at: https://www.usgs.gov/news/state-news-release/post-wildfire-landslides-becoming-more-frequent-southern-california#:~:text=Wildfires%20make%20the%20landscape%20more,dry%20soil%20and%20burned%20vegetation., accessed on April 8, 2026..

50 Cal EOS, Remembering the Montecito Mudslides Three Years Later, January 8, 2021. Available online at: https://news.caloes.ca.gov/remembering-the-montecito-mudslides-two-years-later/, accessed on April 8, 2026..

51 Kern Valley Sun, *Storm Batters Kern River Valley with Mudslides, Flooding, and Snow Rescues*, October 14, 2025. Available online at: https://kernvalleysun.com/stories/storm-batters-kern-river-valley-with-mudslides-flooding-and-snow-rescues,37527 , accessed on April 8, 2026.

52 ABC 30, *I-5 over the Grapevine, Highway 58 remain closed following mud slides*, 2022. Available online at: https://abc30.com/drivers-trapped-on-gapevine-after-mudslide-kern-county-rain-storm/1035801/, accessed on April 8, 2026.

Level of Significance after Mitigation

Mitigation Measures **MM WF-1** and **MM WF-2** would reduce overall wildfire risk. However, because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, at the regional and TPA levels, even with implementation of the measures above, impacts are considered significant and unavoidable.

4.18.4 CUMULATIVE IMPACTS

Development of transportation or housing projects in wildfire-prone areas would cause an increase in population exposed to wildfire risk and exacerbate exposure of those populations to pollutant concentrations from wildfires, particularly populations living downwind of the fire. Furthermore, wildfire-prone areas tend to have fewer vehicular access points than flat, urbanized areas; these roads could face gridlock in the event of a sudden emergency evacuation. Such circumstances could expose vehicle occupants to active flames and potential death. As such, the 2026 RTP would result in significant impacts with respect to wildfire. Given that wildfires ignore regional boundaries, the Plan could also add to the impacts of other RTPs outside the region. Therefore, the wildfire risk from the 2026 RTP could contribute to cumulative impacts of the RTP's in bordering regions.

5.0 ALTERNATIVES

This chapter sets forth alternatives to the 2026 RTP and provides an analysis of each alternative and a comparison of each alternative's impacts to impacts anticipated under the Plan. Key provisions of the *State CEQA Guidelines* Section 15126.6 pertaining to an EIR alternatives analysis are summarized below.

- An EIR shall describe a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.

- An EIR need not consider any conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. An EIR is not required to consider alternatives that are infeasible.

- Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment, the discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly.

- The range of alternatives required in an EIR is governed by a "rule of reason" That requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to those that would avoid or substantially lessen any of the significant effects of the proposed project. Of these alternatives, the EIR needs to examine in detail only the ones that the Lead Agency determines could feasibly attain most of the basic objectives of the project.

- The No Project Alternative shall be evaluated along with its impacts to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The No Project Alternative analysis shall discuss the existing conditions at the time the notice of preparation is published, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

- An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

Among the factors that may be taken into account when addressing the feasibility of alternatives (as described in *State CEQA Guidelines* Section 15126.6[f][1]) are environmental impacts, site suitability, economic viability, availability of infrastructure, general plan consistency, regulatory limitations, and jurisdictional boundaries.

An EIR must briefly describe the rationale for selection and rejection of alternatives. The lead agency may make an initial determination as to which alternatives are feasible and, therefore, merit in-depth consideration. Alternatives may be eliminated from detailed consideration in the EIR if they fail to meet project objectives, are infeasible, or do not avoid any significant environmental effects.

5.1 PROJECT IMPACTS AND OBJECTIVES

As described in **Chapter 4.0, Environmental Impact Analysis,** of this PEIR, the 2026 RTP could or would result in significant and unavoidable impacts to the following (significant at the regional and TPA level unless otherwise indicated):

Aesthetics: Implementation of the 2026 RTP would have a substantial adverse effect on a scenic resource or vista (**Impact AES-1** and **Impact AES-2**) and would impair views of scenic resources such as mountains, rivers, or significant manmade structures as seen from existing transportation facilities or other key public vantage points. In addition, construction and implementation of the projects associated with the 2026 RTP could create significant contrasts with the visual character of the existing landscape setting (**Impact AES-2**), as well as create a new source of substantial light or glare, which could affect day or nighttime views (**Impact AES-4**). All of these impacts would only be significant at the regional level. The 2026 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

Agricultural Resources: Implementation of the projects and land use strategies in the 2026 RTP would result in the conversion of prime, unique farmland or farmland of statewide importance to non-agricultural uses, either directly (**Impact AG-1**) or through other changes in the existing environment (**Impact AG-4**). Additionally, the implementation of the transportation projects and land use strategies in the 2026 RTP would result in development of agricultural lands (with active Williamson Act contracts) (**Impact AG-2**), and impact forest lands (**Impact AG-3**). All of the aforementioned impacts on agricultural resources would only be significant at the regional level. The 2026 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

Air Quality: Implementation of the 2026 RTP would result in a substantial increase short-term emissions of criteria pollutants (**Impact AIR-3**), as well as an increase (greater than current emission levels) in projected long-term emissions of toxic air contaminants (diesel particulate matter from heavy duty trucks and other emissions from industrial activities (**Impact AIR-4**); localized concentrations of toxic air

contaminants at sensitive receptors (short term and long term) could be greater than existing conditions (**Impact AIR-5**). The 2026 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

Biological Resources: Implementation of the 2026 RTP would have a substantial adverse effect on sensitive and special status wildlife and plant species (**Impact BIO-1**). It would also have a substantial adverse effect on riparian habitat and other sensitive natural communities (**Impact BIO-2**), and on federally-protected wetlands (**Impact BIO-3**), as well as on wildlife migration and migratory corridors (**Impact BIO-4**). The 2026 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

Cultural Resources: The focused growth in urban areas could lead to significant impacts on historic structures (**Impact CR-1**). The consumption of undeveloped land would result in a significant risk of uncovering previously undisturbed archeological (**Impact CR-2**), or human remains (**Impact CR-3**), as well as tribal cultural resources **(Impact TCR-1**). The 2026 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

Energy: The 2026 RTP would result in the use of substantial amounts of electricity and natural gas (**Impact EN-1**), thereby requiring the construction of new facilities and new sources of energy or major improvements to local infrastructure (**Impact EN-2**). The 2026 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

Geology and Soils: New land uses and transportation development included in the RTP could result in soil erosion or the loss of topsoil because of new exposed graded surfaces, excavation, stockpiling, or boring, which are necessary during development (**Impact GEO-2**). Additionally, the development forecast in the proposed RTP could be located on land that is unstable, or that could become unstable from a project and result in geologic hazards (**Impact GEO-3**) or be located on expansive soil (**Impact GEO-4**). Implementation of the Plan may cause ground disturbing activities to unearth paleontological resources (**Impact GEO-6**). The 2026 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

Greenhouse Gas Emissions: Implementation of the 2026 RTP would directly and indirectly cause increases in GHG emissions over existing levels (**Impact GHG-1**), and may conflict with the State's ability to achieve emission reduction targets set by SB 32 and EO-S-3-05 (**Impact GHG-2**). The 2026 RTP's contribution to such impacts would also be cumulatively considerable.

Hazards and Hazardous Materials: Implementation of the transportation network improvements, as well as anticipated development, would involve an increase in the routine transport, use, and disposal of

hazardous materials (**Impact HAZ-1**). Regional development will increase density and population, and it will include a variety of land uses that will increase the potential for upset or accident conditions involving the release of hazardous materials into the environment (**Impact HAZ-2**). Projects associated with the Plan have the potential to disturb contaminated soils (**Impact HAZ-4**). The 2026 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

Hydrology and Water Resources: New development could substantially deplete existing groundwater supplies, and increased impervious surfaces would reduce groundwater infiltration, reducing recharge and potentially affecting aquifer volume (**Impact W-1**). New development could substantially deplete existing groundwater supplies, and increased impervious surfaces would reduce groundwater infiltration, reducing recharge and potentially affecting aquifer volume (**Impact W-2**). The Plan could alter existing drainage patterns or substantially increase the rate or amount of surface runoff in a manner that would result in flooding or produce or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems at the regional level (**Impact W-3**). Implementation of the Plan will result in substantially increased demand for water (**Impact W-4**). A portion of the transportation projects and land use developments under the 2026 RTP could take place within 100-year flood hazard areas; therefore, the 2026 RTP could result in housing being placed within a 100-year flood hazard area (**Impact W-5**). This may result in a conflict with a water quality control plan or a sustainable groundwater management plan (**Impact W-6**). The 2026 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

Land Use: Implementation of the projects and land use pattern in the 2026 RTP could result in inconsistencies with currently applicable adopted local land use plans and policies, including general plans, specific plans, or zoning ordinances (**Impact LU-1**). Projects associated with the Plan have the potential to disrupt or divide established communities (**Impact LU-2**). The 2026 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

Mineral Resources: Transportation projects contained in the Plan and development projects anticipated to occur under the Plan have the potential to impact availability of mineral resources if they are constructed in mineral resource zones (**Impact MIN-2**). The 2026 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

Noise: Projects associated with the Plan could expose persons or generate noise in levels in excess of standards established in the local general plan or noise ordinance, result in substantial temporary or periodic increases in ambient noise levels above existing levels, or result in a substantial permanent increase in ambient noise levels (**Impact NOISE-1**). The Plan also would expose people to or generate excessive

groundborne vibration (**Impact NOISE-2**). The 2026 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

Population, Housing and Employment: The transportation investments and land use patterns in the 2026 RTP would foster economic and household growth and would remove some obstacles to growth in some parts of the region (**Impact POP-1**). The 2026 RTP would also require the acquisition of rights-of-way that could displace existing homes or businesses (**Impact POP-2**). The 2026 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

Public Services: Existing parks and recreational facilities and services would experience increased use due to projected growth during the lifetime of the 2026 RTP resulting in substantial physical deterioration (**Impact REC-1**). The 2026 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

Transportation: Implementation of projects included in the 2026 RTP would substantially increase total daily VMT in 2049 compared to current daily VMT (**Impact TR-2**).

Utilities:

Solid Waste: Implementation of the 2026 RTP could result in an increase in the amount of solid waste that could exceed the region's available landfill capacity to handle and dispose of the waste (**Impact SW-1**). The 2026 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

Wildfire: Transportation improvements that expand the transportation system and extend it to new areas can expose more urban-adjoining land uses to risks associated with wildland fires (**Impact WF-1**). Kern County has areas of moderate, high, and very high fire hazard zones, which, like most of California, is susceptible to wildfires, particularly during the summer and fall seasons (**Impact WF-2**). Increased development as a result of the Plan may continue to occur in urban/wildlands interface areas, which would necessitate infrastructure such as power poles that could result in wildfire risk (**Impact WF-3**).

5.1.1 Objectives and Goals

As called for by the *State CEQA Guidelines*, the achievement of project objectives must be balanced by the ability of an alternative to reduce the significant impacts of the project. The objectives of the 2026 RTP are the following seven goals:

1. **Mobility** – Improve the mobility of people and freight.

2. **Accessibility** – Improve accessibility to, and the economic well-being of, major employment and other regional activity centers.

3. **Reliability/Safety** – Improve the reliability and safety of the transportation system.

4. **Efficiency** – Maximize the efficiency and cost effectiveness of the existing and future transportation system.

5. **Livability** – Promote livable communities and satisfaction of consumers with the transportation system.

6. **Sustainability** – Provide for the enhancement and expansion of the system while minimizing effects on the environment.

7. **Equity** – Ensure an equitable distribution of the benefits among various demographic and user groups.

While all goals are considered interrelated and important, mobility is considered the plan's highest goal. A feasible alternative must meet most of these project objectives. In addition, while not specifically required under CEQA, other parameters may be used to further establish criteria for selecting alternatives, such as adjustments to phasing, and other "fine-tuning" that could shape feasible alternatives in a manner that could result in reducing identified environmental impacts.

5.2 ALTERNATIVES TO THE PROPOSED PROJECT

The *State CEQA Guidelines* indicate that an EIR should identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are (i) failure to meet most of the basic project objectives, (ii), infeasibility, or (iii) inability to avoid significant environmental impacts. (*State CEQA Guidelines* Section 15126.6(a)(c).) No alternatives were identified but rejected from further consideration.

5.2.1 Alternative 1 – No Project

The No Project Alternative is required by Section 15126.6(e)(2) of the *CEQA Guidelines* and assumes that the Plan would not be implemented. The No Project Alternative allows decision-makers to compare the impacts of approving the project with the impacts of not approving the project. However, "no project" does not necessarily mean that development will be prohibited. The No Project Alternative includes "what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services."[1] For purposes of this document, the No Project Alternative includes only those transportation projects that are included in the

1 *State CEQA Guidelines* § 15126.6[e][2]

first year of the previously conforming transportation plan and/or TIP, or have completed environmental review by January 2026. These reasonably foreseeable projects meet the definition of the CEQA-mandated "No Project Alternative." The growth scenario included in the No Project Alternative is based on local general plans and growth patterns reflective of growth that would occur without the RTP. However, it is noted that communities have started to incorporate sustainable planning practices into their general plans, including the anticipated updated General Plan for Bakersfield, and therefore growth trends (i.e., the No Plan scenario) are starting to converge on a sustainable pattern consistent with RTP strategies.

5.2.2 Alternative 2 – Old Plan Alternative

The Old Plan Alternative is an update of the adopted 2022 RTP, reflecting the most recent regional growth forecast, transportation planning decisions, and growth pattern assumptions from the 2022 RTP. This Old Plan alternative has some similar development pattern strategies as those included within the 2026 Sustainable Communities Strategy (SCS), but includes transportation projects seen in the 2022 RTP. The Old Plan also includes less funding for maintenance, transit, and alternative transportation projects. The growth scenario for the Old Plan is a combination of local input and existing general plan and land use data provided by local jurisdictions during the 2022 RTP and Kern Regional Blueprint process, which represented a significant change from previous development patterns.

5.2.3 Alternative 3 – Countywide Infill Alternative

The Countywide Infill Alternative would result in a more aggressive development pattern than the other Alternatives. Under the Countywide Infill Alternative, 53 percent of new growth would be accommodated as infill development, with 94 percent of housing as medium or high density (multi-family and small lot/townhomes) in the predominant urban area. Countywide, the housing mix would average about two-thirds medium or high density. The transportation network would be the same as under the Plan Alternative, with the exception that passenger rail and transit improvements are accelerated. **Table 5.0-1** summarizes the housing mix for each of the alternatives.

Table 5.0-1
Summary of Growth for 2026 RTP and Alternatives

Alternative	% Infill All Growth	Metro % Infill All Growth	GROWTH ONLY					
			Multi-family		Small Lot/Townhome		Large Lot	
			County	Metro	County	Metro	County	Metro
Plan	29%	59%	18%	29%	24%	32%	58%	39%
No Project	25%	48%	9%	14%	18%	26%	73%	60%
Old Plan	29%	59%	18%	25%	27%	35%	55%	40%
Infill Alternative	53%	94%	38%	64%	19%	27%	43%	10%

Source: Kern COG, 2026

Table 5.0-2 summarizes transportation performance across alternatives.

Table 5.0-2
Alternatives Performance Summary

Performance Measures	2024	2049			
		Plan	Old Plan (Alternative 2)	Infill (Alternative 3)	No Project
Total VMT per Weekday (Thousands)	23,382	25,842	26,153	25,351	26,826
Congested Vehicle Hours (Level of Service D, E, F)	493,669	551,175	554,601	539,071	570,838
Congested Vehicle Hours in Core Urban Areas	263,911	289,277	287,890	281,696	303,920
Other Indicators					
All Transit (Boardings)	14,480	21,496	33,162	24,549	16,205
All Transit	1.96%	2.24%	2.32%	2.24%	1.96%
Transit (Walk+Drive)	0.26%	0.33%	0.47%	0.38%	0.25%
Passenger Rail	0.00%	0.18%	0.17%	0.18%	0.00%
School Bus	1.70%	1.73%	1.68%	1.68%	1.71%
Bike+Walk (Non-Motorized)	7.05%	8.01%	9.15%	8.52%	7.60%
Single Occupancy Vehicle (SOV)	41.95%	41.77%	41.52%	41.21%	42.81%
High Occupancy Vehicles (HOV) 2+ per vehicle	49.04%	48.16%	47.19%	48.20%	47.63%

Source: Kern COG 2026

A summary comparison of major impact categories of the Project and alternatives is included in **Table 5.0-3, Comparison of Alternatives to the Proposed Project**.

Table 5.0-3
Comparison of Alternatives to the 2026 RTP*

Environmental Issue	Project Impact	Alternative 1 – No Project Alternative	Alternative 2 – Old Plan Alternative	Alternative 3- Countywide Infill Alternative
Aesthetics				
Scenic Vistas	Significant (regional)	Greater (significant)	Less (significant)	Less (significant)
Visual Character	Significant (regional)	Greater (significant)	Similar (significant)	Greater (significant)
Light and Glare	Significant (regional)	Similar (significant)	Less (glare)(significant) Greater (light)(significant)	Greater (significant)
Agricultural Resources				
Convert Prime Farmland	Significant (regional)	Greater (significant)	Greater (significant)	Less (significant)
Conflict with Land Use/Williamson Act	Significant (regional)	Greater (significant)	Greater (significant)	Less (significant)
Convert Forest land	Significant (regional)	Greater (significant)	Greater (significant)	Less (significant)
Air Quality				
Conflict with Air Quality Plans	Less than significant	Greater (significant)	Greater (significant)	Less (Less than significant)
Violate Air Quality Standards	Less than significant	Greater (significant)	Greater (significant)	Less (less than significant)
Criteria Pollutants	Significant	Similar (significant)	Similar (significant)	Similar (significant)
Expose Sensitive Receptors	Significant	Greater (significant)	Similar (significant)	Less (significant)
Other Emissions/Odors	Less than significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
Biological Resources				
Sensitive Species	Significant	Greater (significant)	Greater (significant)	Less (significant)
Riparian Communities	Significant	Greater (significant)	Greater (significant)	Less (significant)
Wetlands	Significant	Greater (significant)	Greater (significant)	Less (significant)
Migratory Fish/Birds	Significant	Greater (significant)	Greater (significant)	Less (significant)
Local Plans/HCPs	Less than significant	Greater (significant)	Greater (significant)	Less (significant)
Cultural Resources				
Historic Resources	Significant	Greater (significant)	Greater (significant)	Greater (significant)
Archeological Resources	Significant	Greater (significant)	Greater (significant)	Less (significant)
Disturb Human Remains	Significant	Greater (significant)	Greater (significant)	Less (significant)
Tribal Cultural Resources	Significant	Greater (Significant)	Greater (Significant)	Less (significant)
Energy				
Wasteful energy consumption	Significant	Greater (significant)	Greater (significant)	Less (significant)
Conflict with plan	Significant	Greater (significant)	Greater (significant)	Similar (significant)
Geology and Soils				
Seismic Hazards	Less than Significant	Similar (less than significant)	Similar (less than significant)	Less (less than significant)

Environmental Issue	Project Impact	Alternative 1 – No Project Alternative	Alternative 2 – Old Plan Alternative	Alternative 3- Countywide Infill Alternative
Soil Erosion	Significant	Greater (significant)	Greater (significant)	Less (significant)
Unstable Soil	Significant	Greater (significant)	Greater (significant)	Less (significant)
Expansive Soil	Significant	Greater (Significant)	Greater (Significant)	Less (significant)
Support use of septic tanks	Less than Significant	Greater (Significant)	Greater (Significant)	Less (significant)
Paleontological Resources	Significant	Greater (significant)	Greater (significant)	Less (significant)
Greenhouse Gas Emissions				
Increase GHG Emissions	Significant	Greater (significant)	Greater (significant)	Less (significant)
Conflict with plans	Significant	Greater (significant)	Greater (significant)	Less (significant)
Hazards and Hazardous Materials				
Transport/disposal of hazardous materials	Significant	Similar (Significant)	Similar (Significant)	Similar (Significant)
Release of hazardous materials	Significant	Similar (Significant)	Similar (Significant)	Similar (Significant)
Release of hazardous materials within 0.25 miles of a school	Less than Significant	Similar (less than significant)	Similar (less than significant)	Similar (Significant)
List of hazardous materials	Significant	Similar (significant)	Similar (significant)	Similar (Significant)
Airport hazards	Less than Significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
Interfere with emergency plan	Less than Significant	Greater (Significant)	Greater (Significant)	Less (less than significant)
Hydrology and Water Quality				
Violate water quality standards	Significant	Similar (significant)	Similar (significant)	Similar (significant)
Interfere with groundwater recharge	Significant (regional)	Greater (significant)	Greater (significant)	Similar (significant)
Place housing in flood plains	Significant (regional)	Greater (significant)	Greater (significant)	Similar (significant)
Substantial increase in demand for water	Significant	Greater (significant)	Greater (significant)	Less (significant)
Release pollutants due to inundation	Significant	Greater (significant)	Greater (significant)	Less (significant)
Land Use				
Conflict with plans	Significant	Less (significant)	Similar (significant)	Greater (significant)
Divide a community	Significant	Less (significant)	Similar (significant)	Greater (significant)
Mineral Resources				
Loss of a known mineral resource	Less than Significant	Greater (less than significant)	Greater (less than significant)	Less (less than significant)
Loss of locally important mineral resource recovery	Significant	Greater (significant)	Greater (significant)	Less (significant)
Noise				
Expose persons to noise levels in excess of established standards	Significant	Similar (significant)	Similar (significant)	Greater (significant)
Groundborne vibration	Significant	Similar (significant)	Similar (significant)	Greater (significant)
Vicinity of an Airport	Less than Significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)

Environmental Issue	Project Impact	Alternative 1 – No Project Alternative	Alternative 2 – Old Plan Alternative	Alternative 3- Countywide Infill Alternative
Population, Housing, and Employment				
Induce population growth	Significant	Similar (significant)	Similar (significant)	Similar (significant)
Displacement	Significant	Similar (significant)	Similar (significant)	Greater (significant)
Public Services – Fire and Police				
Create the need for new fire facilities	Less than significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
Create the need for new police facilities	Less than significant	Similar (significant)	Similar (significant)	Similar (significant)
Public Services – Schools				
Create the need for new school facilities	Less than significant	Similar (significant)	Similar (significant)	Similar (significant)
Public Services – Parks				
Increase use existing parks	Significant	Similar (significant)	Similar (significant)	Similar (significant)
Require construction of new parks	Less than significant	Similar (significant)	Similar (significant)	Similar (significant)
Transportation and Traffic				
Conflict with alternative transportation plans	Less than significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
Substantial increase in VMT	Significant	Greater (significant)	Greater (significant)	Less (significant)
Increase hazards	Less than significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
Inadequate emergency access	Less than significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
Utilities – Wastewater				
Exceed the capacity of existing or planned facilities	Less than significant	Greater (significant)	Greater (significant)	Similar (significant)
Utilities – Solid Waste				
Generate substantial increases in solid waste	Significant	Greater (significant)	Greater (significant)	Similar (significant)
Wildfire				
Expose people/structures to wildfire risk	Significant	Greater (significant)	Greater (significant)	Less (significant)
Located in a VHFHSZ	Significant	Greater (significant)	Greater (significant)	Less (significant)
Exacerbate fire risks from infrastructure	Significant	Greater (significant)	Greater (significant)	Less (significant)

*Impacts are for both regional level and TPA level unless otherwise indicated.

Source: Impact Sciences 2026

5.2.6 Analysis of Alternative 1 – No Project Alternative

Aesthetics

In the No Project Alternative, the population of the Kern COG region would still grow by approximately 106,900 persons through 2049, however no regional transportation investments would be made beyond existing programmed projects. The population distribution would follow past trends, which would result in greater consumption of open space areas (15,168 acres would be consumed under the No Project scenario as compared to 20,758 under the Plan).

Since the No Project Alternative includes fewer transportation projects than the proposed RTP, it would have less of an impact in terms of obstructing views and scenic resources, creating contrasting visual elements, and adding contrasting visual elements to existing natural, rural, and open space areas. The No Project Alternative would not affect any eligible State Scenic Highways or County-designated scenic highways.

The No Project Alternative is expected to accommodate the same increase in total population, households, and jobs as the Plan. However, the Plan includes strategies to further focus growth in TPAs, which would help reduce the consumption and disturbance of natural lands and reduce impacts to views and visual character. Under the No Project Alternative, these land use strategies may not occur, although individual jurisdictions may continue to seek to reduce the urban footprint through their general plans.

The Plan includes transportation improvements that could facilitate access to undeveloped lands, making those lands more attractive for development than under the No Project Alternative; however, the Plan includes policies to dissuade such encroachment on open space and vacant lands and is anticipated to result in fewer impacts to open space. It is anticipated that the land use planning strategies included in the proposed RTP would minimize consumption of vacant, open space/recreation and agricultural lands compared to the No Project Alternative (about 15,168 acres under the Plan and about 16,192 acres under the No Project Alternative). The No Project impacts would be greater than the Plan impacts for **Impacts AES-1** through **AES-3** because of the increased consumption of open space, vacant land, interspersed transportation infrastructure, and the lack of a comprehensive regional plan.

Agricultural Resources

The No Project Alternative includes fewer transportation projects than the Plan, but does not include agricultural land, timberland, or forest land preservation strategies, other than locally approved plans and policies currently in place. Initially this may minimize the potential for creating conflicts with general plans, as the only growth strategies that would occur would be local land use controls, however it also would

have less of an influence on the patterns of urbanization in the region. Thus, the No Project Alternative would result in a more dispersed land use pattern, which could have greater impacts related to conversion of agricultural land, timberland, and forest land. The No Project Alternative would result in 16,192 acres of land consumed compared to 15,168 consumed under the Plan.

Further, the No Project Alternative is expected to accommodate the same increase in total population, households, and jobs as the Plan. However, the Plan includes strategies to focus growth in TPAs, which would help reduce the consumption and disturbance of natural lands and reduce impacts to agricultural and forestland.

The Plan also includes transportation improvements that could facilitate access to undeveloped lands, potentially making those lands more attractive for development than under the No Project Alternative. However, the Plan includes policies to dissuade such encroachment on open space and vacant lands and is anticipated to result in fewer impacts. It is anticipated that the land use planning strategies included in the proposed RTP will minimize consumption of agricultural lands, timber and forest lands compared to the No Project Alternative. The No Project impacts would be greater than the Plan impacts because of the increased consumption of agricultural, forest, and timberland land, and the lack of a comprehensive regional plan.

The Plan includes land use measures that would help reduce the consumption and disturbance of agricultural lands, vacant lands, open space, and recreation lands, while the No Project Alternative does not. These policies and mitigation strategies are absent in the No Project Alternative. The more dispersed land use pattern of the No Project Alternative would consume more vacant land, but also could impact areas outside the region through setting a precedent for the conversion of non-urban lands. This would happen as development spreads out along existing freeways or similar methods of expansion.

Under the No Project Alternative land use changes could affect jurisdictions outside the Kern COG region, by setting a precedent for and/or inducing consumption of agricultural lands. The Plan would decrease congestion, potentially making it easier for people to live and work outside the region, thereby inducing land use changes outside the region.

Air Quality

Criteria Air Pollutants

Emissions of criteria pollutants from mobile sources would be affected by implementation of the No Project Alternative. In order to analyze the net impact of implementation, 2024 emissions were compared to horizon year (2049) emissions.

Results of modeling are presented in **Table 5.0-4, Criteria Pollutant Emissions from Mobile Sources**. As shown, both the Plan and the No Project Alternative would result in reductions of reactive organic gases (ROG), oxides of nitrogen (NOx), and carbon monoxide (CO), and reductions of emissions of fine particulate matter (PM2.5). These would be considered beneficial impacts. Emissions of sulfur oxides (SOx) increase slightly, but as Kern County is in attainment for both state and federal SO_2, this would not be considered a significant impact on its own. Emissions of respirable particulate matter (PM10) from mobile sources show a slight increase over existing conditions. However, as shown in **Table 5.0-4**, the 2026 RTP would result in greater reductions (i.e., fewer total emissions) for ROG, NOx, CO, PM2.5, and SOx. While PM10 and PM2.5 would increase under both scenarios, emissions would be lower under the Plan. Therefore, impacts related to criteria pollutants would be greater under the No Project Alternative.

Table 5.0-4
Criteria Pollutant Emissions from Mobile Sources – No Project Alternative (2049) vs. Plan (2049)

Scenario	Tons/Day					
	ROG	**NOx**	**CO**	**PM10**	**PM2.5**	**SOx**
2024	4.1497	13.18	34.61	1.0032	0.4237	0.1385
2026 RTP 2049	2.0669	11.88	19.8	1.2411	0.4955	0.1245
2026 RTP Net	**-2.0828**	**-1.3**	**-14.81**	**0.2379**	**0.0718**	**-0.014**
No Project 2049	2.1798	12.56	20.94	1.3208	0.5239	0.1313
No Project Net	**-1.9699**	**-0.62**	**-13.67**	**0.3176**	**0.1002**	**-0.0072**

Source: Kern COG 2026

A conformity analysis was prepared for the 2026 RTP that analyzes emissions of ozone precursors (ROG and NOx), CO, PM10, and PM2.5 compared to the approved emissions budgets for mobile sources in Kern County. The analysis found that emissions of all pollutants under the Plan passed the applicable conformity tests and would be in conformity with the State Implementation Plans (SIPs). However, both the Plan and No Project Alternatives would generate greater PM10 emissions by 2049 as a result of increased VMT. Consequently, the impact of PM10 emissions would be a potentially significant impact. Additionally, the No Project Alternative would not be subject to MM AIR-1, which would mitigate emissions. As a result, impacts would be significant and unavoidable.

Expose Sensitive Receptors to Substantial Pollutant Concentrations

Diesel particulate matter (DPM) generated from diesel-fueled engines and found in diesel exhaust has been determined by CARB to be a toxic air contaminant as defined under Section 39655 of the Health and Safety

Code. The long-term health effects of DPM include cancer, increased incidences of asthma, allergies, and respiratory disease, and the short-term health impacts include dizziness, headaches, nausea, and irritation of the eyes, nose, and throat.

PM2.5 emissions is a proxy for DPM emissions in this analysis as further described in **Section 4.3, Air Quality**. As shown in **Table 5.0-4**, above, emissions of PM2.5 for all mobile sources will be reduced under the No Project Alternative. However, in order to more closely approximate DPM emissions, PM2.5 emissions specifically from heavy-duty diesel vehicles were estimated. The emissions generated under existing conditions, as compared to the No Project Alternative, are shown in **Table 5.0-5, PM2.5 Emissions from Heavy Duty Diesel Vehicles.**

Table 5.0-5
PM2.5 Emissions from Heavy Duty Diesel Vehicles (tons/day) – No Project (2049) vs. Plan (2049)

Existing 2024	2049 RTP Plan	2049 No Project Alternative
0.278	0.359	0.378

Source: Kern COG 2026

As shown in **Table 5.0-5**, the No Project Alternative would generate more PM2.5 from heavy-duty diesel emissions than under the 2026 RTP but would be less than under existing conditions. CARB has several programs and regulations in place to reduce DPM emissions statewide. This includes enforced retrofit of diesel particulate filters, replacement of older trucks and buses, requirements for lower emissions on new diesel vehicles, inspection programs, idling restrictions, and other programs for off-road diesel vehicles. These programs and regulations would reduce DPM emissions over the period of the 2026 RTP. Consequently, it can be assumed that the reductions in PM2.5 emissions include reductions in DPM emissions region-wide.

However, on a case-by-case basis, RTP improvements may also bring sources of DPM closer to sensitive receptors through the construction of new facilities or widened roadways, which could increase exposure of sensitive receptors. To provide a qualitative measure of this potential impact, highways in Kern County were given an Air Quality Index (AQI), based on three factors: (1) average daily traffic (2) percentage of truck traffic and (3) level of service (which is a measure of traffic delays). A 'high' index indicates that a roadway has a relatively high amount of traffic and percentage of trucks with a low level of service. A 'low' index reflects a relatively low amount of traffic with fewer trucks, and a high level of service. 'Medium' would be somewhere between 'high' and 'low'. In this way, a 'high' index would qualitatively show a higher health risk as well, since roadways with a 'high' index would tend to have higher DPM

concentrations due to the higher number of trucks and lower traffic speeds. The indices for highways in Kern County and locations of sensitive receptors under existing conditions, 2026 RTP, and the No Project Alternative are shown in **Figure 4.3-3** through **Figure 4.3-5**.

Under the No Project Alternative, SR 99 AQI would be worse, and SR 178 and SR 166 AQI would improve as compared to the Plan. The overall AQIs for the No Project Alternative versus the 2026 RTP would be similar. Regarding sensitive receptor locations, the No Project Alternative scenarios would result in fewer sensitive receptors located near highways with high AQI ranking, as shown in **Table 4.3-6, Sensitive Receptors Within 0.25 miles of Highways by AQI ranking**. However, as described in **Section 4.3, Air Quality**, emissions from highways are anticipated to decline substantially due to emission controls. As a result, the No Project Alternative will have a significant impact on sensitive receptors, but lower than the 2026 RTP.

Stationary sources are another substantial source of toxic air contaminants (TACs), such as diesel generators, industrial processes, and dry cleaners. As with the 2026 RTP, the No Project Alternative does not have any direct effect on these types of sources, nor is there any available data on possible new stationary sources that would be in operation in 2049. Consequently, it is difficult to determine what contribution these sources would have to sensitive receptors, and how the No Project Alternative would influence any such contribution.

Although PM2.5 from heavy-duty vehicle exhaust would be greater in Kern County under the No Project Alternative, impacts to sensitive receptors would be similar to the Plan. Given the lack of data regarding industrial and other stationary sources of TACs, it is unknown whether these sources would result in increased emissions of TACs in 2049 compared to existing conditions, and therefore, it is unknown what their impact on health risks in Kern County would be. Impacts related to TACs would be significant for the Plan. **Mitigation Measures MM AIR-2** through **MM AIR-7** would be implemented, but would not reduce impacts to less than significant. Overall impacts from the No Project alternative would be greater than those under the Plan and would be significant as for the Plan.

Biological Resources

Implementation of the 2026 RTP would result in the same regional total population as the No Project Alternative. However, no regional transportation investments would be made beyond the existing programmed projects under the No Project Alternative. The population distribution is assumed to follow trends consistent with existing general plans, uninfluenced by additional transportation investments and growth policies contained within the RTP.

Under the No Project Alternative, fewer areas would be impacted by excavation and construction activities related to transportation projects. However, the No Project Alternative is expected to result in a less concentrated growth pattern, which would result in additional development affecting an increased amount of currently undisturbed land. While the No Project Alternative would reduce the number of transportation projects built in the Kern COG region, it would result in greater vacant land consumption that could, in turn, increase the chance of affecting significant biological resources. On balance, it is anticipated that the RTP's impacts on biological resources would be less than the No Project Alternative because it would result in 20,758 acres of land consumed compared to 22,630 acres of land consumed under the No Project Alternative.

Cultural Resources

Implementation of the 2026 RTP would result in the same regional total population (1,017,200) as the No Project Alternative. However, no regional transportation investments would be made beyond the existing programmed projects under the No Project Alternative. The population distribution is assumed to follow trends based on existing general plans, uninfluenced by additional transportation investments and growth policies contained within the 2026 RTP.

Under the No Project Alternative, fewer areas would be impacted by excavation and construction activities related to transportation projects. However, the No Project Alternative is expected to result in a less concentrated form of growth, which would affect an increased amount of currently undisturbed land (16,192 acres as compared to 15,168 with the proposed Project). While the No Project Alternative would reduce the number of transportation projects built in Kern County, it would result in greater vacant land consumption that could, in turn, increase the chance of uncovering a greater number of previously undisturbed resources.

The proposed 2026 RTP would result in concentration of development in previously developed urban areas, which could lead to greater impacts to historic buildings. However, many communities have in place regulations to protect historic resources, and even under the No Project Alternative, these areas could still redevelop, although possibly not at the same intensity as under the plan. On balance, it is anticipated that the 2026 RTP's impacts on cultural resources would be less than the No Project Alternative because it would result in fewer acres of land consumed compared to land consumed under the No Project Alternative. Therefore, the No Project impacts would be greater than the Plan impacts for **Impacts CR-2** through **CR-3** and **TCR-1**/**TCR-2** because of the increased consumption of open space and vacant land. All projects (including those under the No Project Alternative and Project) would be accountable to the same local, state, and federal regulations in place to protect identified historic resources.

Energy

The No Project Alternative includes fewer transportation with a more dispersed development pattern than the Plan. The more distributed development pattern could have more of an impact related to the need for expanded or newly constructed energy facilities. In addition, since fewer public transit options would be available than under the RTP and congestion would increase, use of petroleum fuel for personal vehicles would be greater, as indicated in **Table 5.0-6**.

Table 5.0-6
Annual Gasoline and Diesel Consumption – No Project (2049) vs. Plan (2049)

Scenario	Vehicle Miles Traveled (billions of miles)	Gasoline Consumption (million gallons)	Diesel Consumption (million gallons)
No Project (2049)	9.79	215.82	261.16
2026 RTP (2049)	9.29	204.29	247.84

Source: Kern COG 2026

While the No Project Alternative includes existing general plans, some of which include policies to focus growth in infill areas, the 2026 RTP includes additional strategies to focus growth in TPAs, which would help reduce the number of new energy facilities or expansion of existing facilities that need to be constructed. This is because the Plan would accommodate the same population by constructing higher-density development with infill and mixed-use projects. Infill and mixed-use developments are generally higher-efficiency dwellings. Lower-density development would sprawl throughout Kern County under the No Project Alternative to satisfy the same population growth. Under the No Project Alternative, the Plan land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. It is also possible that increased density in urban areas could put additional pressure on energy providers to increase capacity to these areas, resulting in additional impacts. However, as in general, energy use would be more efficient (on a per capita basis), with the Plan, impacts would be greater with the No Project Alternative.

Geology and Soils

While implementation of the 2026 Plan would result in a greater number of transportation projects than the No Project Alternative, the No Project Alternative would result in similar impacts associated with risk as a result of surface fault rupture, ground-shaking liquefaction, landslides, and other risks associated with seismic events. The anticipated population growth would remain constant over all alternatives and the Project, and the entire region is subject to the same seismic risk. Existing state and local building code

requirements addressing substantial adverse effects due to earthquakes and seismic activity would apply to the projected land use pattern and planned transportation improvements of the Plan. However, land consumed is greater under the No Project Alternative, resulting in greater impacts to soil erosion and loss of topsoil. Impacts related to unstable soil, expansive soil, and septic systems could also be greater than the 2026 RTP as a result of wider dispersion of growth. Impacts to unique geologic features would be greater under this alternative than under the 2026 RTP because the projected land use pattern of this alternative is less compact. The additional land disturbance resulting from the projected land use pattern under this alternative would result in greater impacts to paleontological resources.

Greenhouse Gas Emissions

The 2026 RTP includes strategies aimed at increasing the density of land use in Kern County, thereby increasing the efficiency of vehicle and energy use. In all analysis years, emissions would be higher without adoption of the 2026 RTP. The first significance threshold for GHG emissions is whether the project would result in greater emissions than under existing conditions (i.e., would emissions in 2049 be greater than in 2024). As shown in **Table 5.0-7**, in 2049, mobile source emissions would be 2,892,260 metric tons of CO_2 equivalents ($MTCO_2e$) under the No Project Alternative, compared to 2,771,445 $MTCO_2e$ under the 2026 RTP, which is a 4.3 percent increase compared to under the 2026 RTP.

Table 5.0-7
Annual Total On-Road Mobile Source GHG Emissions – 2024 Compared to 2049– No Project vs. Plan

Source	2024 ($MTCO_2e$/Year)	2049– Plan ($MTCO_2e$/Year)	2049– No Project Alternative ($MTCO_2e$/Year)
Mobile Sources	2,402,065	2,771,445	2,892,260

Source: Kern COG 2026

The No Project Alternative would result in greater emissions than under existing conditions. The second threshold asks whether the project would hinder progress toward the goals of applicable GHG reduction plans. In 2035, on-road mobile source emissions would be roughly 2,688,225 without the Plan, as opposed to 2,696,255 $MTCO_2e$ with the Plan, as shown in **Table 5.0-8**.

Table 5.0-8
Annual Total On-Road Mobile Source GHG Emissions – 1990 Compared to 2035 – No Project vs. Plan

Source	1990 (2005 minus 15%) ($MTCO_2e$/Year)	2035 – Plan ($MTCO_2e$/Year)	2035 – No Project Alternative ($MTCO_2e$/Year)
Mobile Sources	3,723,439	2,696,255	2,688,225

Source: 2012 Kern County Inventory, , Kern COG 2026 and Impact Sciences 2026

In comparison, mobile source emissions in 1990 were estimated to be 3,723,439 $MTCO_2e$. Therefore, the No Project Alternative would result in approximately a 27 percent reduction below 1990 emission levels and would be consistent with the statewide GHG reduction target established under AB 32. Although the No Project Alternative would generate slightly lower total mobile source GHG emissions than the 2026 RTP, it would not include the coordinated land use and transportation strategies intended to support long-term statewide greenhouse gas reduction goals and SB 375 implementation. Because information required to show a full and accurate quantified analysis of the impact of the No Project Alternative on AB 32 and SB 32 with regards to land uses in Kern County is not available, the increase in per capita GHG emissions is considered to be potentially significant.

As shown in **Section 4.8, Greenhouse Gases**, **Table 4.8-5**, even under the No Project, total on-road mobile source emissions are anticipated to be reduced by approximately 22 percent. Emissions would decrease from existing conditions compared to 1990. Population would also increase, and it is expected that per capita emissions for all sources will continue to decline under Plan and No Plan conditions.

Hazards and Hazardous Materials

Hazardous materials impacts to the public or the environment associated with construction activities and operation under the No Project Alternative would be the same as the impacts under the Plan. This is because of the numerous federal, state, and local requirements and regulations that minimize the creation of significant hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials; through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment and through handling of hazardous materials, substances, and waste within 0.25 mile of an existing or proposed school. These existing requirements and regulations would apply equally to the different projected land use patterns and planned transportation network improvements of this alternative and the proposed Plan, so impacts would be the same. The same is true for existing requirements and regulations addressing potential safety hazards and excessive noise within an airport land use plan or within two miles of a public or public use airport, so airport-related safety and

noise impacts to people residing or working in the plan area would be the same under this alternative. The more dispersed land use pattern under this alternative would be more automobile-oriented than the Plan and could complicate emergency evacuation plans that rely in part on public transit. Therefore, the less compact land use pattern of this alternative would result in greater impacts associated with impairing the implementation of adopted emergency response and emergency evacuation plans.

Hydrology and Water Resources

The No Project Alternative would result in a more dispersed development pattern, resulting in a greater amount of land covered by impervious surfaces, increasing impacts to water resources. Compact development is generally more water efficient (due to lack of large lawns, etc.). Therefore, the No Project Alternative's less compact development pattern would be less efficient and result in more water use overall. The No Project Alternative impacts on water resources would be greater than the impacts from the Plan and would remain significant as under the Plan.

With more roadway transportation projects than the Plan, the direct effects of the No Project Alternative from transportation projects on water resources would be increased when compared with the Plan. As the currently planned transportation projects included in the No Project Alternative are built and as development of other land uses occurs, the impacts resulting from increased roadway and urban runoff and drainage patterns would remain significant. Similarly, impacts to increased flood hazards and groundwater infiltration caused by the increased impervious surfaces of roadway and urban projects would remain significant.

Similar to water supply impacts, wastewater generation could be increased through less efficient land use patterns. The impacts on water quality would be greater under the No Project Alternative due to less efficient and more dispersed growth pattern. The No Project Alternative's impacts to both water quality and flood risk would be greater than those associated with the Plan. Flooding impacts would generally be site specific. Although with greater consumption of vacant land, the No Project Alternative has a greater risk of locating RTP projects and/or development in flood-prone areas. Overall, it is anticipated that the Plan would result in fewer impacts to water resources because of a compact growth pattern that would result in less impervious surfaces and less demand for water. Thus, impacts to water resources under the No Project Alternative would be greater than the Plan (and remain significant).

Land Use

In the No Project Alternative, population would still grow by 106,900 people; however, no regional transportation investments would be made above the existing programmed projects, and no land use

strategies would be in place. The population distribution would follow past trends, uninfluenced by additional transportation investments.

The No Project Alternative includes fewer transportation projects than the 2026 RTP and does not include any land use strategies. It would have a lesser potential for conflicting with general plans, as the only growth strategies that would occur would be local land use controls.

The No Project Alternative would likely have similar significant impacts on division of communities, because redevelopment in existing communities would still occur and more land in general would be impacted. In general, as fewer transportation projects are included in the No Project alternative, there would be less opportunity for disruption of a community, although impacts would still remain significant.

Mineral Resources

The No Project Alternative would result in fewer lane miles compared to the 2026 RTP as fewer transportation projects would be built, which would require less aggregate. However, the No Project Alternative would consume less land than the 2026 RTP, resulting in a greater loss of availability of known mineral resources that would be of value to the region and the residents of the state, as well as locally important mineral resources. The No Project Alternative would increase the amount of land converted to urban uses, potentially covering more mineral resource extraction opportunities, resulting in a greater impact on mineral resources than the Plan Alternative.

Noise

Implementation of the 2026 RTP would result in the same total regional population and households as the No Project Alternative. Population for both No Project and the Plan is projected to be approximately 1,017,200 people in 2049. However, no regional transportation investments would be made beyond the existing programmed projects under the No Project Alternative. The population distribution is assumed to follow past trends, uninfluenced by additional transportation investments and growth policies contained within the proposed 2026 RTP.

Both the No Project and the 2026 RTP would expose people to an increase in the noise and vibration levels. Under the Plan, development would be more concentrated, potentially exposing more people to noise and vibration in urban areas (including both construction and operational noise). However, the Plan includes improvements in urban areas that would facilitate traffic movement, increase use of transit and alternate modes, and reduce noise. On balance, the No Project Alternative would result in more roadways with substantial increases in noise (see **Figure 4.13-3** as compared to **Figure 4.13-4**).

The greater amount of transportation projects in the RTP would increase the amount of construction activity, which would increase short-term noise and vibration levels. However, the No Project Alternative would increase noise-related traffic congestion on routes that are currently low volume, likely resulting in a greater impact than the Plan alternative.

Population, Housing and Employment

Given the location of the region, its mild climate, and existing population trends, growth in the region is inevitable. Under the No Project Alternative, the population of the Kern COG region would still grow by approximately 106,900 people and add an additional 61,100 households by 2049; however, no regional transportation investments would be made above the existing programmed projects. The population distribution would follow existing general plans, uninfluenced by the Plan's additional emphasis on TPAs. The No Project Alternative contains fewer transportation investments than the Plan. Consequently, there would be fewer places where businesses and homes would be displaced by transportation investments and fewer places where communities would be disrupted. The No Project would result in a greater number of displaced businesses and residences from transportation investments than under the Plan. Urban development could also result in additional displacement, with potentially more businesses and residences impacted in urban areas under the Plan than the No Project, but it is not possible to determine the location of specific urban development displacement. The No Project impacts from transportation investments would be greater than the Plan impacts for **Impacts POP-1** and **POP-2,** as greater residential uses would be affected.

The No Project Alternative is expected to accommodate the same increases in total population as the Plan. However, the 2026 RTP includes land use measures that would target growth in developed urban areas. The 2026 RTP also includes additional transportation improvements that could facilitate access to currently vacant lands that would be less accessible with the No Project Alternative. This improved accessibility under the 2026 RTP could encourage growth in previously undeveloped areas, except that land use strategies would aggressively seek to reduce consumption of vacant and agricultural lands. Although the 2026 RTP and the No Project Alternative would result in different amounts of consumed land, they would result in the same total population, employment, and households.

Public Services

Police and Fire

Since the No Project Alternative includes fewer transportation projects than the Plan, it would have a lesser impact in terms of additional transportation infrastructure, which would most likely increase the number of users and incidents requiring fire officials' attention.

The No Project Alternative is expected to accommodate the same increase in total population, households, and jobs as the Plan. However, the Plan includes strategies to focus growth in TPAs, which would help reduce response times, as most requests would be from concentrated urban areas. The No Project Alternative is more likely to permit sprawl development, which would strain fire resources and therefore increase the potential for new construction due to the physical distances between developments. Under the No Project Alternative, the TPA land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans.

The No Project impacts could be greater than the Plan impacts for **Impacts FIRE-1** and **POLICE-1** because of the dispersed development pattern which could result in the need for additional facilities to be constructed to serve the more dispersed development pattern as it may take emergency personnel longer to get to calls located in further out neighborhoods; however, more dense populations could result in increased fires and crime resulting in the need for construction of new facilities in urban areas. As for the proposed Project, impacts as a result of construction of new fire and police facilities are anticipated to be less than significant.

Education

The No Project Alternative is expected to accommodate the same increase in total population, households, and jobs as the Plan (and therefore the same increase in school-age children). However, the Plan includes strategies to focus growth in TPAs, which would place an increased burden on existing schools in urban areas as development increases, although development would be focused in areas with existing school infrastructure. The No Project Alternative would permit sprawl development, which could require additional school facilities to be built to serve new residential developments. Under the No Project Alternative, the TPA land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans.

The Plan also includes transportation improvements that facilitate access to undeveloped lands, making those lands more attractive for development than under the No Project Alternative. However, the Plan includes policies to dissuade such encroachment on vacant lands. It is not clear which distribution (dispersed or compact) would result in greater need for new school facilities, as it would depend on location of growth and school capacity. Therefore, impacts are anticipated to be similar and less than significant.

Library

The No Project Alternative is expected to accommodate the same increase in total population, households, and jobs as the Plan. However, the Plan includes strategies to focus growth in TPAs, which would help reduce the construction of additional libraries with low patronage as well as consumption of rural or

suburban land, as most library facilities would be concentrated in urban areas. The No Project Alternative would permit sprawl development that could require additional library resources, either structures or bookmobiles. Under the No Project Alternative, the TPA land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans.

The Plan also includes transportation improvements that facilitate access to undeveloped lands, making those lands more attractive for development than under the No Project Alternative. However, the Plan includes policies to dissuade such encroachment on open space and vacant lands and is anticipated to result in far fewer impacts. The No Project impacts would be greater than the Plan impacts for **Impact LIB-1** because of the increased consumption of open space and vacant land, the lack of a comprehensive regional plan, and the additional library resources needed, which would result from the above actions.

Recreation

The No Project Alternative is expected to accommodate the same increase in total population, households, and jobs as the Plan, but with development occurring in a more dispersed pattern. Therefore, demand for recreational opportunities would be dispersed. The No Project Alternative would permit sprawl development that could require construction of additional park and recreation facilities in close proximity to residential development. Under the No Project Alternative, the TPA land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans.

The Plan also includes transportation improvements that could facilitate access to undeveloped lands, making those lands more attractive for development than under the No Project Alternative. It is anticipated that the land use planning strategies included in the Plan will minimize consumption of vacant, open space/recreation and agricultural lands compared to the No Project Alternative. Impacts of the No Project Alternative would be greater than the Plan for **Impact REC-2** because of the increased consumption of open space and vacant land, and the more dispersed growth pattern resulting in more demand for construction of recreational facilities in outlying areas (although impacts are still anticipated to be less than significant). Although the Plan would increase demand for recreation facilities in urban areas, this demand may be harder to meet as land prices and development may preclude sufficient development of recreation facilities. It is anticipated that the No Project Alternative would have less impact on existing urban parks and recreational facilities (**Impact REC-1**) because of fewer transportation projects and a more dispersed growth pattern, but nonetheless, existing park facilities could become deteriorated due to overuse and therefore impacts would be significant as for the Plan.

Transportation

Under this alternative, there would be fewer transportation infrastructure investments, while growth would continue at forecasted rates in a more dispersed pattern. The No Project alternative would result in increased VMT and hours in congestion as compared to the Plan and a drop in transit and active mode shares. As shown in **Table 5.0-2**, Congested hours overall would increase from 493,669 in 2024 to 570,838 in 2049 under the No Project Alternative. No Project Alternative congested hours in core urban areas would increase by 15.6 percent compared to the Plan. Possible additional significant and/or worsened impacts could result from this alternative compared to those impacts identified for the Project. These result in decreases in the performance of Kern's pedestrian and bicycle facilities, in view of increased vehicular congestion and the lack of investment in pedestrian and bicycle facilities.

Utilities

Wastewater

The No Project Alternative is expected to accommodate the same increase in total population, households, and jobs as the Plan; however, the Plan includes strategies to focus growth in TPAs, which would help reduce construction of new wastewater treatment facilities because of more efficient use of water (and thus less generation of wastewater). The more dispersed development pattern of the No Project Alternative would result in greater water consumption – likely as a result of increased landscaping associated with single-family development as compared to multi-family homes. The additional water used on landscaping generally does not become wastewater, nonetheless the No Project's distributed growth pattern would tend to use more water, which could generate more wastewater.

Expansion of existing facilities or construction of new facilities would still be necessary under the Plan to accommodate increases in population in urban areas. The more concentrated growth pattern could result in the existing wastewater collection system in urban areas being inadequate (sewer lines could be too small). Under the No Project Alternative, land use strategies to focus growth in urban areas may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. Construction of new wastewater treatment facilities would still occur under the No Project Alternative. Therefore, impacts from construction of new wastewater facilities would be similar (less than significant) with the No Project alternative as with the Plan, just a different location of where construction would occur. With a more dispersed growth pattern, existing sewer lines would not be as impacted, although new sewer lines would be expected to be needed to serve the more dispersed growth pattern. Similarly to the Plan, the No Project Alternative would impact wastewater facilities in Kern County and would not contribute substantially to cumulative impacts outside the region.

Solid Waste

Since the No Project Alternative includes fewer transportation and development projects than the Plan, it would have a lesser impact on solid waste generated from construction of transportation projects. The more compact growth pattern of the Plan could generate less solid waste than the more dispersed pattern of the No Project Alternative (multi-family development is more resource efficient and generates less waste than single-family development). However, as the growth strategies included in the 2026 RTP would not occur with the No Project Alternative, longer distances could occur between development and landfill facilities and/or garbage collection would require that collection trucks travel greater distances to collect waste from the more distributed land use pattern.

The No Project Alternative is expected to accommodate the same increase in total population, households, and jobs as the Plan. However, the Plan includes strategies to focus growth in TPAs, which would help reduce the impact on solid waste facilities for the reasons described above. Under the No Project Alternative, these land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. Therefore, impacts would be greater under the No Project Alternative (and still significant). Since the No Project Alternative would generate greater solid waste (due to the less efficient growth pattern), it would contribute more to overlapping impacts with other areas of the State where they use the same facilities.

Wildfire

Under the No Project Alternative, it is anticipated that more households could be exposed to wildfire threat than under the proposed 2026 RTP, as more development would occur in areas outside the urban core. It is anticipated that the land use planning strategies included in the proposed RTP will minimize consumption of vacant, open space/recreation and agricultural lands compared to the No Project Alternative. The No Project impacts would be greater than the Plan impacts because of the increased consumption of open space and vacant land, the lack of a comprehensive regional plan, the increased number of households that could be exposed to wildland fire risk, the strain on fire resources, and therefore increase the potential for new construction, which would result from the above actions.

5.2.7 Analysis of Alternative 2 – Old Plan

Aesthetics

The Old Plan alternative includes a slightly modified transportation network without the same level of transportation improvements as the Plan. Therefore, under the Old Plan Alternative, the construction of

roadways would result in opportunities for impacts to eligible State Scenic Highways and vistas similar to the Plan. Impacts would be significant and similar to the Plan.

The 2026 RTP would include slightly more infill development than the Old Plan. As a result, the opportunities for contrasts with visual character in natural areas would be similar or slightly less when compared to the Plan as development. As glare impacts typically occur in urban areas, these impacts could be reduced under the Old Plan Alternative, as growth could be more distributed in non-urban areas and less dense. Nighttime lighting impacts would be greater, as more vacant land would be consumed under the Old Plan Alternative since lighting impacts are most pronounced in rural areas. Therefore, the Old Plan Alternative would result in fewer impacts to scenic vistas and glare, but would result in greater lighting impacts than the Plan, and impacts would be significant (as they would be for the Plan).

Agricultural Resources

Under the Old Plan Alternative, more roadways would be constructed, resulting in more open space and farmland consumed by transportation projects. Similar to the No Project Alternative, the Old Plan Alternative would not result in as compact a development pattern as the Plan and would therefore consume slightly greater open space and farmland. Impacts to forest lands would also be greater as the more dispersed land use pattern of the Old Plan Alternative could result in development in areas that currently contain forest land. Therefore, the Old Plan Alternative would result in greater impacts than the Plan.

Air Quality

Criteria Air Pollutants

Emissions of criteria pollutants from mobile sources would be affected by implementation of the Old Plan Alternative. In order to analyze the net impact of implementation, 2024 emissions were compared to horizon year (2049) emissions. Results of modeling are presented in **Table 5.0-9, Criteria Pollutant Emissions from Mobile Sources**. As shown, there are reductions of ROG, NOx, and CO under the Old Plan Alternative. These would be considered a beneficial impact. As in the table, the Old Plan Alternative would generate similar emissions to the Plan.

Table 5.0-9
Criteria Pollutant Emissions from On-Road Mobile Sources – Old Plan (2049) vs. Plan (2049)

Scenario	Tons/Day					
	ROG	NOx	CO	PM10	PM2.5	SOx
2024	4.1497	13.18	34.61	1.0032	0.4237	0.1385
2026 RTP 2049	2.0669	11.88	19.8	1.2411	0.4955	0.1245
2026 RTP Net	-2.0828	-1.3	-14.81	0.2379	0.0718	-0.014
Old Plan Alternative 2049	2.12	12.21	20.22	1.28	0.51	0.13
Old Plan Alternative Net	-2.03	-0.97	-14.39	0.27	0.08	-0.01

Source: Kern COG 2026

A conformity analysis was prepared for the 2026 RTP that analyzes emissions of ozone precursors (ROG and NOx), CO, PM10, and PM2.5 compared to the approved emissions budgets for mobile sources in Kern County. The analysis found that emissions of all pollutants would be in conformity with the state implementation plans (SIPs). The Old Plan Alternative would generate slightly greater PM10 emissions compared to the 2026 RTP.

Implementation of the Old Plan Alternative would result in construction of roadways and other transportation projects. These construction activities would result in short-term emissions of air pollutants, including ROG, NOx, PM10, PM2.5, and fugitive dust. Emissions are directly correlated to the size of the construction project and the number of simultaneous construction projects, as further described in **Section 4.3, Air Quality**.

Expose Sensitive Receptors to Substantial Pollutant Concentrations

PM2.5 emissions are used as a proxy for DPM emissions in this EIR analysis, as further described in **Section 4.3, Air Quality**. In order to approximate DPM emissions more closely, PM2.5 emissions specifically from heavy-duty diesel vehicle exhaust were estimated. The emissions generated under existing conditions, as compared to the Old Plan Alternative, are shown in **Table 5.0-11, PM2.5 Emissions from Heavy Duty Diesel Vehicles.**

Table 5.0-10
PM2.5 Emissions from Heavy Duty Diesel Vehicles (tons/day) – Old Plan (2049) vs. Plan (2049)

2024	2049 RTP Plan	2049 Old Plan Alternative
0.278	0.359	0.369

Source: Kern COG 2026

As shown, the Old Plan Alternative would generate slightly increased PM2.5 emissions as compared to 2026 RTP, and overall emissions would increase for both the Plan and the Old Plan. CARB has several programs and regulations in place to reduce DPM emissions state-wide, as described further in **Section 4.3, Air Quality**. These programs and regulations would reduce DPM emissions over the period of the 2026 RTP. However, overall emissions of PM2.5 from heavy-duty trucks are expected to increase by 2049.

However, on a case-by-case basis, RTP improvements may also bring sources of DPM closer to sensitive receptors through construction of new facilities or widened roadways, which could increase exposure of sensitive receptors. However, the growth pattern under the Old Plan Alternative would be more dispersed than under the Plan, potentially exposing fewer people to vehicle emissions as compared to the Plan. As a result, the Old Plan Alternative will have a significant impact on sensitive receptors, but lower than the 2026 RTP.

Another substantial source of TACs is stationary sources, such as diesel generators, industrial processes, and dry cleaners. As with the 2026 RTP, the Old Plan Alternative does not have any direct effect on these types of sources, nor is there any available data on possible new stationary sources that would be in operation in 2049. Consequently, it is not possible to determine what contribution these sources would have to sensitive receptors, and how the Old Plan Alternative would influence any such contribution.

Given the lack of data regarding industrial and other stationary sources of TACs, it is unknown whether these sources would result in increased emissions of TACs in 2049 compared to existing conditions, and therefore it is unknown what their impact on health risks in Kern County would be. In total, impacts related to air toxics could be greater than the Plan (because of increased emissions Countywide and a more distributed growth plan along high-volume roadways). Impacts related to air toxics would be significant (as they would be for the Plan).

Biological Resources

Under the Old Plan Alternative, more areas would be impacted by excavation and construction activities as compared to the Plan. Therefore, the Old Plan Alternative would result in transportation projects and

development taking place over a greater area of land. This would result in greater vacant land consumption, including sensitive species habitat. riparian habitat, federally protected wetlands, migratory wildlife corridors, and native wildlife nursery sites, which would, in turn, increase impacts to biological resources and open space, such as habitat loss and fragmentation. Therefore, the Old Plan Alternative impacts on biological resources and open space would be greater than the impacts from the Plan and would be significant.

Cultural Resources

Under the Old Plan Alternative, there would be more roadway transportation projects and less transit, and development would extend over a slightly greater area of land. This would increase the chance of uncovering a greater number of previously undisturbed resources. Therefore, the Old Plan Alternative impacts on cultural resources, including Tribal Cultural Resources, would be greater than the impacts from the Plan, and impacts would be significant (as they would be for the Plan).

Energy

The Old Plan Alternative includes less transit and active transportation (bicycle and pedestrian) as compared to the Plan. Consequently, the use of petroleum fuel for personal vehicles would be greater than under the 2026 RTP, as indicated in **Table 5.0-11**.

Table 5.0-11
Annual Gasoline and Diesel Consumption – Old Plan (2049) vs. Plan (2049)

Scenario	Vehicle Miles Traveled (billions of miles)	Gasoline Consumption (million gallons)	Diesel Consumption (million gallons)
Old Plan Alternative (2049)	9.55	209.84	254.84
2026 RTP (2049)	9.29	204.29	247.84

Sources: Kern COG 2026

Similar to the Plan, the Old Plan Alternative includes strategies to focus growth, such as infill and mixed-use developments in TPAs, which would help reduce the number of new energy facilities or expansion of existing facilities that need to be constructed. Infill and mixed-use developments are generally higher efficiency dwellings resulting in a reduction in total energy consumption. Under the Old Plan Alternative, land use strategies to concentrate growth may not occur to the same extent as with the Plan, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. Energy use would be more efficient per capita, with the Plan, impacts would be greater with the Old Plan

Alternative, and they would be significant (as under the Plan). Similar to the Plan, the Old Plan Alternative would add to cumulative demand for energy in California and in the world in general, as both would result in the same total persons, jobs, and households.

Geology and Soils

While implementation of the 2026 RTP would result in a greater number of transportation projects than the Old Plan Alternative, the Old Plan Alternative would result in similar impacts associated with risk as a result of surface fault rupture, ground-shaking liquefaction, landslides, and other risks associated with seismic events. The anticipated population growth would remain constant over all alternatives and the Project, and the entire region is subject to the same seismic risk. Existing state and local building code requirements addressing substantial adverse effects due to earthquakes and seismic activity would apply to the projected land use pattern and planned transportation improvements of the Plan. However, land Consumed is greater under the Old Plan Alternative, resulting in greater impacts soil erosion and loss of topsoil. Impacts related to unstable soil, expansive soil, and septic systems would also be greater than the 2026 RTP. Impacts to unique geologic features would be greater under this alternative than under the 2026 RTP because the projected land use pattern of this alternative is less compact. The additional land disturbance resulting from the projected land use pattern under this alternative would result in greater impacts to paleontological resources.

Greenhouse Gas Emissions

The Old Plan would result in emissions very similar to the Plan, as the differences between the two alternatives are relatively minor. As shown in **Table 5.0-12**, in 2049 emissions would be 2,859,228 $MTCO_2e$ under the Old Plan Alternative, compared to 2,771,445 $MTCO_2e$ under the 2026 RTP, which is a 3 percent increase compared to the 2026 RTP.

Table 5.0-12
Annual Total On-Road Mobile Source GHG Emissions – 2024 Compared to 2049–
Old Plan (2049) vs. Plan (2049)

Source	2024 ($MTCO_2e$/Year)	2049– Plan ($MTCO_2e$/Year)	2049- Old Plan Alternative ($MTCO_2e$/Year)
Mobile Sources	2,402,065	2,771,445	2,859,228

Source: Kern COG 2026

In 2049, the Old Plan Alternative would increase emissions compared to existing conditions and would be greater than under 1990 conditions. The project would not address the goals of applicable GHG reduction plans, such as AB 32. However, in 2035, on-road mobile source emissions would be roughly 2,658,478 with Alternative 2, which would be less than the 2,696,255 MTCO2e with the Plan, as shown in **Table 5.0-13**.

Table 5.0-13
Annual Total Mobile Source GHG Emissions – 1990 Compared to 2026 Plan and Old Plan (2022)

Source	1990 (2005 minus 15%) ($MTCO_2e$/Year)	2035 Plan ($MTCO_2e$/Year)	2035 –Old Plan ($MTCO_2e$/Year)
Mobile Sources	3,723,439	2,696,255	2,658,478

2012 Kern County Inventory, Kern COG 2022

As shown in **Table 5.0-12**, the Old Plan Alternative would result in approximately 2,658,478 $MTCO_2e$ from on-road mobile sources, which is slightly lower than the 2035 Plan emissions estimate of 2,696,255 MTCO2e per year. The forecasted population for 2049 is approximately 1,017,200. This results in approximately 2.61 $MTCO_2e$ per capita by 2049 for on-road mobile sources alone under the Old Plan. Although the Old Plan Alternative would result in slightly lower on-road mobile source emissions compared to the Plan, impacts associated with transportation-related GHG emissions would remain potentially significant.

Hazards and Hazardous Materials

Hazardous materials impacts to the public or the environment associated with construction activities and operation under the Old Plan Alternative would be the same as the impacts under the Plan. This is because of the numerous federal, state, and local requirements and regulations that minimize the creation of significant hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials; through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment and through handling of hazardous materials, substances, and waste within 0.25 mile of an existing or proposed school. These existing requirements and regulations would apply equally to the different projected land use patterns and planned transportation network improvements of this alternative and the proposed Plan, so impacts would be the same. The same is true for existing requirements and regulations addressing potential safety hazards and excessive noise within an airport land use plan or within two miles of a public or public use airport, so airport-related safety and noise impacts to people residing or working in the plan area would be the same under this alternative. The more dispersed land use pattern under this alternative would be more automobile-oriented than the Plan and could complicate emergency evacuation plans that rely in part on public transit. Therefore, the less

compact land use pattern of this alternative would result in greater impacts associated with impairing the implementation of adopted emergency response and emergency evacuation plans.

Hydrology and Water Resources

The Old Plan Alternative would result in a slightly more dispersed development pattern, resulting in a greater amount of land covered by impervious surfaces, increasing impacts to water resources. Compact development is generally more water efficient (due to lack of large lawns, etc.). Therefore, the Old Plan Alternative's less compact development pattern would be less efficient and result in more water use overall. The Old Plan Alternative impacts on water resources would be greater than the impacts from the Plan and would remain significant as under the Plan.

With more roadway transportation projects than the Plan, the direct effects of the Old Plan Alternative from transportation projects on water resources would be increased when compared with the Plan. As the currently planned transportation projects included in the Old Plan Alternative are built, the impacts resulting from increased roadway runoff and drainage patterns would remain significant. Similarly, impacts to increased flood hazards and groundwater infiltration caused by the increased impervious surfaces of roadway projects would remain significant.

Similar to water supply impacts, wastewater generation could be increased through less efficient land use patterns. The impacts to water quality would be greater under the Old Plan Alternative due to less efficient and more dispersed growth pattern. The Old Plan Alternative's impacts to both water quality and flood risk would be greater than those associated with the Plan. Flooding impacts would generally be site specific. Although, with greater consumption of vacant land, the Old Plan Alternative has a greater risk of locating RTP projects and/or development in flood-prone areas. Overall, it is anticipated that the Plan would result in fewer impacts to water resources because of a compact growth pattern that would result in less impervious surfaces and less demand for water. Thus, impacts to water resources under the Old Plan Alternative would be greater than the Plan (and remain significant).

Land Use

The Old Plan Alternative would result in greater consumption of open space land, and impacts under the Old Plan Alternative would be significant (as under the Project). The Old Plan Alternative contains more roadway capacity projects as compared to the Plan. Consequently, there would be more places where businesses and homes would be displaced by transportation projects and more places where communities could be disrupted. Due to the slightly more dispersed pattern of the Old Plan Alternative, the Old Plan Alternative would be expected to have fewer impacts on existing uses than the Plan. The impacts of fewer roadway capacity projects under the Plan would result in fewer impacts as compared to the Old Plan

Alternative. Development impacts are less clear, since under the Plan, development would be more concentrated in urban areas. The Old Plan Alternative land uses would change to a slightly greater extent in undeveloped areas, and impacts would be significant (as under the Plan).

Mineral Resources

The Old Plan would consume more land than the 2026 RTP, resulting in a greater loss of availability of known mineral resources that would be of value to the region and the residents of the state, as well as locally important mineral resources. The Old Plan Alternative would increase the amount of land converted to urban uses, potentially covering more mineral resource extraction opportunities, resulting in a greater impact to mineral resources than the Plan Alternative.

Noise

The Old Plan would result in more roadway capacity and transportation improvements. The emphasis on roadway capacity projects could result in more people exposed to roadway noise. Similar to the No Project Alternative, the Old Plan would not make some of the improvements in urban areas, potentially leading to greater congestion on the outskirts of Bakersfield and along 14 north of Lancaster, resulting in increased noise in these areas as compared to the Plan. In general, impacts related to noise and groundborne vibration under the Old Plan Alternative would be similar to those under the Plan and would be significant.

Population, Housing and Employment

The Old Plan Alternative has the same population, household, and employment growth as the Plan. Given that the population, household, and employment growth would be the same at the regional level, the Plan's significant impacts would be similar to those associated with the Old Plan Alternative.

The proposed 2026 Plan would include slightly more infill development. In urbanized areas, vacant land is scarce, resulting in a greater potential for projects to displace existing uses. Therefore, impacts under the Old Plan would be less in urbanized areas. Overall impacts would be similar to the Plan and would remain significant.

Public Services

Police and Fire

The Old Plan Alternative would result in similar transportation-related public service impacts as compared to the Plan. The Old Plan and the Plan alternatives include the same number of population, housing, and jobs that would require police, fire, and emergency facilities. A slightly more dispersed pattern of

development, as would occur under the Old Plan, could result in people located further from existing police and fire facilities, necessitating the construction of new facilities to maintain appropriate response times. The determination of the need for and/or location of new construction for such facilities under either the Plan or Old Plan Alternative would be speculative at this time. In addition, construction of such facilities generally has minor impacts. The Old Project impacts would be similar to those under the Plan, and less than significant for construction of new facilities and significant for exposure to wildland fire risk.

Education

The Old Plan Alternative would result in similar demand for school facilities as under the Plan. The Old Plan may not result in the same level of urbanization as the Plan; however, the same number of students would be generated under both scenarios. Any impacts from construction of new schools would occur at the local level. Therefore, impacts associated with the Old Plan and the Plan would be similar and would be less than significant.

Recreation

The Old Plan Alternative would accommodate the same increase in total population, households, and jobs as the Plan, but with development occurring in a slightly more dispersed pattern. Therefore, demand for recreational opportunities would also be more dispersed throughout the region. Under the Old Plan Alternative, the land use strategies focusing growth in urban areas may not occur to the same extent as under the Plan, although individual jurisdictions may still seek to reduce the urban footprint through their general plans.

Both the Plan and the Old Plan Alternative would increase demand for recreation facilities in urban areas; this demand may be harder to meet as land prices and development may preclude sufficient development of recreation facilities. Similar to the impact of Plan implementation, implementation of the Old Plan Alternative would be less than significant.

Transportation

The Old Plan alternative assumes the 2022 RTP list of financially constrained projects, which reflects improvements to transit, bike, and walk infrastructure. The growth pattern under the Old Plan would be similar to that under the proposed Plan, but slightly more dispersed. Transportation investments in the Old Plan are more focused on roadways. As shown in **Table 5.0-2**, in 2049 the Old Plan alternative would have slightly greater VMT in 2049 as compared to the Plan, as well as result in a drop in transit and active mode shares. Under the Plan, Total Weekday VMT would be 25,842, while the Old Plan Alternative would result in 26,153 VMT. Congested hours overall would be higher than the Plan. Therefore, impacts related

to VMT would remain significant, as would impacts related to the CMP and congestion under the Old Plan Alternative.

Utilities

Wastewater

It is expected that expansion of existing facilities or construction of new facilities would be necessary under the Plan to accommodate increases in population in urban areas and concentrated growth patterns. Construction of new wastewater treatment facilities would be necessary under the Old Plan Alternative to service the more dispersed growth pattern. Impacts would be similar with the Old Plan Alternative compared to the Plan. With a more dispersed growth pattern, existing sewer lines in existing urban areas would not be as impacted, although new sewer lines could be necessary to serve the more dispersed growth pattern. The cost of sewer line connections for development projects on the periphery of the urban area can be significantly less than expanding the capacity of existing sewer lines in urban core areas. The resulting lower cost of sewer capacity on the periphery means that providing additional capacity can be more viable in these areas than in existing urban areas. Therefore, compared to the Plan, impacts would also be less than significant.

Solid Waste

The Old Plan Alternative is expected to accommodate the same increase in total population, households, and jobs as the Plan. However, the Old Plan Alternative would result in a slightly more dispersed development pattern that could have more impact on solid waste generation. Therefore, impacts could be slightly greater under the Old Plan Alternative, and impacts would be significant.

Wildfire

Under the Old Plan Alternative, it is anticipated that more households could be exposed to wildfire threat than under the proposed 2026 RTP as more development would occur in areas outside the urban core, and therefore, as for the Plan, this impact would be significant.

It is anticipated that the land use planning strategies included in the proposed RTP will minimize consumption of vacant, open space/recreation and agricultural lands compared to the Old Plan Alternative. Due to the increased consumption of open space and vacant land and the lack of a comprehensive regional plan, a greater number of households could be exposed to wildland fire risk. This would result in a strain on fire resources and a greater wildfire risk than the Plan. Impacts would be significant.

5.2.10 Analysis of Alternative 3 – Countywide Infill Alternative

Aesthetics

Under the Countywide Infill Alternative, all new development would be focused in existing urban areas, particularly Metropolitan Bakersfield. Under this Alternative, new growth would be predominantly infill development. Due to the increased densities, opportunities for visual contrast in urban areas would be greater than the Plan. However, visual impacts in rural areas would likely be decreased as less development would occur in these areas. This Alternative would potentially result in greater impacts related to light and glare, visual character of neighborhoods as more intense development occurs within urban centers. Taller buildings could be incongruous with existing surroundings and could overwhelm historic buildings and/or existing neighborhoods. However, as more development is focused in urban areas, fewer nighttime lighting impacts would occur in undeveloped areas. Impacts related to scenic highways and vistas would vary depending on location and view. Views of and within urban areas would change, while views of and within rural areas would change less. As with the Plan, impacts to aesthetics under the Countywide Infill Alternative would be significant

Agricultural Resources

Under the Countywide Infill Alternative, new development would be targeted in urban areas or TPAs. By limiting the amount of growth that would occur outside the urban areas, substantially fewer acres of farmland or forest land would be consumed. Therefore, the Countywide Infill Alternative would result in less than significant impacts related to agricultural resources.

Air Quality

Criteria Air Pollutants

Under the Countywide Infill Alternative, emissions of criteria pollutants from development and mobile sources would be less than the Plan and all other alternatives. Because of the denser, more efficient land use pattern, emissions from vehicles would be less compared to the Plan as a result of decreased VMT. Construction emissions could be less than the Plan as a result of a more compact growth pattern.

Expose Sensitive Receptors to Substantial Pollutant Concentrations

The Countywide Infill Alternative could generate less heavy-duty truck PM2.5 exhaust emissions as compared to the Plan as a result of reduced VMT. TAC emissions would be similar to and possibly less than the Plan due to an even more compact growth pattern and reduced VMT. However, on a case-by-case basis, RTP improvements could also bring sources of DPM closer to sensitive receptors through

construction of new facilities or widened roadways, which could increase exposure of sensitive receptors. In addition, the more compact growth pattern could lead to more development within 500 feet of transportation facilities. Therefore, increased health risk could result from implementation of the Countywide Infill Alternative, as increased density could result in more sensitive receptors located relatively close to sources of DPM. Increased congestion in urban core areas could also increase truck emissions, increasing health-related impacts. However, as described in **Section 4.3, Air Quality**, emissions from highways are anticipated to decline substantially due to emission controls.

Another substantial source of TACs is stationary sources, such as diesel generators, industrial processes, and dry cleaners. As with the 2026 RTP, the Countywide Infill Alternative does not have any direct effect on these types of sources, nor is there any available data on possible new stationary sources that would be in operation in 2049. Consequently, it is not possible to determine what contribution these stationary sources would have to sensitive receptors, or how the Countywide Infill Alternative would influence any such contribution. However, it is anticipated that with a more compact growth pattern, sensitive receptors could be closer to stationary sources of TAC emissions. Therefore, this impact is considered potentially significant as under the Plan.

Biological Resources

The Countywide Infill Development Alternative would result in the majority of new development occurring as infill. Therefore, the Countywide Infill Alternative would result in transportation projects and development taking place over a smaller amount of land, as the majority of new housing would be in urban areas and TPAs. This would result in fewer acres of open space land being consumed, including sensitive species habitat, riparian habitat, federally protected wetlands, migratory wildlife corridors, and native wildlife nursery sites. Moreover, the Countywide Infill Alternative would not conflict with any local policies or ordinances protecting biological resources or any adopted habitat conservation plan. Reduced consumption of open space lands would result in reduced impacts to biological resources and open space, including habitat loss and fragmentation. Therefore, the Countywide Infill Alternative impacts to biological resources and open space would be less than the impacts from the Plan, but as sensitive habitat would still be consumed, impacts would be significant.

Cultural Resources

Under the Countywide Infill Alternative, fewer undeveloped areas would be impacted by excavation and construction activities related to development and transportation projects as compared to the Plan. The Countywide Infill Alternative would result in the majority of new growth in urban areas. Under the Countywide Infill Alternative, there would be fewer opportunities to uncover buried (i.e., archaeological

or tribal cultural) resources and impacts would be less than the Plan. However, the increased density that would be required to accommodate new development within existing urban areas would result in increased impacts to historic buildings compared to the Plan. Impacts would remain potentially significant because of the potential to encounter buried resources and impact historic buildings.

Energy

The Countywide Infill Alternative includes more a more compact development pattern than under the Plan and greater use of alternative transportation. Consequently, the use of petroleum fuel for personal vehicles would be less than under the Plan, as indicated in **Table 5.0-14**.

Table 5.0-14
Annual Gasoline Consumption

Scenario	Vehicle Miles Travelled (billions of miles)	Gasoline Consumption (million gallons)
Infill Alternative (2049)	9.29	204.29
2026 RTP (2049)	9.43	207.36

Source: Kern COG 2026

The more compact growth pattern would use less energy. There would be less need to expand or construct new energy facilities. The total energy consumption under the Countywide Infill Alternative would be less than under the 2026 RTP. However, based on current emission factors, impacts on energy would remain significant. Energy use would be more efficient per capita with the Countywide Infill Alternative; however, impacts would remain significant.

Geology and Soils

The Countywide Infill Alternative would result in a more compact growth pattern, and would result in less impacts associated with risk as a result of surface fault rupture, ground-shaking liquefaction, landslides, and other risks associated with seismic events. The anticipated population growth would remain constant over all alternatives and the Project, and the entire region is subject to the same seismic risk. Existing state and local building code requirements addressing substantial adverse effects due to earthquakes and seismic activity would apply to the projected land use pattern and planned transportation improvements of the Plan. However, less land is consumed under the Countywide Infill Alternative, resulting in less impacts soil erosion and loss of topsoil. Impacts related to unstable soil, expansive soil, and septic systems would also be smaller than the 2026 RTP. Impacts to unique geologic features would be

smaller under this alternative than under the 2026 RTP because the projected land use pattern of this alternative is more compact. The additional land disturbance resulting from the projected land use pattern under this alternative would result in fewer impacts to paleontological resources.

Greenhouse Gas Emissions

Increased density is generally accepted as a method for reducing GHG emissions through land use planning. The Countywide Infill Alternative would result in a denser land use pattern than the Plan. The first significance threshold for GHG emissions is whether emissions would result in greater than under existing conditions (i.e., would emissions in 2049 be greater than in 2024). As shown in **Table 5.0-15**, in 2049 emissions would be 2,761,225 $MTCO_2e$ from on-road mobile sources under the Countywide Infill Alternative, compared to 2,771,445 $MTCO_2e$ under the 2026 RTP, which is a 0.4 percent decrease compared to the 2026 RTP.

Table 5.0-15
Annual Total Mobile Source GHG Emissions – 2024 Compared to 2049–
Infill Alternative (2049) vs. Plan (2049)

Source	2024 ($MTCO_2e$/Year)	2049– Plan ($MTCO_2e$/Year)	2049- Infill Alternative ($MTCO_2e$/Year)
Mobile Sources	2,402,065	2,771,445	2,761,225

Source: Kern COG 2026

The Countywide Infill Alternative would result in less emissions than existing conditions. In 2035, on-road mobile source emissions would be roughly 2,696,073 with Alternative 3, as opposed to 2,696,255 MTCO2e with the Plan, as shown in **Table 5.0-16**, which would still be less than the 1990 on-road mobile source emissions.

Table 5.0-16
Annual Total Mobile Source GHG Emissions – 1990 Compared to 2035 Plan and
Old Plan (2049)

Source	1990 (2005 minus 15%) ($MTCO_2e$/Year)	2035 Plan ($MTCO_2e$/Year)	2035 –Infill Alternative ($MTCO_2e$/Year)
Mobile Sources	3,723,439	2,696,255	2,696,073

Kern COG 2026

As shown in **Table 5.0-15**, the Countywide Infill Alternative would result in approximately 2,696,073 $MTCO_2e$ from on-road mobile sources alone. The forecasted population for 2049 is approximately 1,017,200. This results in approximately 2.7 $MTCO_2e$ per capita by 2049 for mobile sources alone under the Old Plan. The increase in per capita GHG emissions is considered to be potentially significant with respect to consistency with AB 32, the Scoping Plan, and SB 32. SB 375 reduction targets would be met under the Countywide Infill Alternative, as emissions would be less than under the Plan. Overall emissions would be less than under the Plan; however, impacts compared to existing conditions and with respect to AB 32, the Scoping Plan and SB 32 consistency would remain significant.

Hazards and Hazardous Materials

Hazardous materials impacts to the public or the environment associated with construction activities and operation under the Countywide Infill Alternative would be the same as the impacts under the Plan. This is because of the numerous federal, state, and local requirements and regulations that minimize the creation of significant hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials; through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment and through handling of hazardous materials, substances, and waste within 0.25 mile of an existing or proposed school. These existing requirements and regulations would apply equally to the different projected land use patterns and planned transportation network improvements of this alternative and Plan, so impacts would be the same. The same is true for existing requirements and regulations addressing potential safety hazards and excessive noise within an airport land use plan or within two miles of a public or public use airport, so airport-related safety and noise impacts to people residing or working in the plan area would be the same under this alternative. The more compact land use pattern under this alternative would be more transit-oriented than the Plan and could complement emergency evacuation plans that rely in part on public transit to a greater degree. Therefore, this alternative would result in less impacts associated with impairing the implementation of adopted emergency response and emergency evacuation plans.

Hydrology and Water Quality

Under the Countywide Infill Alternative, new growth would be focused in urban areas and TPAs. As the Countywide Infill Alternative would accommodate all new growth in the urban areas, it would generally result in a more water-efficient pattern of development (i.e., fewer large lots with lawns). Further, as development would be focused in urban areas, fewer acres would be consumed overall. Generally, infill uses would result in more efficient use of water due to compact development. However, existing water conveyance infrastructure within urban areas may be aging and insufficiently sized to accommodate large increases in population. Therefore, although the Countywide Infill Alternative would result in less water

use and potentially fewer water quality impacts, construction of new infrastructure would potentially be necessary.

When planned transportation projects included in the Countywide Infill Alternative are built, the impacts resulting from increased roadway runoff and drainage patterns would be similar to the Plan and remain significant. Impacts to groundwater recharge and potential flooding caused by the increased impervious surfaces of roadways and development projects would be less than the Plan due to the reduction in land consumed as a result of a compact development plan confined to infill sites, and would remain significant.

While the Plan and the Countywide Infill Alternative would result in the same total population, the more compact growth pattern under the Countywide Infill Alternative would result in more efficient use of water, resulting in lower demand. As the Countywide Infill Alternative's more compact growth pattern would be more water efficient, the Countywide Infill Alternative's water supply impacts would be less than the Plan, however the impacts would remain significant.

Flooding impacts would generally be site specific, although with lower consumption of vacant land, the Countywide Infill Alternative has a lower risk of locating RTP projects and/or development in flood prone areas. Overall, it is anticipated that the Countywide Infill Alternative would result in fewer impacts to water resources because of a compact growth pattern that would result in less impervious surfaces and less demand for water; however, impacts would remain significant.

Land Use

Current land use practices and existing general plans would have to be changed to address the Countywide Infill Alternative. The Countywide Infill Alternative would result in new growth being predominantly infill development. Such dense growth may not be able to be accommodated within existing general plans. Moreover, market forces and community desires (as determined in housing option preference surveys – see discussion in **Section 4.14, Population and Housing and Employment**) may not be addressed by this alternative. Therefore, to achieve the densities of the Countywide Infill Alternative, there would be a greater chance of conflicting with community planning.

In addition, new development would be accommodated primarily as infill development that could result in increased division of existing communities. Thus, the Countywide Infill Alternative could have greater land use impacts than the Plan, and those impacts would be significant.

Mineral Resources

The Countywide Infill Alternative would result in fewer lane miles compared to the 2026 RTP, which would require less aggregate. Additionally, the Countywide Infill Alternative would consume less land than the 2026 RTP, resulting in less loss of availability of known mineral resources that would be of value to the region and the residents of the state, as well as locally important mineral resources. The Countywide Infill Alternative would reduce the amount of land converted to urban uses, resulting in fewer impacts to mineral resources than the Plan Alternative.

Noise

Under the Countywide Infill Alternative, growth would be generally focused in urban areas. This land use pattern would result in a greater number of people exposed to noise sources as a result of compact development located adjacent to heavily traveled roadways and rail lines in urban areas. As a result, noise impacts under the Countywide Infill Alternative would be greater than the Plan and these noise impacts would be significant.

Population, Housing and Employment

The Countywide Infill Alternative would have the same number of households, employment, and population as the Plan. The Countywide Infill Alternative would focus development in urban areas and existing communities, and all new residential development would occur as infill development. As a result, the Countywide Infill Alternative could result in an increase in the number of homes or businesses that are displaced as a result of redevelopment; as with the Plan, these impacts would be significant.

Public Services

Fire and Police

The Countywide Infill Alternative would include the same population, housing, and jobs as the Plan, that would require police, fire, and emergency personnel; however, more of people would be located in urban areas. In general urban areas are well served by police, fire, and emergency services and as personnel would travel shorter distances to calls response times would not be substantially affected. Further, fewer emergency service personnel would be needed to serve rural areas of the County. However, the Countywide Infill Alternative would result in a land use pattern where all new development would occur within existing urban areas. As a result, demand for public services such as police and fire would be greater than the Plan and could exceed the capacity of such service facilities resulting construction of more new or

expanded facilities. Nonetheless, the construction of these facilities is anticipated to be less than significant as for the Plan.

The Countywide Infill Alternative would result in fewer impacts related to wildfire threats as compared to the Plan, because new development would be located in urban centers, and fewer homes and communities would be located in rural areas with a greater risk of wildfire. Impacts would be less than the Plan, but development would remain in high fire zones, and fire protection would continue to be needed and balanced with needs in urban areas, which could continue to result in a significant impact.

Education

The Countywide Infill Alternative would have similar impacts on educational facilities as the Plan, since the same population would be served. However, the Countywide Infill Alternative increases population in urban areas compared to the Plan and would result in increased school populations at existing facilities. The increase in capacity could be greater than existing capacity; therefore, it could result in the need for construction of additional school facilities in the areas targeted for increased population densities, such as TPAs and urban infill areas. Nonetheless, the construction of these facilities is anticipated to be less than significant for the Plan.

Recreation

The Countywide Infill Alternative would reduce impacts to recreational facilities (outside of urban areas) as compared to the Plan due to substantially reduced consumption of open space lands. The Countywide Infill Alternative focuses on increased densities, especially in TPAs. The Countywide Infill Alternative would result in fewer acres of new land consumption, as the majority of new growth would be accommodated in infill areas, thereby decreasing the potential to disturb existing recreational facilities. However, existing urban parks would be more severely impacted under the Countywide Infill Alternative. As discussed in **Section 4.15, Public Services and Recreation**, urban areas are currently deficient in parkland; as a result, impacts could be substantially greater than the Plan, and those impacts would be significant as under the Plan.

Transportation

The Countywide Infill Alternative would result in a land use pattern that would result in the majority of new development as infill development. As a result, much of the development that would occur under this Alternative would occur within urban areas and TPAs. VMT and congestion would decrease due to more bicycle and pedestrian trips. As shown in **Table 5.0-2**, congested hours would be 281,696 under the Countywide alternative, and use of transit will increase 2.2 percent, while under the Plan, congested hours

would be 289,277, and public transit will also increase 2.2 percent. Therefore impacts on traffic would be reduced, but would likely still be significant.

Utilities

Under the Countywide Infill Alternative the majority of new development would be infill. The Countywide Infill Alternative is expected to accommodate the same increase in total population, households, and jobs as the Plan.

Wastewater

The Countywide Infill Alternative includes strategies to focus growth in urban areas and TPAs at higher densities than under the 2026 RTP. The higher density development pattern of the Countywide Infill Alternative would tend to use less water (not just as a result of less landscaping than associated with single-family homes, but more efficient use of water in general) which would generate less wastewater.

However, it is expected that expansion of existing facilities and/or construction of new facilities would be necessary under the Plan to accommodate increases in population in urban areas and the concentrated growth patterns. Under the Countywide Infill Alternative, construction of new wastewater treatment facilities would also be necessary to accommodate growth. Further, the population increases that would occur in urban areas could result in more new infrastructure being required to accommodate the population. Nonetheless, the construction of these facilities is anticipated to be less than significant as for the Plan.

Solid Waste

The Countywide Infill Alternative includes similar transportation infrastructure and higher density development as compared to the Plan. Similar to the Plan, the more compact growth pattern of the Countywide Infill Alternative would likely generate less per capita solid waste compared to the Plan because of a more-efficient growth pattern. However, similar to the Plan, solid waste impacts under the Countywide Infill Alternative would remain significant due the lack of landfills with remaining capacity.

Wildfire

The Countywide Infill Alternative would result in fewer impacts related to wildfires than the Plan. This alternative would result in fewer housing units in wildfire zones compared to the Plan. Therefore, fewer people and structures would be placed within proximity to wildfire-prone areas at urban-wildland interfaces. Impacts would be less than the Plan

5.3 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Section 15126.6 of the *State CEQA Guidelines* requires that an "environmentally superior" alternative be selected among the alternatives that are evaluated in an EIR. In general, the environmentally superior alternative is the alternative that would be expected to generate the fewest adverse impacts. If the No Project Alternative is identified as environmentally superior, then another environmentally superior alternative shall be identified among the other alternatives.

Table 5.0-17, Impact Comparison Among RTP and Alternatives, summarizes how each of the alternatives performs based on several quantifiable impact measures.

Table 5.0-17
Impact Comparison Among RTP and Alternatives

Impact Measure[1]	Plan	No Project	Old Plan	Countywide Infill
Population, Housing and Employment				
Population	1,017,200	1,017,200	1,017,200	1,017,200
Households	351,900	351,900	351,900	351,900
Employment	426,900	426,900	426,900	426,900
Land Use and Biological Resources				
Open space land consumed (acres)	20,758	22,630	21,384	20,706
Agricultural Resources				
Farmland Consumed (acres)	4,032	4,992	>Plan	< Plan
Traffic				
Total Annual VMT (billions)	9.43	9.79	9.55	9.25
VMT per capita	25.41	25.71	24.92	26.37
Congested Hours (County)	551,175	570,838	554,601	539,071
Congested Hours (Metro Core)	289,277	303,920	287,890	281,696
Air Quality/Health				
SJV NOx ton/day (budget = 18.6)	11.88	12.56	12.21	11.83
Total SB 375 CO2 (tons/day)	19.8	20.94	20.22	19.63
Per capita SB 375 CO2 (lbs.)	14.21	15.02	14.5	14.08
2049vs 2026 (SB 375 CO_2 % reduced)	-14.12	-13.67	-14.39	-14.29
Households w/in 0.25 mile freeways with high AQI	21,936	21,983	25,091	> Plan

Impact Measure[1]	Plan	No Project	Old Plan	Countywide Infill
Energy Use				
Annual Gasoline and Diesel 2049 million gallons	459.06	476.98	464.68	452.13
Water Use				
2049 Residential Water Use million gallons /year	89,365	90,405	>Plan	<Plan

Source: Kern COG and Impact Sciences, 2026
[1] This table compares select quantifiable impacts among alternatives. It is not a comprehensive listing of all impacts as some impacts are not easily quantified and/or not easily compared in a simple table such as the one presented above. But this table does present some of the measures used in assessing impacts.
[2] High volume roadway is one with 50,000 ADT on rural roads and 100,000 ADT on urban roads.
[3] Gross estimate based on total emissions in the County, not taking into account proximity to roadways.
[4] Does not include construction of development projects.

As shown in **Table 5.0-17**, the Countywide Infill Alternative would incrementally reduce significant impacts associated with land consumption including impacts to agricultural resources, cultural resources (archeological paleontological and tribal cultural resources), recreation and biological resources. This would occur as a result of increased residential infill development, resulting in a substantial reduction in the amount of vacant land (including farmland) that would be consumed in 2049. However, it is anticipated that impacts would still remain significant.

Table 5.0-18, Summary of Better/Worse Impacts Between All Alternatives and the Proposed Project provides a comparison of the Plan and the Alternatives. As shown in **Table 5.0-18**, the decision to identify an environmentally superior alternative is not clear-cut. The less dense alternatives generally result in fewer impacts to people but greater impacts to open space and biological resources, whereas the most-dense alternatives increase urban impacts resulting in greater impacts to people. The Countywide Infill Alternative is identified as the environmentally superior alternative because it would result in the least consumption of land and preservation of the most open space including farmland. However, it could result in the greatest impacts to people.

Table 5.0-18
Summary of Better/Worse Impacts Between All Alternatives and the Proposed Project

Alternative	Better than Proposed Project	Worse than Proposed Project
Alternative 1 No Project Alternative	Noise and Air Quality in urban areas	Aesthetics Agricultural Resources Air Quality Biological Resources Cultural Resources Energy Geology and Soils Greenhouse Gas Emissions Hazards and Hazardous Materials Mineral Resources Noise Public Services Transportation Utilities Wildfire
Alternative 2 Old Plan	Aesthetics Noise and air quality in urban areas.	Agricultural Resources Biological Resources Cultural Resources Energy Geology and Soils Greenhouse Gas Emissions Land Use Mineral Resources Transportation Utilities Wildfire
Alternative 3 Countywide Infill Alternative	Aesthetics Agricultural Resources Air Quality (Criteria Pollutants) Cultural Resources (Tribal Cultural Resources) Energy Geology and Soils Greenhouse Gas Emissions Hazards and Hazardous Materials Hydrology and Water Quality Mineral Resources Public Services (Parks) Transportation Wildfire	Air Quality (localized air toxics) Cultural Resources (Historic Resources) Land Use Compatibility with General Plans Noise in urban areas Population and Housing

Source: Impact Science, 2026

While the Countywide Infill Alternative is one potential generalized land use scenario that results in achieving CARB GHG targets, the Countywide Infill Alternative would have other impacts. For example, the Countywide Infill Alternative would result in incrementally more residential development in urban areas and, therefore, less open space and agricultural areas would be consumed by urban uses. The jurisdiction that is anticipated to receive most of the infill development under this alternative is the City of

Bakersfield. It is possible that the zoning in the City of Bakersfield would be sufficiently flexible to accommodate the additional units by 2049, but it is not certain that it would. This scenario assumes that very little development would be approved outside urban areas, which could require zoning changes or land use interventions beyond those currently in place. In addition, as urban areas become denser (more units per acre), urban infrastructure is used more:

- Water and sewer lines are required to carry more, greater than the current capacity, which could result in the need to construct additional capacity in the older infill areas at significant cost.
- Demand for police and fire services increases requiring expansion of existing stations and service personnel (although significant environmental impacts are not anticipated from such construction).
- Parks are used more, resulting in potential crowding and/or over use, with facilities becoming worn and substandard (grass becomes over used and dies, equipment breaks, etc.) and/or the need to construct more parks and recreational facilities.

Passenger vehicle transportation infrastructure may not be able to accommodate peak period volumes, creating increased congestion, noise, and air emission impacts. The Kern region is relatively uncongested compared to the major urban areas of the state. A doubling of population in the infill core areas would reduce mobility for goods movement, which cannot use alternative modes during peak periods, resulting in more trucks in stop-and-go traffic, impacting air quality and noise. While development outside urban areas would likely require the construction of new infrastructure, it would occur in less populated areas and would expose fewer people to construction impacts. Also, in general, infrastructure in less urban areas has greater available capacity since infrastructure is generally sized for capacities that can accommodate substantially more than the current densities (parks, police stations, water lines, etc. have minimum sizes that can generally accommodate more than rural level density). New development on the periphery is often closer to higher-capacity sewer trunk lines, treatment plants, and water wells, lowering infrastructure costs compared to retrofitting older existing urban areas.

Furthermore, as more people are located in the same area, urban impacts increase. Congestion increases, noise, and air emissions in proximity to sensitive receptors (residences, schools, hospitals, etc.) also increase.

Each community must determine what level of population it can support – balancing infrastructure capacity and population density. In developing the Plan, Kern COG has satisfied its obligation under SB 375 to identify a policy and growth pattern that meets desired GHG reduction goals. Imposing additional land use guidelines that would further exceed identified GHG targets would result in greater impacts on local communities (primarily the City of Bakersfield). While these communities (i.e., the City of Bakersfield)

may be able to accommodate such growth at a later time, at the present time, without detailed evaluation of infrastructure carrying capacity, the potential increased impacts to these communities likely would offset the decreased GHG emissions and decreased consumption of open space that could be achieved by the Countywide Infill Alternative. Nonetheless, local jurisdictions, in exercising their land use authority, could choose to interpret the regional SCS policies in terms of the growth pattern identified in the Countywide Infill Alternative.

The Plan provides general guidance on location of development. The 2026 RTP does not impose specific land use controls. This EIR evaluates a number of potential scenarios, some of which comply with regional policy (Plan and Countywide Infill Alternative), some of which do not (No Project, Old Plan). It will be up to each jurisdiction to interpret the 2026 RTP land use policy as it applies to them and, through ongoing monitoring of key performance measures (in cooperation with Kern COG), monitor GHG reductions to ensure consistency with the 2026 RTP. Through ongoing monitoring, Kern COG will adjust regional policy as needed (in the next RTP or in interim Amendments if needed) to ensure that the region complies with applicable State law, including AB 32 and SB 375.

Kern COG is not rejecting the Countywide Infill Alternative or any alternative with increased density and/or greater percentage of high-density housing that might fall between the Countywide Infill Alternative and the Plan as a possible land use scenario for 2049. Rather, Kern COG is rejecting the inclusion of policies in the 2026 RTP that would impose extensive land use intervention (to influence specific land use densities and/or specific locations) with local jurisdictions because 1) such intervention is not necessary to achieve SB 375 targets and 2) Kern COG has no land use authority and no mechanism exists to impose detailed land use control. In the future, should monitoring indicate that such detailed land use intervention appears necessary, Kern COG will work with local jurisdictions and state officials to determine the best mechanism(s) to implement such controls.

6.0 OTHER CEQA CONSIDERATIONS

This chapter addresses the content requirements of the *State CEQA Guidelines* not included in the other chapters. It discusses the effects of implementing the Plan on (1) growth-inducing impacts, (2) significant unavoidable environmental effects of the proposed project, and (3) significant irreversible environmental changes that would result from implementation of the Plan. This section addresses these impact categories.

6.1 GROWTH INDUCEMENT

Section 15125.2(d) of the *State CEQA Guidelines* requires that growth-inducing impacts of a proposed project be considered. Growth-inducing impacts are characteristics of a project that could directly or indirectly foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. According to the *State CEQA Guidelines*, such projects include those that would remove obstacles to population growth (e.g., a major expansion of a wastewater treatment plant) and projects that encourage and facilitate other activities that are beyond those proposed as part of the project and could affect the environment are growth inducing. In addition, as set forth in the *State CEQA Guidelines*, increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. The *State CEQA Guidelines* also state that it must not be assumed that growth in an area is necessarily beneficial, detrimental or of little significance to the environment.

As discussed in **Section 4.14, Population, Housing & Employment** (**Impact POP-1**), the transportation investments and urban form strategies in the proposed 2026 RTP would foster economic and household growth and would remove some obstacles to growth in some parts of the region. As communities develop, pressure could be placed on the urban and suburban fringes. Growth strategies within the 2026 RTP would strategically target growth in areas proximate to jobs and transit. However, the improved accessibility from the proposed 2026 RTP transportation projects could also help facilitate population and economic growth in areas of the region that are currently not developed, despite RTP policies designed to limit such development. Further, the RTP forecasts growth beyond the time horizons of current General Plans, which may result in future developments in areas that are currently unplanned.

It is important to note that the total population in the region is expected to remain the same with or without the 2026 RTP. Therefore, in general, the Plan would accommodate rather than induce growth. The 2026 RTP housing and employment growth pattern continues the emphasis developed in the 2022 RTP of focusing on areas of existing development. Although forecasted growth is typically planned for in the General Plans of the County and the cities, the timeline of the 2026 RTP goes well beyond General Plans

and could therefore result in unplanned growth in urban areas as well. As such, implementation of the 2026 RTP could potentially be growth-inducing.

6.2 SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

Table 2.0, Summary of Impacts and Mitigation Measures, in the **Executive Summary** section of this PEIR, and **Section 4.0** of this PEIR provide a comprehensive identification of the 2026 RTP environmental effects, including the level of significance both before and after mitigation at the regional and TPA levels. Many of the impacts that are determined to be significant and unavoidable in this programmatic analysis likely could be mitigated to less than significant at the project level. Because this PEIR analyzes impacts at the programmatic level, all project circumstances are not foreseeable, and proposed mitigation measures may not be feasible or effective for some projects. Therefore, this PEIR conservatively identifies a number of impacts to be significant and unavoidable.

Section 15126.2(b) of the *State CEQA Guidelines* requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. Implementation of the proposed project would result in the following unavoidable significant impacts:

6.2.1 Aesthetics

Impact AES-1 Have a substantial adverse effect on a scenic vista. (*Significant at the regional level.)*

Impact AES-2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. (*Significant at the regional level.)*

Impact AES-3 In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings; (Public views are those that are experienced from publicly accessible vantage points). In an urbanized area, conflict with applicable zoning and other regulations governing scenic quality. *(Significant at the regional level.)*

Impact AES-4 Create a new source of substantial light or glare, which could affect day or nighttime views and/or causes a public hazard. *(Significant at the regional level.)*

6.2.2 Agriculture and Forestry Resources

Impact AG-1 Convert prime farmland, unique farmland, or farmland of statewide importance (farmland), as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use. *(Significant at the regional level.)*

Impact AG-2 Conflict with existing zoning or land use designation for agricultural use, or a Williamson Act contract. *(Significant at the regional level.)*

Impact AG-3 Conflict with existing zoning or land use designation for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220(G)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104(G)). *(Significant at the regional level.)*

Impact AG-4: Result in the loss of forest land or conversion of forest land to non-forest use. *(Significant at the regional level.)*

Impact AG-5: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use. *(Significant at the regional level.)*

6.2.3 Air Quality

Impact AIR-3 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. *(Significant at the regional and TPA level.)*

Impact AIR-4 Expose sensitive receptors to substantial pollutant concentrations. *(Significant at the regional and TPA level.)*

6.2.4 Biological Resources

Impact BIO-1 Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS. *(Significant at the regional and TPA level.)*

Impact BIO-2 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS. *(Significant at the regional and TPA level.)*

Impact BIO-3 Have a substantial adverse effect on federally protected wetlands, as defined by CWA Section 404 (including, but not limited to, marsh, and vernal pools) through direct removal, filling, hydrological interruption, or other means. *(Significant at the regional and TPA level.)*

Impact BIO-4 Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. *(Significant at the regional and TPA level.)*

Impact BIO-4 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. *(Significant at the regional and TPA level.)*

Impact BIO-4 Conflict with the provisions of an adopted habitat conservation plan (HCP), natural communities conservation plan (NCCP), or other approved local, regional, or state habitat conservation plan. *(Significant at the regional and TPA level.)*

6.2.5 Cultural Resources and Tribal Cultural Resources

Impact CR-1 Cause a substantial adverse change in the significance of a historic structure that is a historical resource as defined in CEQA Guidelines Section 15064.5. *(Significant at the regional and TPA level.)*

Impact CR-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5. *(Significant at the regional and TPA level.)*

Impact CR-3 Disturb any human remains, including those interred outside of formal cemeteries. *(Significant at the regional and TPA level.)*

Impact TCR-1 Cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Code section 21074 that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.
(Significant at the regional and TPA level.)

6.2.6 Energy

Impact EN-1 Substantially increase the consumption of electricity, natural gas, gasoline, diesel, or other nonrenewable energy types. *(Significant at the regional and TPA level.)*

Impact EN-2 Use substantial amounts of electricity and natural gas, thereby requiring the construction of new facilities and new sources of energy or major improvements to local infrastructure. *(Significant at the regional and TPA level.)*

6.2.7 Geology and Soils

Impact GEO-2 Result in substantial soil erosion or the loss of topsoil. *(Significant at the regional and TPA level.)*

Impact GEO-3 Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading subsidence, liquefaction, or collapse. *(Significant at the regional and TPA level.)*

Impact GEO-4 Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property. *(Significant at the regional and TPA level.)*

Impact GEO-6 Directly or indirectly destroy a unique paleontological resource or site. *(Significant at the regional and TPA level.)*

6.2.8 Greenhouse Gas Emissions

Impact GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. *(Significant at the regional and TPA level.)*

Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. *(Significant at the regional and TPA level.)*

6.2.9 Hazards and Hazardous Materials

Impact HAZ-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. *(Significant at the regional and TPA level.)*

Impact HAZ-2 Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. *(Significant at the regional and TPA level.)*

Impact HAZ-4 Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment. *(Significant at the regional and TPA level.)*

6.2.10 Hydrology and Water Quality

Impact W-1 Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. *(Significant at the regional and TPA level.)*

Impact W-2 Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? *(Significant at the regional level.)*

Impact W-3 Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on-or-off site; substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or offsite; create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows. *(Significant at the regional level.)*

Impact W-4 Have sufficient water supplies available to serve the project and reasonably for seeable future development during normal dry and multiple dry years. *(Significant at the regional level.)*

Impact W-5 Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation. *(Significant at the regional level.)*

Impact W-6 Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. *(Significant at the regional level.)*

6.2.11 Land Use

Impact LU-1 Physically divide an established community. *(Significant at the regional and TPA level.)*

Impact LU-2 Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. *(Significant at the regional and TPA level)*

6.2.12 Mineral Resources

IMPACT MIN-2: Potential to result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. *(Significant at the regional and TPA level)*

6.2.13 Noise

Impact NOISE-1 Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. *(Significant at the regional and TPA level.)*

Impact NOISE-2 Generation of excessive groundborne vibration or groundborne noise levels. *(Significant at the regional and TPA level.)*

6.2.14 Population, Housing, and Employment

Impact POP-1 Induce substantial population growth to areas of the region either directly (by proposing new homes and businesses) or indirectly (by extending roads and other infrastructure). *(Significant at the regional and TPA level.)*

Impact POP-2 Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. *(Significant at the regional and TPA level.)*

6.2.15 Public Services

Recreation

Impact REC-1 Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial deterioration of the facilities could occur. *(Significant at the regional and TPA level.)*

6.2.16 Transportation and Traffic

Impact TR-1 Conflict or be inconsistent with CEQA Guidelines section 15064.3(b). *(Significant at the regional and TPA level.)*

Impact TR-2 Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways. *(Significant at the regional and TPA level.)*

6.2.17 Utilities

Solid Waste

Impact SW-1 Generate a substantial increase in the amount of solid waste that exceeds the region's available landfills' capacity to handle and dispose of the waste, and/or not comply with federal, state and local statutes related to solid waste. *(Significant at the regional and TPA level.)*

6.2.18 Wildfire

Impact WF-1 Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including whether wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. *(Significant at the regional and TPA level.)*

Impact WF-2 If located in or near state responsibility areas of lands classified as very high fire hazard severity zones, would the project: Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. *(Significant at the regional and TPA level.)*

Impact WF-3 Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risks or that may result in temporary or ongoing impacts to the environment. *(Significant at the regional and TPA level.)*

Impact WF-4 Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope stability, or drainage changes. *(Significant at the regional and TPA level.)*

6.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL EFFECTS

Section 15126.2(d) of the *State CEQA Guidelines* requires a discussion of any significant irreversible environmental changes that would be caused by the proposed project. Specifically, Section 15126.2(d) states:

> *Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irreversible commitments of resources should be evaluated to assure that such current consumption is justified.*

Generally, a project could result in significant irreversible environmental changes if either of the following could occur:

- The primary and secondary impacts would generally commit future generations to similar uses especially in areas not planned for growth (such as previously inaccessible areas).
- The project involves uses in which irreversible damage could result from potential environmental accidents associated with the project.

6.3.1 Use of Nonrenewable Resources that Would Commit Future Generations

Growth and land use changes that would result from implementation of the 2026 RTP would likely commit future generations to those uses. Once established, land use patterns can be difficult to change or significantly influence without considerable political, social, and economic cost. The development pattern reflected in the 2026 RTP represents a commitment of these areas to urban uses for the foreseeable future. The proposed 2026 RTP represents an improved and more efficient land use pattern, with more growth concentrated on less land and closer to existing infrastructure, than under the No Project Alternative. The result is better utilization of already developed land and better utilization of new land to be converted at the urban edge or in undeveloped areas of the region. As a secondary result, per capita use of other nonrenewable resources decreases under the 2026 RTP. These include: lower per capita use of energy and fuels; less conversion of agricultural, open space, and habitat lands; and lower per-capita emissions of air pollutants, including GHGs.

However, construction activities related to the 2026 RTP would nevertheless result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels (including fuel oil), natural gas, and gasoline for automobile and construction equipment, and aggregate supply used in construction (See discussion in **Section 4.6, Energy,** and **Section 4.12, Mineral Resources**).

With respect to operational activities, compliance with all applicable building codes, as well as project mitigation measures or project requirements, would help ensure that natural resources are conserved or recycled as feasible. It is also possible that new technologies or systems will emerge, or will become more cost-effective or user-friendly, that will further reduce the region's reliance upon nonrenewable resources; however, even with implementation of conservation measures consumption of nonrenewable resources would generally increase with implementation of the Plan.

Furthermore, growth generally results in a long-term increase in the demand for electricity and natural gas supplies and distribution. However, the proposed 2026 RTP and other federal and state energy efficiency standards will result in lower per-capita demand by encouraging development in urban areas; encouraging

energy conservation in new construction and existing buildings; and reducing the infrastructure energy demands by encouraging alternative transportation such as bicycling, walking, and public transit. Furthermore, the proposed 2026 RTP would result in lower per-capita VMT.

The County also has multiple nonrenewable resources, including agricultural lands, open space, habitat areas, and mineral resources areas that contain aggregate, oil and natural gas. Increased levels of development outside of already developed areas could result in permanent loss or other adverse impacts to these resource areas.

While approximately 4,256 acres of farmland and 10,912 acres of vacant land would be converted to urban land uses as a result of implementation of the proposed 2026 RTP, this area of potential impact is smaller than would otherwise occur without regional efforts to encourage more compact growth (the No Project Alternative would consume 5,248 acres of farmland and 10,944 acres of vacant land). By increasing the density of development in urban areas and decreasing the footprint of growth, pressures to convert agricultural and open space lands outside areas planned for growth are decreased.

In sum, any growth in the region will result in significant irreversible resource commitments. In evaluating the significance of a project's irreversible resource commitments, CEQA requires a lead agency to consider whether such commitments are "justified" (*State CEQA Guidelines* Section 15126.2(d)). As discussed above, and consistent with the project objectives for the Plan, the Plan is designed to minimize irreversible resource commitments, thus maximizing opportunities for future generations. While the proposed Plan will result in irreversible resource commitments, by encouraging higher density, less-consumptive development, as compared to the environmental baseline and forecasted conditions, the commitments are justified and beneficial. Therefore, these commitments are considered less than significant.

6.3.2 Irreversible Damage from Environmental Accidents

Any growth in the region includes the potential for irreversible damage from environmental accidents. For example, greater densities expose more people in the same area to unexpected environmental events such as fire, flood, and/or earthquake, which could lead to irreversible damage. In addition, irreversible changes to the physical environment could occur from the accidental release of hazardous materials associated with transport on roadways, as more hazardous materials are transported through the region and more people are located in closer proximity to hazardous materials threats.

However, this exposure would exist under any growth scenario. Federal and state regulations require that RTPs accommodate projected growth in a region based on market-based forecasts. The SCS minimizes the footprint of that growth compared to the No Project Alternative. Implementation of the proposed 2026 RTP does not, in and of itself, result in greater potential for irreversible damage from an environmental accident.

6.4 LESS THAN SIGNIFICANT ENVIRONMENTAL EFFECTS ANALYZED IN THE EIR

6.4.1 Aesthetics

Impact AES-1 Have a substantial adverse effect on a scenic vista. *(Less than significant at the TPA level.)*

Impact AES-2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. *(Less than significant at the TPA level.)*

Impact AES-3 In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings; (Public views are those that are experienced from publicly accessible vantage points). In an urbanized area, conflict with applicable zoning and other regulations governing scenic quality. *(Less than significant at the TPA level.)*

Impact AES-4 Create a new source of substantial light or glare, which could affect day or nighttime views and/or causes a public hazard. *(Less than significant at the TPA level.)*

6.4.2 Agricultural Resources

Impact AG-1 Convert prime farmland, unique farmland, or farmland of statewide importance (farmland), as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use. *(Less than significant at the TPA level.)*

Impact AG-2 Conflict with existing zoning or land use designation for agricultural use, or a Williamson Act contract. *(Less than significant at the TPA level.)*

Impact AG-3 Conflict with existing zoning or land use designation for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220(G)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104(G)). *(Less than significant at the TPA level.)*

Impact AG-4: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use. *(Less than significant at the TPA level.)*

6.4.3 Air Quality

Impact AIR-1 Projected long-term emissions from all sources (stationary and mobile) would be considered to be significant if they are not consistent with the applicable air quality management plans and state implementation plans. *(Less than significant at the regional and TPA level.)*

Impact AIR-2 Projected long-term emissions of criteria pollutants are considered significant if they are substantially greater than current emission levels. *(Less than significant at the regional and TPA level.)*

Impact AIR-5 Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. *(Less than significant at the regional and TPA level.)*

6.4.4 Biological Resources

Impact BIO-5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. *(Less than significant at the regional and TPA level.)*

Impact BIO-6 Conflict with the provisions of an adopted habitat conservation plan (HCP), natural communities conservation plan (NCCP), or other approved local, regional, or state habitat conservation plan. *(Less than significant at the regional and TPA level.)*

6.4.5 Geology and Soils

Impact GEO-1 Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving: a rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; Strong seismic ground shaking; Seismic-related ground failure, including liquefaction; or landslides. *(Less than significant at the regional and TPA level.)*

Impact GEO-5 Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. *(Less than significant at the regional and TPA level.)*

6.4.7 Hazards and Hazardous Materials

Impact HAZ-3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. *(Less than significant at the regional and TPA level.)*

Impact HAZ-5 For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area. *(Less than significant at the regional and TPA level.)*

Impact HAZ-6 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. *(Less than significant at the regional and TPA level.)*

6.4.8 Mineral Resources

Impact MIN-1: Potential to result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. *(Less than significant at the regional and TPA level.)*

6.4.9 Noise

Impact NOISE-3 For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels. *(Less than significant at the regional and TPA level.)*

Impact NOISE-4 Exposure of people residing or working in the project area to excessive noise levels if the project is located in the vicinity of a private airstrip. *(Less than significant at the regional and TPA level.)*

6.4.10 Public Services

Impact FIRE-1 Result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios and response times. *(Less than significant at the regional and TPA level.)*

Impact POLICE-1 Result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios and response times. *(Less than significant at the regional and TPA level.)*

Impact EDU-1 Result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios or other educational performance factors. *(Less than significant at the regional and TPA level.)*

Impact REC-2 Result in substantial adverse physical impacts associated with the provision of new or physically altered parks and recreational facilities the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios. *(Less than significant at the regional and TPA level.)*

Impact LIB-1 Result in substantial adverse physical impacts associated with the provision of new or physically altered library facilities the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios. *(Less than significant at the regional and TPA level.)*

6.4.11 Traffic and Transportation

Impact TR-1 Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. *(Less than significant at the regional and TPA level.)*

Impact TR-3 Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). *(Less than significant at the regional and TPA level.)*

Impact TR-4 Result in inadequate emergency access. *(Less than significant at the regional and TPA level.)*

6.4.12 Utilities

Impact WW-1 Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. *(Less than significant at the regional and TPA level.)*

Impact WW-2 Result in the determination by a wastewater treatment provider that it has inadequate capacity to serve projected demand in addition to existing commitments. *(Less than significant at the regional and TPA level.)*

7.0 LIST OF EIR PREPARERS

LIST OF PREPARERS

Impact Sciences, Inc., has prepared this environmental document under contract to the Kern Council of Governments. Persons directly involved in the review and preparation of this report include:

Kern Council of Governments

Jay Schlosser, Executive Director
Robert R. Ball, Planning Division Director
Ben Raymond, Regional Planner

Additional Review and Assistance Provided by:

Impact Sciences, Inc. (EIR Preparation)

Jessica Kirchner, AICP, Managing Principal
Brett Pomeroy, Associate Principal
Annalie Sarrieddine, Planner
Amber Williams, Technical Specialist
Kara Yates Hines, Publications Manager

In association with:

Sirius Environmental

Wendy Lockwood, REA, Principal

8.0 REFERENCES

1.0 INTRODUCTION

California Air Resources Board, December 2022 https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf

California Air Resources Board. Available online at: https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets

California Legislative Information. 2008. *Senate Bill No. 375, Chapter 728*.

California Legislative Information. 2013. *Senate Bill No. 743*.

California Legislative Information. *Chapter 2.5 Transportation Planning and Programming [65080-65086.5]*.

California Legislative Information. *Chapter 2.5 Transportation Planning and Programming [65080-65086.5]*.

California Legislative Information. *Senate Bill No. 375*.

California Legislative Information. *Senate Bill No. 375*.

California Oak Foundation v. Regents of University of California (2010) 188 Cal.App. 4th 227, 275-276.

Eureka Citizens for Responsible Gov't v City of Eureka (*2007) 147 Cal.App.4th 357*

Federal Highway Administration. *Title 23, U.S.C.* Available online at: https://www.fhwa.dot.gov/map21/docs/title23usc.pdf, accessed March 30, 2026.

Governor's Office of Planning and Research. *Current CEQA Guidelines Update*. Available online at: http://opr.ca.gov/ceqa/updates/guidelines/

Governor's Office of Planning and Research. *Technical Advisory – On Evaluating Transportation Impacts in CEQA*. Available online at: http://opr.ca.gov/ceqa/updates/sb-743/,

Governor's Office of Planning and Research. *Technical Advisory – On Evaluating Transportation Impacts in CEQA*. Available online at: http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf, accessed July 25, 2019.

In re Bay Delta (2008) 43 Cal. 4th 1143, 1174

Land Use and Climate Innovation, December 2018 https://lci.ca.gov/docs/20181228-Discussion_Draft_Climate_Change_Adivsory.pdf

Land Use and Climate Innovation, December 2018 https://lci.ca.gov/docs/20181228-Discussion_Draft_Climate_Change_Adivsory.pdf, accessed March 29, 2026.

Land Use and Climate Innovation, Program Update #1: Statewide Mitigation Bank for Significant Transportation Impacts, available at: https://www.lci.ca.gov/ceqa/docs/20251229-Statewide_Mitigation_Bank_for_Significant_Transportation_Impacts.pdf

Mira Mar Mobile Community v. City of Oceanside (2004) 119 Cal.App.4th 477

Pub. Res. Code §21155.2(b)

Residents Ad Hoc Stadium Committee v. Board of Trustees (1979) 89 Cal.App.3d 274, 286.

Senate Bill No. 226.

Sierra Club v. City of Orange (2008) 163 Cal.App.4th 523, 541

U.S. Department of Transportation. *MAP-21 – Moving Ahead for Progress in the 21st Century*. Available online at: https://www.fhwa.dot.gov/map21/, accessed March 30, 2026.

U.S. Fish and Wildlife Services. *The National Environmental Policy of 1969*. Available online at: https://www.fws.gov/r9esnepa/RelatedLegislativeAuthorities/nepa1969.PDF

2.0 EXECUTIVE SUMMARY

CEQA § 15126.6[e][2]. Available online at: https://www.law.cornell.edu/regulations/california/14-CCR-15126.6 , accessed on April 20, 2026.

State CEQA Guidelines, Section 15123. Available online at: https://govt.westlaw.com/calregs/Document/IB5A2CE00D48811DEBC02831C6D6C108E?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default), accessed on April 21, 2026.

3.0 PROJECT DESCRIPTION

CHSRA, 2024 https://hsr.ca.gov/about/project-update-reports/2025-project-update-report/

Kern COG, Commuter Rail Feasibility Study, 2012, Available at: https://www.kerncog.org/wp-content/uploads/2010/03/KernCOG_Commuter_Rail_Draft_Report_20120720.pdf, accessed April

Kern COG, Federal Air Quality Conformity Analysis, available at: https://www.kerncog.org/conformity/.

Kern COG. Regional Housing Needs. Available online at: https://www.kerncog.org/regional-housing-needs/#:~:text=REAP%20is%20a%20State%20of,case%20studies%20and%20other%20resourceshttps://www.kerncog.org/regional-housing-needs/#:~:text=REAP%20is%20a%20State%20of,case%20studies%20and%20other%20resources., accessed April 22, 2026.

Kern EDC, Market Overview, 2025. available at: https://kernedc.com/market-overview/

Smart Asset, https://smartasset.com/mortgage/quicken-loans-review#california/most-affordable, 2017

State of California Employment Development Department. Unemployment Rate Historical Trend. April 2022 Available online at: https://www.labormarketinfo.edd.ca.gov/file/lfmonth/bake$pds.pdf, accessed on April 17, 2026.

4.0 ENVIRONMENTAL IMPACT ANALYSIS

4.1 Aesthetics

California Department of Transportation (Caltrans). *Federal Highways, " Guidelines for the Visual Impact Assessment of Highway Projects,"* Available online at: https://www.environment.fhwa.dot.gov/env_topics/other_topics/VIA_Guidelines_for_Highway_Projects.aspx, accessed on March 23, 2026.

California High Speed Rail Authority. Bakersfield. Available at: https://hsr.ca.gov/high-speed-rail-in-california/station-communities/bakersfield/, accessed March 27, 2026.

California High-Speed Rail Authority (CHSRA), 2025 Project Update Report, February 2025. Available online at:. https://hsr.ca.gov/wp-content/uploads/2025/03/2025-Project-Update-Report-FINAL-030125-A11Y.pdf

California Legislative Information. 2013. *Senate Bill No. 743*.

Caltrans. *California State Scenic Highway System Map*. 2026. Available online at: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa, accessed on March 24,2026.

City of Bakersfield, *Bakersfield 2045 General Plan Update.* Available online at: https://bakersfield2045.com/general-plan/, accessed April 30, 2026.

City of Bakersfield, *Metropolitan Bakersfield General Plan,* December 2002. Available online at: https://content.civicplus.com/api/assets/37a2e20d-e610-431f-a222-9f4f2ecd2ddd.

County of Kern, Code of Ordinances - Chapter 19.64: Wind Energy (WE) Combining District. Available online at: https://library.municode.com/ca/kern_county/codes/code_of_ordinances?nodeId=TIT19ZO_CH19.64WIENWECODI, accessed April 30, 2026.

County of Kern, Code of Ordinances - Chapter 19.74: Scenic Corridor Combining District. Available online at: https://library.municode.com/ca/kern_county/codes/code_of_ordinances?nodeId=TIT19ZO_CH19.74SCCOSCCODI, accessed April 30, 2026.

County of Kern, Code of Ordinances - Chapter 19.81: Outdoor Lighting. Available online at: https://library.municode.com/ca/kern_county/codes/code_of_ordinances?nodeId=TIT19ZO_CH19.81OULIDASKOR, accessed April 30, 2026.

County of Kern, Code of Ordinances - Chapter 19.84: Signs. Available online at: https://library.municode.com/ca/kern_county/codes/code_of_ordinances?nodeId=TIT19ZO_CH19.84SI, accessed April 30, 2026.

County of Kern, Kern County General Plan, June 2004. Available online at: https://psbweb.kerncounty.com/planning/pdfs/kcgp/KCGP_Complete.pdf, accessed April 30, 2026.

Federal Register, *Habitat Conservation Plan for the Kern County Valley Floor, Kern County, CA*, July 12, 2007. Available online at: https://www.federalregister.gov/documents/2007/07/12/E7-13528/habitat-conservation-plan-for-the-kern-county-valley-floor-kern-county-ca, accessed on March 26, 2026.

U.S. Department of Transportation, Federal Highway Administration, *National Scenic Byways & All-American Roads* . Available online at: https://fhwaapps.fhwa.dot.gov/bywaysp/States/Show/CA, accessed on March 27, 2026.

Kern County Department of Agriculture and Measurement Standards, 2024 Kern County Agricultural Crop Report, October 7, 2025. Available online at: http://www.kernag.com/caap/crop-reports/crop20_29/crop2024.pdf, accessed on April 30, 2026.

4.2 Agriculture and Forestry Resources

2002 Metropolitan Bakersfield General Plan. Available online at: https://content.civicplus.com/api/assets/37a2e20d-e610-431f-a222-9f4f2ecd2ddd, accessed on April 2, 2026.

2004 Kern County General Plan. Available online at: https://kernplanning.com/planning/planning-documents/general-plans-elements/, accessed on April 2, 2026.

2024 Kern County Agricultural Crop Report, http://www.kernag.com/caap/crop-reports/crop20_29/crop2024.pdf, April 2, 2026.

California Department of Conservation, Farmland Mapping and Monitoring Program. Available online at: https://www.conservation.ca.gov/dlrp/fmmp/Pages/Kern.aspx, accessed on April 2, 2026.

County of Kern, *Kern County Crop Statistics*. 2025. Available online at: http://www.kernag.com/dept/stats/crop-stats.asp , April 2, 2026.

Kern County Department of Agriculture and Measurement Standards, 2024 Kern County Agricultural Crop Report, October 7, 2025. Available online at: http://www.kernag.com/caap/crop-reports/crop20_29/crop2024.pdf, accessed April 29, 2026.

Kern County, *Volume 1 – Recirculated Draft Program Environmental Impact Report,* January 2004. Available online at: https://psbweb.kerncounty.com/planning/pdfs/kcgp/KCGP_RPEIR_vol1.pdf, accessed April 29, 2026.

United States Department of Agriculture, What's New: Natural Resources Conservation Service (NRCS) and the 2018 Farm Bill. Available online at:

https://www.farmers.gov/sites/default/files/documents/NRCS-FarmBill2018_WhatsNew-19.pdf, accessed April 2, 2026.

United States Department of Agriculture. 2018 Farm Bill. Available online at: https://www.farmers.gov/working-with-us/farm-bill, accessed April 2, 2026.

USDA. 2022 Census of Agriculture County Profile. Kern County. Available online at: https://data.nass.usda.gov/Publications/AgCensus/2022/Online_Resources/County_Profiles/California/cp06029.pdf, accessed April 2, 2026.

4.3 Air Quality

ARB, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005.

Cahill, T. A., *Vehicular Exposures and Potential Mitigations Downwind of Watt Avenue, Sacramento, CA. Report to The Health Effects Task Force, Breathe California of Sacramento-Emigrant Trails*, 2006.

California Air Resources Board and Office of Environmental Health, "Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values." Available online at: https://ww2.arb.ca.gov/sites/default/files/classic/toxics/healthval/contable09252025.pdf, accessed March 26, 2026.

California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective,* April 2005.

California Air Resources Board. 2005. Air Quality and Land Use Handbook: A Community Health Perspective. Available online at: https://ww2.arb.ca.gov/news/air-resources-board-approves-land-use-planning-handbook, accessed March 27, 2026.

California Air Resources Board. *The California Almanac of Emissions and Air Quality 2013 Edition*. 2013.

CARB, *The East Bay Children's Health Study; Traffic-Related Air Pollution Near Busy Roads*, June 7, 2004.

CARB. §2485. Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling. Available online at: https://ww3.arb.ca.gov/msprog/truck-idling/13ccr2485_09022016.pdf, accessed March 27, 2026.

CARB. 2019. California Air Toxics Program – Background. Available online at: https://ww3.arb.ca.gov/toxics/background.htm, accessed March 27, 2026.

CARB. Amended Regulation: Airborne Toxic Control Measure to Limit School Bus Idling at Schools. Available online at: https://ww2.arb.ca.gov/sites/default/files/2021-02/sbidling.pdf, accessed March 27, 2026.

CARB. Draft 2022 State Strategy for the State Implementation Plan January 31, 2022. Available online at: https://ww2.arb.ca.gov/sites/default/files/2022-01/Draft_2022_State_SIP_Strategy.pdf, accessed April 11, 2022.

Eastern Kern Air Pollution Control District, 2023 Ozone Attainment Plan for the 2008 & 2015, 8-Hour Ozone National Ambient Air Quality Standards (NAAQS), adopted May 4, 2023. Available online at: http://www.kernair.org/Documents/Rules/2023%20Attainment%20Plan/EKAPCD_2023_Ozone_Plan_Adopted_5-4-23.pdf, accessed March 27, 2026.

European Environment Agency, Ozone – O_3. Available online at: https://www.eea.europa.eu/en/analysis/publications/air-quality-status-report-2025/ozone, accessed March 26, 2026.

FHWA, Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA - Figure 1. Available online at: https://www.fhwa.dot.gov/Environment/air_quality/air_toxics/policy_and_guidance/nmsatetrends.cfm, accessed March 26, 2026.

FHWA, Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA - Figure 1. Available online at: https://www.fhwa.dot.gov/Environment/air_quality/air_toxics/policy_and_guidance/nmsatetrends.cfm, accessed April 11, 2026.

FHWA, *Memorandum. Information: Interim Guidance Update on Air Toxic Analysis in NEPA Documents*, December 6, 2012.

Gauderman, W. J., H. Vora, R. McConnell, K. Berhane, F. Gilliland, D. Thomas, F. Lurmann, E. Avol, N. Kunzli, M. Jerrett, and J. Peters, *Effect of Exposure to Traffic on Lung Development from 10 to 18 Years of Age: A Cohort Study*, The Lancet, Volume 369. February 17, 2007.

Kern COG's most recent Air Quality Conformity Analysis is located on the Kern COG website at https://www.kerncog.org/conformity/

Kern Council of Governments. *Summary of updates to the Kern COG VMIP-3 travel demand model*, February 12, 2026. Available online at: https://www.kerncog.org/wp-content/uploads/2026/02/KernCOG-model-update-doc.20260212.pdf, accessed April 8, 2026.

McConnell, R., K. Berhane, L. Yao, M. Jerrett, F. Lurmann, F. Gilliland, N. Kunzli, J. Gauderman, E. Avol, D. Thomas, and J. Peters, *Traffic, Susceptibility, and Childhood Asthma*, 2006.

OEHHA, Guidance Manual for Preparation of Health Risk Assessments*, February 2015.*

San Joaquin Valley Air Pollution Control District, 2022 Ozone Plan for the 2015 8-Hour Ozone Standard, adopted December 15, 2022. Available online at: https://www.valleyair.org/media/q55posm0/0000-2022-plan-for-the-2015-8-hour-ozone-standard.pdf, accessed March 27, 2026.

San Joaquin Valley Air Pollution Control District, 2024 Plan for the 2012 PM2.5 Standard, adopted June 20, 2024. Available online at: https://www.valleyair.org/rules-and-planning/air-quality-plans/particulate-matter-plans/2024-plan-for-the-2012-pm25-standard/, accessed March 27, 2026.

San Joaquin Valley Air Pollution Control District, Current District Rules and Regulations. Available online at: https://www.valleyair.org/rules-and-planning/current-district-rules-and-regulations/, accessed March 27, 2026.

San Joaquin Valley Air Pollution Control District, Guidance for Assessing and Mitigating Air Quality Impacts, March 19, 2015. Available online at: https://www.valleyair.org/media/g4nl3p0g/gamaqi.pdf, accessed March 27, 2026.

SCAQMD, *Traffic Pollutants and Health Effects*. May 20, 2005.

SJVAPCD, Guidance for Assessing and Mitigating Air Quality Impacts, March 2015. Available online at: https://ww2.valleyair.org/media/g4nl3p0g/gamaqi.pdf, accessed April 8, 2026.

South Coast Air Quality Management District (SCAQMD). 2021. *MATES V: Multiple Air Toxics Exposure Study*. Available online at: http://www.aqmd.gov/docs/default-source/planning/mates-v/mates-v-final-report-9-24-21.pdf?sfvrsn=6, accessed March 26, 2026.

Southern California Association of Governments, Connect SoCal 2024 RTP, Connect SoCal 2024, Program EIR, 3.3 Air Quality, December 2023. Available online at: https://scag.ca.gov/sites/default/files/2024-05/23-3052-peir-2024-draft-3-3-air-quality.pdf, accessed April 8, 2026.

U.S. Environmental Protection Agency (U.S. EPA), Integrated Risk Information System (IRIS) Chemical Assessment Summary: Diesel engine exhaust, February 28, 2003. Available online at: https://iris.epa.gov/static/pdfs/0642_summary.pdf, accessed March 26, 2026.

U.S. Environmental Protection Agency (U.S. EPA). n.d.a. "The ASPEN Model," https://archive.epa.gov/airtoxics/nata/web/html/aspen.html.

U.S. Environmental Protection Agency (U.S. EPA). n.d.b. "National Air Toxics Assessments," https://www.epa.gov/national-air-toxics-assessment.

U.S. Environmental Protection Agency, Air Quality Index, A Guide to Air Quality and Your Health, February 2014, https://www.airnow.gov/sites/default/files/2018-04/aqi_brochure_02_14_0.pdf, accessed April 8, 2026.

U.S. EPA, Technical Overview of Volatile Organic Compounds. Available online at: https://www.epa.gov/indoor-air-quality-iaq/technical-overview-volatile-organic-compounds, accessed March 26, 2026.

U.S. OSHA, Diesel Exhaust/ Diesel Particulate Matter, January 2013. Available online at: https://www.osha.gov/sites/default/files/publications/OSHA-3590.pdf, accessed March 26, 2026.

4.4 Biological Resources

Bureau of Land Management, Bakersfield Field Office, available at: https://www.blm.gov/office/bakersfield-field-office , accessed April 30, 2026

California State Parks, Tule Elk State Preserve, https://www.parks.ca.gov/pages/584/files/TuleElkSNRWebBrochure2012Rev.pdf; accessed March 24, 2026

CNLM, Sand-Ridge, available at: https://www.cnlm.org/portfolio_page/sand-ridge/ , accessed April 30, 2026

Kern County Valley Floor Habitat Conservation Plan, December 2006. Available online at: https://psbweb.co.kern.ca.us/planning/pdfs/vfhcp_dec06.pdf

National Centers for Environmental Information. County Mapping. Available online at: https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/mapping/4/pcp/202512/12/value, accessed April 2, 2026.

US Fish and Wildlife Service, "Wetlands Mapper," https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/ , accessed April 2026

USFS, Welcome to Sequoia National Forest, available at: https://www.fs.usda.gov/r05/sequoia , accessed April 30, 2026

4.5 Cultural Resources

California Office of Historic Preservation. Sebastian Indian Reservation. Available online at: https://ohp.parks.ca.gov/ListedResources/Detail/133, accessed March 25, 2026.

Federal Register. *Indian Entities Recognized by and Eligible To Receive Services From the United States Bureau of Indian Affairs*. Updated August 11, 2023. Available at: https://www.federalregister.gov/documents/2024/01/08/2024-00109/indian-entities-recognized-by-and-eligible-to-receive-services-from-the-united-states-bureau-of, accessed March 25, 2026.

Northern California Indian Development Council, California Indian Pre-contact Tribal Territories Map. Available online at: https://ncidc.org/sites/default/files/images/import/education_graphics/CalTribe-precontact.jpg, accessed March 25, 2026.

Public Resources Code Section 21084.1 Available online at: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=21084.1, accessed on March 25, 2026.

Public Resources Code Section 50241 (e)

State CEQA Guidelines Section 15064.5 (b)(1)

4.6 Energy

California Center for Sustainable Energy, *San Joaquin Valley Plug in Electric Vehicle Readiness Plan,* 2021. Available online at: http://energycenter.org/sites/default/files/docs/nav/programs/pev-planning/San_Joaquin_Valley_PEV_Readiness_Planning_Guide.pdf, accessed March 30, 2026.

California Energy Commission, *2024 Total System Electric Generation.* Available online at: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2024-total-system-electric-generation, accessed March 30, 2026.

California Energy Commission, Adopted 2024 Integrated Energy Policy Report Update, October 9, 2025. Available online at: https://www.energy.ca.gov/publications/2024/2024-integrated-energy-policy-report-update, accessed March 30, 2026.

California Energy Commission, *California Greenhouse Gas Emission Inventory Report*, 2025. https://ww2.arb.ca.gov/sites/default/files/2025-11/nc-2000_2023_ghg_inventory_trends.pdf, accessed March 30, 2026.

California Energy Commission, Light-Duty Vehicle Population in California, 2025. Available online at: https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics-collection/light, accessed March 30, 2026.

California Energy Commission. 2024. *Electricity Consumption by County: Kern County.* https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/california-energy-consumption-dashboards-0 , accessed April 30, 2026.

California Energy Commission. 2024. *Gas Consumption by County: Kern County.* https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/california-energy-consumption-dashboards-1 , accessed April 30, 2026.

California Energy Commission. Final 2024 Integrated Energy Policy Report Update, October 2025. Available online at: https://www.energy.ca.gov/publications/2024/2024-integrated-energy-policy-report-update, accessed on March 30, 2026.

California Energy Commission. *Supply and Demand of Natural Gas in California,.* https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california, accessed March 30, 2026.

CARB, *2022 Scoping Plan for Achieving Carbon Neutrality*, 2022. Available online at: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf, accessed July 17, 2024.

CARB, *2022 Scoping Plan for Achieving Carbon Neutrality*, 2022. Available online at: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf, accessed July 5, 2024.

Cleanview, "Solar Projects in California." Available online at: https://cleanview.co/planned-solar-projects/california, accessed March 30, 2026.

Department of Conservation, California Geologic Energy Management Division, *2023 Annual Report of the State Oil and Gas Supervisor*, November 7, 2025. Available online at: https://www.conservation.ca.gov/calgem/pubs_stats/annual_reports/Pages/annual_reports.aspx, accessed March 30, 2026.

Desert Renewable Energy Conservation Plan, *Kern County Renewable Energy Fact Sheet*, 2022. Available online at: https://www.energy.ca.gov/programs-and-topics/programs/desert-renewable-energy-conservation-plan, accessed March 30, 2026.

Golden Empire Transit, *About GET*, 2022. Available online at: https://www.getbus.org/about-get/, accessed on March 30, 2026.

Kern Economic Development Foundation, *The Economic Contribution of Oil and Gas in Kern County*, January 2021. Available online at: https://kernedc.com/wp-content/uploads/2021/04/KEDF-Economic-Contribution-of-the-Oil-and-Gas-Industry-in-Kern-County_-2021.pdf, accessed March 30, 2026.

Nature Communications. *Energy Efficiency to Reduce Residential Electricity and Natural Gas Use Under Climate Change*, May 15, 2017. Available online at: https://www.nature.com/articles/ncomms14916, accessed on March 30, 2026.

Tehachapi News, *Visitor Guide: Something in the air: Tehachapi Pass makes ideal wind energy location,* July 21, 2021. Available online at: https://www.tehachapinews.com/visitor-guide/visitor-guide-something-in-the-air-tehachapi-pass-makes-ideal-wind-energy-location/article_26808b50-dbaf-11eb-b54d-0330c6374226.html, accessed on March 30, 2026.

The California Energy Commission. *California Retail Fuel Outlet Annual Reporting.* Available online at: https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting, accessed March 30, 2026.

U.S. Department of Energy, *Alternative Fuels Data Center*, https://www.afdc.energy.gov/, accessed March 30, 2026.

U.S. Department of Energy, *Fuels & Vehicles*. Available online at: https://afdc.energy.gov/, accessed on March 30, 2026.

U.S. Energy Information Administration, *Petroleum & Other Liquids Data: U.S. Field Production of Crude Oil, 2025. Available online at:* https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=mcrfpus2&f=a, accessed March 27, 2026.

U.S. Energy Information Administration, *U.S. Energy Facts Explained*, available online at: https://www.eia.gov/energyexplained/us-energy-facts/, accessed on March 27, 2026.

United Nations. 2004. *Economic and Social Affairs: World Population to 2300.*

US Energy Information Administration, *Use of Energy in the United States Explained: Energy Use for Transportation, 2022.* Available online at: https://www.eia.gov/energyexplained/?page=us_energy_transportation, accessed March 27, 2026.

US Energy Information Administration, *World Liquid Fuels Consumption*, https://www.eia.gov/outlooks/steo/report/global_oil.php, accessed on March 27, 2026.

US Energy Information Administration. *Frequently Asked Questions*. http://www.eia.gov/tools/faqs/faq.cfm?id=33&t=6, accessed March 27, 2026.

4.7 Geology and Soils

2020 Kern County Multi-Hazard Mitigation Plan, https://mitigatehazards.com/county-of-kern/kern-hmp-docs/, April 3, 2026.

California Department of General Services, Building Standards *Commission. California Building Standards Code*. Available online at: https://www.dgs.ca.gov/BSC/Codes, accessed April 3, 2026.

California Geological Survey (CGS), *Guidelines for evaluating the hazard of surface fault rupture, Note 49*, 2002. Available online at: https://www.conservation.ca.gov/cgs/Documents/Publications/CGS-Notes/CGS-Note-49.pdf, accessed March 28, 2026.

California State Water Resources Control Board. 3.2C – Construction Practices – Onsite Wastewater Treatment Systems (OWTS). Available online at: https://www.waterboards.ca.gov/water_issues/programs/nps/encyclopedia/3_2c_const_owts.html, accessed March 29, 2026.

CBS News, *Recent California Earthquakes a Stark Warning for Los Angeles. July 8, 2019.* Available online at: https://www.cbsnews.com/news/california-earthquakes-a-stark-warning-for-los-angeles-ridgecrest-trona/, accessed April 2, 2026.

Hart and Bryant, 1997

Michigan State University, RUSLE Online Soil Erosion Assessment Tool. Available online at: http://www.iwr.msu.edu/rusle/kfactor.htm, accessed March 29, 2026.

U.S. Environmental Protection Agency. Website. Available at: http://water.epa.gov/aboutow/owm/upload/2004_07_07_septics_septic_2002_osdm_all.pdf, accessed March 9, 2026.

United States Geological Survey. *The Shake Out Scenario*. 2008. Available online at: http://pubs.usgs.gov/of/2008/1150/of2008-1150.pdf, accessed April 2, 2026

USGS. *2019 Ridgecrest, California Earthquake Sequence.* 2021. Available online at: https://earthquake.usgs.gov/storymap/index-ridgecrest.html, accessed on March 30, 2026.

Barstow J. A., *Geologic maps of the Knob Hill, Pine Mountain, Oil Center and Bena quadrangles, California*. USGS Open File Report 86-188. 1986.

Sheehan, J. R., *Tectonic Evolution of the Bakersfield Arch, Kern County, California, in P. Bell, ed., Structure and Stratigraphy of the East Side San Joaquin Valley, Part II: Structure and Stratigraphy,* Pacific Section American Association of Petroleum Geologists Guidebook No. 56, pages 10-17. 1986.

4.8 Greenhouse Gases

American Meteorological Society, *Atmospheric Rivers as Drought Busters on the U.S. West Coast*, April 2013.

California Air Resources Board (CARB). Current Litigation. Available online at: https://ww2.arb.ca.gov/current-litigation, accessed April 30, 2026.

California Air Resources Board, *California's 2017 Climate Change Scoping Plan.* November 2017.

California Air Resources Board, *California's 2017 Climate Change Scoping Plan.* November 2017.

California Air Resources Board, *California's 2017 Climate Change Scoping Plan*. November 2017.

California Air Resources Board, *California's 2022 Climate Change Scoping Plan.* November 2022.

California Air Resources Board, Current California GHG Emission Inventory Data, 2000-2023 GHG Inventory (2021 Edition), https://ww2.arb.ca.gov/ghg-inventory-data. Accessed April 2022.

California Department of Finance, "E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2025." Available online at: https://dof.ca.gov/Forecasting/Demographics/Estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2025/, accessed April 1, 2026.

California Department of Finance, "Gross Domestic Product." Available online at: https://dof.ca.gov/Forecasting/Economics/economic-indicators/gross-state-product/, accessed April 1, 2026.

California Department of Public Health. 2012. Climate Action for Health: Integrating Public Health into Climate Action Planning. Available online at: https://www.cdph.ca.gov/Programs/OHE/CDPH%20Document%20Library/CCHEP-General/CDPH-2012-Climate-Action-for-Health_accessible.pdf, accessed April 2, 2026.

California Environmental Protection Agency, California Air Resources Board, Short-Lived Climate Pollutant Reduction Strategy, March 2017. Available online at: https://ww2.arb.ca.gov/sites/default/files/2020-07/final_SLCP_strategy.pdf, accessed April 2, 2026.

California Legislative Information, Senate Bill No. 100. Available online at: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB100, accessed April 15, 2022.

California Natural Resources Agency, *2009 California Climate Adaption Strategy.* 2009.

California Natural Resources Agency, *Safeguarding California Plan: 2018 Update*, January 2018. Available online at: https://resources.ca.gov/-/media/CNRA-Website/Files/Initiatives/Climate/safeguarding-california-plan-2018-update.pdf, accessed April 1, 2026.

California Resources Corporation, Carbon TerraVault. Available online at: https://www.crc.com/static-files/8de6ae5b-0744-44b9-a912-a4380b5d03e1, accessed April 1, 2026.

CARB, *2022 Scoping Plan for Achieving Carbon Neutrality*, 2022. Available online at: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf, accessed April 1, 2026.

CARB, *California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit*, 2007.

CARB, *California Cap-and-Trade Program, Resolution 10-42*, 2010.

CARB, *Consideration of Recommendations for Discrete Early Actions for Climate Change Mitigation in California*, 2007.

CARB, *Consideration of Recommendations for Discrete Early Actions for Climate Change Mitigation in California*, 2007.

CARB, First Update to the Climate Change Scoping Plan, 2014.

CARB, *Initial Statement of Reasons for Proposed Regulation for the Management of High Global Warming Potential Refrigerants for Stationary Sources*, 2009.

CARB, SB 375 Regional Plan Climate Targets. Available online at: https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets, accessed April 2, 2026.

City of Taft, *2017 Climate Action Plan*. March 2017.

Easterling, D.R., Kunkel, K.E., Wehner, M.F., and Sun, L., *Detection and Attribution of Climate Extremes in the Observed Record.* March 2016.

Energy Policy Act of 2005. Available online at: https://www.energy.gov/sites/prod/files/edg/media/HR6PP%281%29.pdf, accessed April 27, 2022.

Fulton, J., and Cooley, H., *The Water Footprint of California's Energy System, 1990-2012.* 2015.

Hagos, S., Leung, L.R., Yoon, JH., Lu, J., and Gao, Y., *A projection of changes in landfalling atmospheric river frequency and extreme precipitation over western North America from the Large Ensemble CESM simulations.* January 2016.

Howitt, R., Medellin-Azuara, J., MacEwan, D., Lund, J., and Summer, D. *Economic Analysis of 2014 Drought for California Agriculture.* 2014.

http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf, accessed April 17, 2018

IPCC, *Climate Change 2021 The Physical Science Basis.* 2021. Available online at: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_FullReport.pdf, accessed April 1, 2026.

IPCC, *Climate Change 2022: Mitigation of Climate Change.* 2022. Available online at: https://www.ipcc.ch/report/ar6/wg3/, accessed April 1, 2026.

Kern COG, Communitywide Greenhouse Gas Emission Inventory 2005 Baseline Year - 2020 Forecast. 2012. https://www.kerncog.org/wp-content/uploads/2011/09/kc_ghg_final_report_052012.pdf, accessed April 1, 2026.

Kern Council of Governments Project Delivery Policies and Procedures, Updated May 2023. Available online at: https://www.kerncog.org/wp-content/uploads/2012/12/Draft_2023_PIP.pdf, accessed April 2, 2026.

Kossin, James P., NOAA/National Centers for Environmental Information, *Past and Projected Changes in Western North Pacific Tropical Cyclone Exposure*. July 2016.

National Academies of Sciences, Engineering, and Medicine, *Attribution of Extreme Weather Events in the Context of Climate Change.* 2016.

National Highway Traffic Safety Administration, Corporate Average Fuel Economy, 2025. Available online at: https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy#75896, accessed April 1, 2026.

Natural Resources Defense Council, *Paris Climate Agreement: Everything You Need to Know*, January 23, 2025. Available online at: https://www.nrdc.org/stories/paris-climate-agreement-everything-you-need-know, accessed April 1, 2026.

NOAA Global Monitoring Laboratory. Chlorofluorocarbons (CFCs). Available online at: https://gml.noaa.gov/hats/publictn/elkins/cfcs.html, accessed April 1, 2026.

OEHHA, *Indicators of Climate Change in California.* Available online at: https://oehha.ca.gov/climate-change/document/indicators-climate-change-california, accessed April 1, 2026.

Office of Legislative Counsel of California, *The California Global Warming Solutions Act of 2006 (AB 32)*, 2006.

Payne, Ashley and Magnusdottir, Gudrun, *An Evaluation of Atmospheric Rivers over the North Pacific in CMIP5 and their response to warming under RCP 8.5.* November 2015.

Politico, "So long, Paris: US officially leaves landmark climate pact," January 1, 2026. Available online at: https://www.politico.com/news/2026/01/27/so-long-paris-u-s-officially-leaves-landmark-climate-pact-00746628, accessed April 1, 2026.

San Joaquin Valley Air Pollution Control District, *Communitywide Greenhouse Gas Emission Inventory 2005 Baseline Year – 2020 Forecast.* May 2012.

Sobel, A.H., Camargo, S.J., Hall, T.M., Lee, C-Y., Tippett, M.K., and Wing, A.A., *Human Influence on Tropical Cyclone Intensity.* 2016.

U.S. Department of Agriculture Forest Service, *2013-2027 National Insect and Disease Forest Risk Assessment.* January 2014, available online at: https://research.fs.usda.gov/treesearch/57824, accessed, April 1, 2026.

U.S. Department of Energy, Energy Information Administration, "Emissions of Greenhouse Gases in The U.S., 2011. Available online at: https://www.eia.gov/environment/emissions/ghg_report/ghg_gwp.php, accessed April 1, 2026/.

U.S. Department of Transportation, The Federal Highway Administration's Climate Change & Extreme Weather Vulnerability Assessment Framework, December 2012. Available online at: https://rosap.ntl.bts.gov/view/dot/27118, accessed April 28, 2026

U.S. Environmental Protection Agency (U.S. EPA), Sulfur Hexafluoride (SF_6) Basics. Available online at: https://www.epa.gov/eps-partnership/sulfur-hexafluoride-sf6-basics, accessed April 1, 2026.

U.S. Environmental Protection Agency, "Glossary of Climate Change Terms." Available online at https://19january2017snapshot.epa.gov/climatechange/glossary-climate-change-terms_.html, accessed April 1, 2026.

U.S. Environmental Protection Agency, Affordable Clean Energy Rule. Available online at: https://www.epa.gov/stationary-sources-air-pollution/affordable-clean-energy-rule, accessed April 28, 2026.

U.S. Environmental Protection Agency, EPA Finalizes Affordable Clean Energy Rule, Ensuring Reliable, Diversified Energy Resources while Protecting the Environment, 2019. Available online at: https://www.bing.com/search?q=EPA+Finalizes+Affordable+Clean+Energy+Rule%2C+Ensuring+Reliable%2C+Diversified+Energy+Resources+while+Protecting+the+Environment&cvid=715e95acf42040369695afd4dc151b63&gs_lcrp=EgRlZGdlKgYIABBFGDkyBggAEEUYOTIGCAEQRRhAMggIAhDpBxj8VTIHCAMQ6wcYQNIBBzczNmowajSoAgiwAgE&FORM=ANAB01&PC=HCTS, accessed April 1, 2026.

U.S. Environmental Protection Agency, EPA Restoration of California Waiver Will Support State Climate Action, Improve Air Quality, and Advance our Electric Vehicle Future. Available Online at: https://www.epa.gov/newsreleases/what-they-are-saying-epa-restoration-california-waiver-will-support-state-climate, accessed April 1, 2026.

U.S. Environmental Protection Agency, Final Rule: Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles. Available: https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-multi-pollutant-emissions-standards-model , accessed April 14, 2026.

U.S. Environmental Protection Agency, Final Rule: Rescission of the Greenhouse Gas Endangerment Finding and Motor Vehicle Greenhouse Gas Emission Standards Under the Clean Air Act, March 4, 2026. Available online at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-rescission-greenhouse-gas-endangerment, accessed April 1, 2026.

U.S. Environmental Protection Agency, Summary of the Energy Policy Act. Available online at: https://www.epa.gov/laws-regulations/summary-energy-policy-act, accessed April 1, 2026.

U.S. Environmental Protection Agency. Final Rule: Rescission of the Greenhouse Gas Endangerment Finding and Motor Vehicle Greenhouse Gas Emission Standards Under the Clean Air Act. Available online at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-rescission-greenhouse-gas-endangerment

U.S. Environmental Protection Agency. Greenhouse Gas Standards and Guidelines for Fossil Fuel-Fired Power Plants. Available online at: https://www.epa.gov/stationary-sources-air-pollution/greenhouse-gas-standards-and-guidelines-fossil-fuel-fired-power , accessed April 30, 2026.

U.S. Environmental Protection Agency. Rulemaking Notices for GHG Reporting. Available online at: https://www.epa.gov/ghgreporting/rulemaking-notices-ghg-reporting

U.S. EPA, *Potential for Reducing Greenhouse Gas Emissions in the Construction Sector*. February 2009.

U.S. EPA. Protecting Our Environment by Reducing Use of HFCs. Available online at: https://www.epa.gov/climate-hfcs-reduction, accessed April 1, 2026.

United Nations, Paris Agreement, 2015. Available:

US Environmental Protection Agency, *Overview of Greenhouse Gases.* Available online at: https://www.epa.gov/climateimpacts, accessed April 1, 2026.

World Resources Institute, Historical GHG Emissions, 2023. Available online at: https://www.climatewatchdata.org/ghg-emissions?end_year=2023&regions=WORLD&sectors=total-excluding-lulucf&start_year=1990, accessed April 1, 2026. Excludes emissions and removals from land use, land-use change, and forestry (LULUCF).

4.9 Hazards and Hazardous Materials

Department of California Highway Patrol. 2023. Inhalation Hazardous Shipments: Routes and Stopping Places. Available at: https://www.chp.ca.gov/siteassets/forms/hph_84.5_2019_all_ada.pdf , accessed April 3, 2026.

U.S. Department of Transportation, *Hazmat Summary by Transportation Phase* , 2025. Available online at: https://portalpublic.phmsa.dot.gov/analytics/saw.dll?Portal , accessed March 25, 2026.

US Environmental Protection Agency, Underground Storage Tank Finder. Available at: https://www.epa.gov/ust/ust-finder , accessed April 3, 2026.

US Environmental Protection Agency, *Underground Storage Tanks*. Available at: http://www.epa.gov/oust/, accessed April 3, 2026.

West Virginia Department of Environmental Protection, *UST Resources*, 2026. Available online at: https://dep.wv.gov/WWE/ee/tanks/ust/Pages/USTRelatedLinks.aspx, accessed on April 3, 2026.

U.S. Department of Transportation, Hazmat Summary by Transportation Phase , 2025. Available online at: https://portalpublic.phmsa.dot.gov/analytics/saw.dll?Portal , accessed March 25, 2026.

Kern County Municipal Code, Title 17, Section 17.32.002 and 17.332.003.

4.10 Hydrology and Water Quality

Bureau of Reclamation, *Reclamation increases Central Valley Project 2026 water supply allocations,* March 24, 2026. Available at: https://www.usbr.gov/newsroom/news-release/5305 , accessed April 17, 2026

Bureau of Reclamation, *Reclamation increases Central Valley Project 2026 water supply allocations,* March 24, 2026. Available at: https://www.usbr.gov/newsroom/news-release/5305 , accessed April 17, 2026

California Department of Water Resources. 2025. *The 2025 Draft State Water Project Delivery Capability Report.* /https://water.ca.gov/-/media/DWR-Website/Web-Pages/Library/Modeling-And-

Analysis/Files/Modeling-and-Analysis-PDFs/Draft_DCR25_MainReport_final_2025-12-17.pdf, accessed April 2026.

California State Water Board. *Groundwater Information Sheet.* 2017. Arsenic. Available online at: https://www.waterboards.ca.gov/gama/docs/coc_arsenic.pdf, accessed on April 3, 2026.

Central Valley Regional Water Quality Control Board, *CV-Salts,* available at: https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/. Accessed April 21, 2026.

Coachella Valley Water District, *California's State Water Project*, 2026. Available online at: https://www.cvwd.org/170/Californias-State-Water-Project, accessed on April 21, 2026.

Drought Conditions in California from 2000-Present. NOAA. Available online at: https://www.drought.gov/states/california, accessed on April 11, 2026.

KCWA. 2021. *Comprehensive Annual Financial Report- FY Ended June 30, 2020. https://www.auditor.co.kern.ca.us/cafr/24CAFR.pdf*

Kern County Water Agency (KCWA), *2020 Tulare Lake Basin Portion of Kern County IRWMP*, Section 2.6.3.2 Minor Streams. Available online at: http://www.kernirwmp.com/documents/KIRWMP_Update_FINAL%202020-0311.pdf, accessed on April 11, 2026.

Kern Water Bank Authority, *Frequently Asked Questions.* Available at: https://www.kwb.org/faqs/, accessed April 17, 2026.

Lake Isabella Water Level. Lakes Online. Available online at: http://isabella.uslakes.info/Level/, accessed on April 2026.

Mayer, *This year the Kern River was its second driest in recorded history, but is it reason to worry?* 2021. Available online at: www.bakersfield.com/news/this-year-the-kern-river-was-its-second-driest-in-recorded-history-but-is-it/article_62830f94-2545-11ec-ac47-d7d2cc70e12d.html, accessed on April 11, 2026.

Public Policy Institute of California. 2017. *California's Latest Drought*. https://www.ppic.org/publication/droughts-in-california/ , accessed April 17, 2026.

Scheuler, T. R. (1994). The Importance of Imperviousness. *Watershed Protection Techniques 1(3)*: 100-111.

SWRCB 2011.

U.S. Army Corps of Engineers (USACE). 2015. *Final Compensatory Mitigation Rule.*

US Department of Energy. *Moab By the Numbers*. Available online at: https://www.energy.gov/em/moab/articles/moab-umtra-numbers

US Drought Monitor, *California*, 2026. Available online at: https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?CA, accessed April 11, 2026

Water Association of Kern County, *Urban Water Use*. Available online at: https://www.wakc.com/water-overview/water-usage/urban-water-use/, accessed on April 21, 2026.

Water in Kern County. Water Association of Kern County. Available online at: https://www.wakc.com/water-overview/kern-county/, accessed on April 17, 2026

4.11 Land Use Planning

7 USC 4201-4209 & 7 USC 658

Bakersfield.com, *Destination: Boron ... History, science, a deep pit, big sky and great burger*, January 29, 2022. Available online at https://www.bakersfield.com/bakersfield-life/destination-boron-history-science-a-deep-pit-big-sky-and-great-burger/article_52aec5d2-719d-11ec-b207-97cd38c33bba.html, accessed on March 30, 2026.

California Legislative Information. Article 10.6. Housing Elements [65580 – 65589.11].

California Legislative Information. Senate Bill No. 375.

California State University Bakersfield, *Fueling Kern County*, 2026. available at: https://www.csub.edu/ceer/_files/CEERFuelingKernCountyReport.pdf , accessed April 30, 2026.

Cleanview, "Solar Projects in California." Available online at: https://cleanview.co/planned-solar-projects/california, accessed March 30, 2026.

Desert Renewable Energy Conservation Plan. 2022. *Kern County Renewable Energy Fact Sheet.* https://www.energy.ca.gov/programs-and-topics/programs/desert-renewable-energy-conservation-plan, accessed March 30, 2026.

Kern County General Plan 2040, Circulation Element. Available online at: https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGPChp2Circulation.pdf, accessed on April 30, 2026.

Kern County, *Annual Crop Report 2024.* Available online at: http://www.kernag.com/dept/news/2025/2024_Kern_County_Crop_Report.pdf, accessed on March 27, 2026.

U.S. Census, State and County Quickfacts. 2025. Available online at: https://www.census.gov/quickfacts/fact/table/kerncountycalifornia/PST045225 , accessed April 30, 2026.

U.S. Department of the Interior (DOI). Oil Production in California-Kern County. 2024. Available online at: https://revenuedata.onrr.gov/explore/?dataType=Production&period=Calendar+Year&mapLevel=State&offshoreRegions=false&location=NF%2CNA%2CCA%2C06029&year=2024, accessed March 30, 2026.

4.12 Mineral Resources

California Department of Conservation (DOC), California's Non-Fuel Mineral Production 2022, August 2024. Available online at: https://conservation.ca.gov/cgs/documents/publications/bulletins/B_232-California-Non-fuel-Mineral-Production-2022-a11y.pdf, accessed April 6, 2026.

California Department of Conservation (DOC), California's Non-Fuel Mineral Production 2022, August 2024. Available online at: https://conservation.ca.gov/cgs/documents/publications/bulletins/B_232-California-Non-fuel-Mineral-Production-2022-a11y.pdf, accessed April 6, 2026.

California Department of Conservation, Mineral Resource Zones for Kern County. Available online at: https://databasin.org/datasets/26c92d3ecbe541ec81451f9de4e1e0e4/, accessed April 6, 2026.

California Department of Conservation, *Surface Mining and Reclamation Act of 1975 Statues and Regulations*, July 2018. Available online at: https://www.conservation.ca.gov/smgb/Regulations/Documents/SMARA-statutes-regs-7-2018.pdf, accessed April 30, 2026.

California Legislative Information. 1965. *ARTICLE 5. Authority for and Scope of General Plans [65300-65303.4].*

Department of Conservation, California Geological Survey, *Aggregate Sustainability in California*, 2026. Available online at: https://conservation.ca.gov/cgs/Documents/Publications/Map-Sheets/MS_052-Aggregate-Sustainability-2026-Supplement-a11y.pdf, accessed April 6, 2026.

Department of Conservation, California Geological Survey, *Aggregate Sustainability in California*, 2026. Available online at: https://conservation.ca.gov/cgs/Documents/Publications/Map-Sheets/MS_052-Aggregate-Sustainability-2026-Supplement-a11y.pdf, accessed April 6, 2026.

Department of Conservation, California Geological Survey, *Aggregate Sustainability in California*, 2026. Available online at: https://conservation.ca.gov/cgs/Documents/Publications/Map-Sheets/MS_052-Aggregate-Sustainability-2026-Supplement-a11y.pdf, accessed April 6, 2026.

Kern County Planning and Natural Resources Department. *Kern County Oil and Gas Permitting Program Annual Progress Report,* December 2024. Available online at: https://psbweb.kerncounty.com/planning/pdfs/oil_gas/kern_oil_gas_annual_progress_report_2024.pdf, accessed April 6, 2026.

Kern County, General Plan: Volume 1 – Draft Environmental Impact Report, January 2004. Available online at: https://psbweb.kerncounty.com/planning/pdfs/kcgp/KCGP_RPEIR_vol1.pdf, accessed April 30, 2026.

Kern Economic Development Corporation, *Kern County: Energy Capital of the West,* 2025. Available online at: https://kernedc.com/wp-content/uploads/2025/10/Kern-EDC-2025-Energy-Industry-Fact-Sheet.pdf, accessed April 6, 2026.

Kern Economic Development Corporation, *Strategic Plan 2025-2028.* Available online at https://kernedc.com/wp-content/uploads/2025/08/Strategic-Plan-2025-Final.pdf, accessed April 6, 2026.

Mindat.org, *Map Showing Location of Mines and Mineral Deposits, Kern County*. Available online at: https://www.mindat.org/photo-805619.html, accessed on April 6, 2026.

ShaleXP, Oil and Gas Activity in Kern County, CA, November 2025. Available online at: https://www.shalexp.com/california/kern-county, accessed April 30, 2026.

U.S. Congress. *S. 1894 – Indian Mineral Development Act of 1982*. Available online at: https://www.congress.gov/bill/97th-congress/senate-bill/1894, accessed April 6, 2026.

4.13 Noise

Beranek, L. L. 1988. *Noise and Vibration Control* (pp. 182). New York: McGraw-Hill.

Federal Transit Administration. *Transit Noise and Vibration Impact Assessment.* 2006.

U.S. Department of Transportation, Federal Highway Administration, Highway Noise Mitigation, (Springfield, Virginia: U.S. Department of Transportation, Federal Highway Administration, September 1980), p. 18.

USGS, *The U.S. Wind Turbine Database.* Available online at: https://energy.usgs.gov/uswtdb/viewer/#9.43/35.1636/-118.2884 , accessed April 8, 2026.

4.14 Population, Housing & Employment

California Department of Finance (DOF), *E-5 County/State Population and Housing Estimates, 2020-2025.* Available online at: https://dof.ca.gov/Forecasting/Demographics/Estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2025/, accessed on April 29, 2026.

California Department of Finance (DOF), *E-5 County/State Population and Housing Estimates, 2020-2025.* Available online at: https://dof.ca.gov/Forecasting/Demographics/Estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2025/, accessed on April 29, 2026.

California Employment Development Department. Labor Market Information, Bakersfield MSA, Industry Employment & Labor Information – by Annual Average *January 2026 Benchmark*. 2026. Available online at: https://www.labormarketinfo.edd.ca.gov/file/lfmonth/bake$pds.pdf.

County of Kern, *2024-2031 Housing Element Update-Volume 1,* May 2025. Available online at: https://psbweb.kerncounty.com/planning/pdfs/he/KCHE_2024-2031_Vol1_May2025.pdf, accessed April 29, 2026.

Godbe Research, 2025. Available online at: https://www.kerncog.org/wp-content/uploads/2025/10/community_survey_2025.pdf

The Moving Ahead for Progress in the 21st Century Act (MAP-21) was enacted in 2012 (PL 112-141).

US Census. American FactFinder Community Facts- Kern County. 2020. Available online at: https://www.census.gov/quickfacts/kerncountycalifornia

4.15 Public Services

4.15.1 Fire Protection

Assembly Bill No. 9. California State Legislature. September 24, 2021. Available online at: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB9, accessed on April 3, 2026.

Bureau of Land Management, *BLM Fire Program.* Available online at: https://www.blm.gov/programs/fire, accessed April 29, 2026.

Bureau of Land Management. 2026. *What We Manage Nationally*. Available online at: https://www.blm.gov/about/what-we-manage/national , accessed April 2, 2026.

CAL FIRE, Cooperative Efforts. Available online at: https://www.fire.ca.gov/what-we-do/fire-protection/cooperative-efforts/, accessed April 2, 2026.

CAL FIRE. 2024, Wildfire Activity Statistics, 2024. Available online at: https://34c031f8-c9fd-4018-8c5a-4159cdff6b0d-cdn-endpoint.azureedge.net/-/media/calfire-website/our-impact/fire-statistics/2024_redbook_final.pdf?rev=d0681f53a38b40dc968658ab8852a920&hash=B582200D6531921DC40B3AB1976D1180, accessed April 2, 2026.

California Department of Forestry and Fire Protection (CAL FIRE), *What We Do – Fire Protection.* Available online at: https://www.fire.ca.gov/what-we-do/fire-protection, accessed April 2, 2026.

City of Bakersfield. *Fire Department*. Available online at: https://www.bakersfieldcity.us/233/Fire/, accessed April 3, 2026.

County of Kern County Fire Department, County of Kern 2020 Multi-Jurisdictional Hazard Mitigation Plan, April 9, 2021. Available online at: https://kernplanning.com/2020-kern-county-multi-jurisdictional-hazard-mitigation-plan/, accessed May 14, 2026.

Federal Resister. Executive Order 13855. Available online at: https://www.federalregister.gov/documents/2019/01/07/2019-00014/promoting-active-management-of-americas-forests-rangelands-and-other-federal-lands-to-improve, accessed April 3, 2026.

Kern County Fire Department, Department Profile. Available online at: https://kerncountyfire.org/about-kcfd/, accessed April 2, 2026.

Kern County Fire Department, *Divisions*. Available online at: https://kerncountyfire.org/about-kcfd/divisions/, accessed April 2, 2026.

Kern County Fire Department, Emergency Plans. Available online here: https://kerncountyfire.org/education-safety/emergency-plans/, accessed April 2, 2026.

Kern County Fire Department, *Kelso Creek Communities Flood Warning and Notification Contingency Plan,* December 2013. Available online at: https://kerncountyfire.org/wp-content/uploads/Kelso-Creek-Emergency-Operations-Plan.pdf, accessed April 3, 2026.

Kern County Fire Department, *Lake Isabella Dam,* December 2009.

Kern County Fire Department, Sheltering Operations Plan, 2017. Available online at: https://kerncountyfire.org/education-safety/emergency-plans/, accessed May 14, 2026.

Kern County Fire Department. 2021. Annual Report. https://kerncountyfire.org/wp-content/uploads/2021-Annual-Report.pdf , accessed April 30, 2026.

Kern County Fire Department. *Terrorism Response and Recovery Contingency Plan,* December 11, 2003. Available online at: https://kerncountyfire.org/jsp-uploads/Terrorism-Plan.pdf, accessed April 3, 2026.

National Park Service, National Park System. Available online at: https://www.nps.gov/aboutus/national-park-system.htm, accessed April 2, 2026.

National Park Service, *Wildland Fire Fact Sheet*, May 2025. Available online at: https://www.nps.gov/orgs/1965/upload/wildland-fire-fact-sheet.pdf, accessed April 2, 2026.

4.15.2 Police Protection

KCSO, *Cadet Unit,* 2026. Available online at: http://www.kernsheriff.org/explorers, accessed April 3, 2026.

KCSO, *Citizen Volunteers,* 2026. Available online at: https://www.kernsheriff.org/Citizen_Volunteers, accessed April 3, 2026.

KCSO, Court and Transportation Services, 2026. http://www.kernsheriff.com/court_services, accessed November 29, 2021.

KCSO, *Detentions,* 2026. Available online at: https://www.kernsheriff.org/Detentions, accessed April 3, 2026.

KCSO, *Inmate Services,* 2026. Available online at: http://www.kernsheriff.org/inmate_services, accessed April 3, 2026.

KCSO, Maximum/Medium Security, 2026. Available online at: https://www.kernsheriff.org/Max_Med_Security, accessed April 3, 2026.

KCSO, Metro Patrol, 2026. Available online at: https://www.kernsheriff.org/Metro_Patrol, accessed April 3, 2026.

KCSO, Pretrial Facility. 2026. Available online at: http://www.kernsheriff.org/pre_trial_facility, accessed April 3, 2026.

KCSO, Reserves, 2026. Available online at: https://www.kernsheriff.org/Reserves, accessed April 3, 2026.

KCSO, *Search and Rescue,* 2026. Available online at: http://www.kernsheriff.org/search_rescue, accessed April 3, 2026.

Kern County Sheriff's Office (KCSO), *History*, 2026. Available online at: https://www.kernsheriff.org/History, accessed April 3, 2026.

Kern County Sherriff, *Kern County Sherriff's Office*, available at: https://www.kernsheriff.org/ accessed April 30, 2026.

4.15.3 Schools

California Department of Education, *Data Quest – 2024-25 Enrollment by Ethnicity and Grade,* 2026. Available online at: https://dq.cde.ca.gov/dataquest/dqcensus/EnrEthGrd.aspx?cds=15&agglevel=county&year=2024-25, accessed April 3, 2026.

California Department of Education, *Data Quest – 2024-25 Enrollment by Ethnicity and Grade,* 2026. Available online at: https://dq.cde.ca.gov/dataquest/dqcensus/EnrEthGrd.aspx?cds=15&agglevel=county&year=2024-25, accessed April 3, 2026.

California School Dashboard, Bakersfield City School District, available at: https://www.caschooldashboard.org/reports/15633210000000/2025, accessed April 30, 2026.

Kern County Superintendent of Schools, About, available at: https://kern.org/about/, accessed April 3, 2026.

4.15.4 Library Services

Kern County Library, *About*. Available online at: https://kerncountylibrary.org/about-the-kern-county-library/, accessed April 3, 2026.

Kern County, *Draft Kern County Public Facilities Impact Fee Study*. https://efiling.energy.ca.gov/GetDocument.aspx?tn=48738&DocumentContentId=47990, accessed April 3, 2026.

Kern County Grand Jury, Health, Education, And Social Services, 2017. Available online at, https://www.kerncounty.com/home/showpublisheddocument/5378/637388655771830000, accessed April 3, 2026.

Kern County Library, *Facilities Master Plan to the Year 2020,* February 12, 2002. Available online at: https://www.kerncountylibrary.org/Assets/pdf/msf2020.pdf, accessed April 30, 2026.

4.15.5 Parks and Recreation

California Recreational Trails Plan, *Progress Report,* 2011. Available online at: https://www.parks.ca.gov/pages/795/files/2011%20progress%20report%20summary%20final.pdf, accessed April 3, 2026.

City of Bakersfield, Recreation and Parks Master Plan, 2024. Available at: https://content.civicplus.com/api/assets/ca-bakersfield/fc263e0a-13ee-48a2-948b-89157d1630ab?cache=1800 , accessed April 30, 2026.

City of Bakersfield, Recreation and Parks Master Plan, 2024. Available at: https://content.civicplus.com/api/assets/ca-bakersfield/fc263e0a-13ee-48a2-948b-89157d1630ab?cache=1800 , accessed April 30, 2026.

Kern County, *Kern County GIS,* 2026. Available online at: https://maps.kerncounty.com/H5/index.html?viewer=KCPublic, accessed on April 6, 2026.

Kern County, *Parks and Recreation Master Plan,* May 2010. Available online at: https://www.kerncounty.com/home/showpublisheddocument/2148/637127126894370000, accessed on April 6, 2026.

Kern County, *Parks and Recreation Master Plan,* May 2010. Available online at: https://www.kerncounty.com/home/showpublisheddocument/2148/637127126894370000, accessed on April 6, 2026.

4.16 Transportation and Traffic

Annual Report of Financial Transaction-Transit, 2015 – 2020; Transit Operators State Controllers Report

California Air Resources Board. *CARB 2022 Scoping Plan* (December 2022). Available online at: https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf , accessed April 30, 2026

California Department of Transportation. California Sustainable Freight Action Plan. https://dot.ca.gov/programs/transportation-planning/division-of-transportation-planning/strategic-freight-planning/csfap , accessed April 15, 2026.

Caltrans. Local Review Safety Review Practitioners Guidance, available at: https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/202402-ldr-safety-review-practitioners-guidance-a11y.pdf ,accessed April 30, 2026.

Caltrans. *Strategic Management Plan 2024-2028*. Available online at: https://dot.ca.gov/-/media/dot-media/programs/risk-strategic-management/documents/2024-28-caltrans-strategic-plan-final-a11y.pdf , accessed April 30, 2026.

Government Accountability Office, *Truck Weight and Its Effect on Highways*, July 1979. Available at: https://www.gao.gov/products/109954 , accessed April 17, 2026.

Governor's Office of Planning and Research. *Technical Advisory – On Evaluating Transportation Impacts in CEQA*. Available online at: http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf, accessed July 25, 2019.

International Labor Organization, Basics of Chemical Safety. 2004. Available online at: https://www.ilo.org/legacy/english/protection/safework/cis/products/safetytm/transpo.htm, accessed April 26, 2026.

Kern COG, *Monthly Ridership*, available at: https://www.kerncog.org/wp-content/uploads/2025/09/transit_monthly_ridership.pdf , accessed April 17, 2026.

Kern Council of Governments, *Project Delivery*, available at: https://www.kerncog.org/wp-content/uploads/2019/03/project_selection_policy_20190321.pdf , accessed April 17, 2026.

San Juaquin Valley Regional Policy Council, Inter-Regional Goods Movement, 2026. Available at: https://sjvcogs.org/valleywide_activities/good-movement/ , accessed April 30, 2026.

The Hill, "California finalizes fuel efficiency deal with five automakers, undercutting Trump." 2020 Available online at: https://thehill.com/policy/energy-environment/512414-california-finalizes-fuel-efficiency-deal-with-five-automakers/, accessed April 16, 2026.

U.S. Department of Transportation Federal Highway Administration, *U.S. Transportation Secretary Sean P. Duffy Rescinds Memos Issued By Biden Administration That Injected Social Justice, Radical Environmental Agenda Into Infrastructure Funding Decisions,* March 10, 2025. Available at: https://highways.dot.gov/newsroom/us-transportation-secretary-sean-p-duffy-rescinds-memos-issued-biden-administration

4.17 Utilities and Service Systems

Bear Valley Community Services District, Wastewater Treatment Process. Available online at: https://www.bvcsd.org/wastewater-treatment-process, accessed April 30, 2026.

Cal Recycle, *Countywide Jurisdiction Diversion/Disposal Progress Report*, 2024. Available online at: https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/DiversionDisposal, accessed March 31, 2026.

Cal Recycle. *2024 Landfill Summary Tonnage Report*. Available online at: https://www2.calrecycle.ca.gov/LandfillTipFees/, accessed on March 31, 2026.

California State Water Resources Control Board, *About Us.* Available online at: https://www.waterboards.ca.gov/about_us/, accessed March 31, 2026.

California Water Boards. Fact Sheet: Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy). Available online at: https://www.waterboards.ca.gov/water_issues/programs/owts/owts_policy.html, accessed March 31, 2026.

CalRecycle, Estimated Solid Waste Generation Rates. Available online at: https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates, accessed March 31, 2026.

CalRecycle, State of Disposal and Recycling in California, 2024. Available online at: https://calrecycle.ca.gov/stateofreport/, accessed March 31, 2026.

City of Shafter, *Urban Water Management Plan Update for 2020*, May 2021. Available online at: https://www.shafter.com/DocumentCenter/View/4963/Shafter-2020-UWMP---Final-Draft, accessed March 31, 2026.

City of Tehachapi. *2015 Tehachapi Regional Urban Water Management Plan,* https://tccwd.specialdistrict.org/files/7c9d0ac5c/combinepdf.pdf, accessed March 31, 2026.

Kern County Public Works, Sewer Information – What We Do. Available online at: https://www.kernpublicworks.com/services/development/sewer-information, accessed April 30, 2026.

Provost & Pritchard Consulting Group, *Water Treatment Plant Facility Plan, City of Ridgecrest, 2015. Available online at:* https://ridgecrest-ca.gov/DocumentCenter/View/223/Wastewater-Treatment-Plant-Facility-Plan-PDF?bidId=, accessed March 31, 2026.

U.S. Environmental Protection Agency, NPDES Stormwater Program. Available online at: https://www.epa.gov/npdes/npdes-stormwater-program, accessed March 31, 2026.

Water Education Foundation, *Regional Water Quality Control Boards in California*. Available online at: https://www.watereducation.org/aquapedia/regional-water-quality-control-boards-california, accessed March 31, 2026.

4.18 Wildfire

ABC 30, *I-5 over the Grapevine, Highway 58 remain closed following mud slides*, 2022. Available online at: https://abc30.com/drivers-trapped-on-gapevine-after-mudslide-kern-county-rain-storm/1035801/, accessed on April 8, 2026.

Bakersfield.com, *Erskine Fire Caused by Power Line, Fire Officials Say*, 2019. Available online at: https://www.bakersfield.com/news/erskine-fire-caused-by-power-line-fire-officials-say/article_bd1f7a02-bbc6-59e2-a47f-30fc7a99b744.html, accessed on April 8, 2026.

Building Codes, Kern County Fire Department. Available online at: https://kerncountyfire.org/fire-prevention/building-codes/, accessed on April 8, 2026.

Bureau of Land Management, *Central California District – French Fire*. 2021. Available online at: https://inciweb.nwcg.gov/incident/7813/, accessed on April 8, 2026.

Cal EOS, Remembering the Montecito Mudslides Three Years Later, January 8, 2021. Available online at: https://news.caloes.ca.gov/remembering-the-montecito-mudslides-two-years-later/, accessed on April 8, 2026..

CAL FIRE Office of the State Fire Marshal. 2022. *About the Office of State Fire Marshal*. Available online at: https://osfm.fire.ca.gov/about-us/, accessed April 8, 2026.

CAL FIRE, 2024 Incident Statistics Summary. Available online at: https://www.fire.ca.gov/our-impact/statistics, accessed April 2026.

Cal Fire, *Very High Fire Severity Hazard*. Available online at: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones , accessed on April 8, 2026.

CAL FIRE. Fire Hazard Severity Zones. Available online at: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones, accessed April 5, 2026

CAL FIRE. *Strategic Fire Plan for California*. Available online at: https://www.fire.ca.gov/about/cal-fire-strategic-plan-2024 , accessed April 8, 2026.

CalFire, Statistics. Available online at: https://www.fire.ca.gov/our-impact/statistics , accessed on April 8, 2026.

California Air Resources Board, Greenhouse Gas Emissions of Wildfires, Prescribed Fire, and Forest Management Activities,. Available online at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/pubs/ca_ghg_wildfire_forestmanagement.pdf

California Department of Finance, 2025–2026 State Budget – Climate and Wildfire Resilience Investments. Available online at: https://www.ebudget.ca.gov , accessed April 17, 2026.

California Department of Forestry and Fire Protection. About Us. Available online at https://www.fire.ca.gov/about-us/, accessed April 5, 2026.

California Legislative Information. 1982. *Article 9. Fire Hazards Severity Zones [4201-4204].*

California Legislative Information. 2008. *Assembly Bill No. 38*.

California Legislative Information. 2012. *Senate Bill No. 1241*.

California Legislative Information. 2015. *Assembly Bill No. 301*.

California Legislative Information. 2018. *Assembly Bill No. 2551*.

California Legislative Information. 2018. *Senate Bill No. 1079*.

California Legislative Information. 2019. *Assembly Bill No. 1054.*

California Legislative Information. 2019. *Senate Bill No. 99.*

California Legislative Information. *Division 12. Fires and Fire Protection*.

California Public Utilities Commission, Press Release December 14, 2017. *CPUC Adopts New Fire-Safety Regulations.* Available online at: http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M201/K352/201352402.PDF, accessed January 12, 2022.

Chapter 4-Safety Element. *Kern County General Plan*. 2009. Available online at: Kern County General Plan - Safety Element, accessed on April 8, 2026.

D. P. (2019). Observed impacts of anthropogenic climate change on wildfire in California. Earth's Future, 7, 892–910. Available online at: https://doi.org/10.1029/2019EF001210, accessed April 8, 2026.

Earth's Future, Observed impacts of anthropogenic climate change on wildfire in California. Earth's Future, 7, 892– 910. 2019. Available online at: https://doi.org/10.1029/2019EF001210 , accessed April 8, 2026.

Federal Response Plan, April 1999. Available online at: http://www1.mwcog.org/security/security/otherplans/fed_response_sum.pdf, accessed April 8, 2026.

FEMA. *Disaster Mitigation Act of 2000*. Available online at: https://www.fema.gov/emergency-managers/risk-management/hazard-mitigation-planning/regulations-guidance, accessed April 8, 2026

FEMA. *FEMA Region IX: Arizona, California, Hawaii, Nevada. & the Pacific Islands.* Available online at: https://www.fema.gov/fema-region-ix-arizona-california-hawaii-nevada-pacific-islands, accessed April 8, 2026.

Government Publishing Office. *Title 44: Emergency Management and Assistance*. Available online at: https://www.ecfr.gov/current/title-44/part-201, accessed April 8, 2026.

Governor's Office of Emergency Services. 2026. *California Disaster Assistance Act (CDAA)*. Available online at: https://www.caloes.ca.gov/cal-oes-divisions/recovery/public-assistance/california-disaster-assistance-act, accessed April 8, 2026.

Governor's Office of Emergency Services. *Strategic Plan Goals.* Available online at: https://www.caloes.ca.gov/cal-oes-divisions/about-cal-oes/strategic-plan, accessed April 8, 2026.

Hoa Ding, *Evacuation Challenges During the Palisades Fire: Initial Insights,* January 2026, available at: https://lewis.ucla.edu/research/evacuation-challenges-during-the-palisades-fire-initial-insights/ , accessed April 30, 2026.

Kern County Fire Department. Emergency Operations Plan. Available online at: https://kerncountyfire.org/education-safety/emergency-plans/, accessed on April 8, 2026.

Kern Valley Sun, *Storm Batters Kern River Valley with Mudslides, Flooding, and Snow Rescues*, October 14, 2025. Available online at: https://kernvalleysun.com/stories/storm-batters-kern-river-valley-with-mudslides-flooding-and-snow-rescues,37527 , accessed on April 8, 2026.

NASA Earth Observatory, *California Heatwave Fits a Trend*, September 6, 2020. Available online at: https://science.nasa.gov/earth/earth-observatory/california-heatwave-fits-a-trend-147256/#:~:text=The%20dry%2C%20hot%20conditions%20helped,intense%20heatwaves%20in%20Southern%20California. , accessed on April 6 2026.

New York Times, *Forced Out by Deadly Fires, Then Trapped in Traffic.* Available online at: https://www.nytimes.com/2018/11/11/us/california-fire-paradise.html, accessed April 8, 2026.

Office of Energy Infrastructure. *https://energysafety.ca.gov/what-we-do/electrical-infrastructure-safety/wildfire-mitigation-and-safety/wildfire-mitigation-plans/)*. Available online at: https://energysafety.ca.gov/what-we-do/electrical-infrastructure-safety/wildfire-mitigation-and-safety/wildfire-mitigation-plans/ accessed April 8, 2026.

Southern California Edison. *Public Safety Power Shutoff.* Available online at: https://www.sce.com/safety/wildfire/psps, accessed April 8, 2026.

Southern California Edison. *Public Safety Power Shutoffs.* Available online at: https://www.sce.com/safety/wildfire/psps, accessed April 8, 2026.

USGS, Post-wildfire Landslides Becoming More Frequent in Southern California, February 25, 2021. Available online at: https://www.usgs.gov/news/state-news-release/post-wildfire-landslides-becoming-more-frequent-southern-california#:~:text=Wildfires%20make%20the%20landscape%20more,dry%20soil%20and%20burned%20vegetation., accessed on April 8, 2026..

USGS, *What should I know about wildfires and debris flows?* Available online at: https://www.usgs.gov/faqs/what-should-i-know-about-wildfires-and-debris-flows, accessed on April 8, 2026..

Washington Post. *PG&E power lines to blame for California's deadliest wildfire ever, officials say.* Available online at: https://www.washingtonpost.com/nation/2019/05/15/camp-fire-caused-by-electrical-lines-owned-operated-by-pge-authorities-say/, accessed April 8, 2026.

Wildland Fire Management: The National Fire Plan. Available online at: https://www.forestsandrangelands.gov/documents/resources/reports/2007/nfp2007_budget_justification.pdf, accessed April 8, 2026.

Williams, A. P., Abatzoglou, J. T., Gershunov, A., Guzman-Morales, J., Bishop, D. A., Balch, J. K., & Lettenmaier,

5.0 Alternatives

State CEQA Guidelines § 15126.6[e][2]

APPENDIX 1.0

Notice of Preparation &
Comments on Notice of Preparation

Kern Council of Governments

NOTICE OF PREPARATION

To: Interested Agencies and Individuals

Subject: Notice of Preparation of a Program Environmental Impact Report for the 2026 Regional Transportation Plan

Date: April 21, 2025

Lead Agency: Kern Council of Governments
1401 19th Street, Suite 300
Bakersfield, California 93301

The Kern Council of Governments (Kern COG), as Lead Agency, is publishing this Notice of Preparation (NOP) to prepare a Program Environmental Impact Report (Program EIR) in accordance with the California Environmental Quality Act (CEQA) for the 2026 Regional Transportation Plan (2026 RTP) that also includes a Sustainable Communities Strategy (SCS). Kern COG is preparing an RTP as required by Section 65080 et seq, of Chapter 2.5 of the California Government Code, and federal guidelines pursuant to the federal surface transportation reauthorization, the Transportation Conformity in the Air Quality Attainment Plan per 40 CFR Part 51 and 40 CFR Part 93, and requirements set forth in Assembly Bill 32, The Global Warming Solutions Act of 2006, Senate Bill 375, The Sustainable Communities and Climate Protection Act of 2008, Senate Bill 32, California Global Warming Solutions Act of 2006: emissions limit (2016) and Assembly Bill 197, State Air Resources Board, greenhouse gases: regulations (2016). Consistent with these regulations Kern COG prepares an updated RTP every four years.

Kern COG is soliciting input from your agency as to the scope and content of the environmental issues to be included in the Program EIR. Kern COG seeks input from local, state, and federal agencies, as well as other interested parties, on issues relevant to the RTP. The project location, description, and the expected scope of environmental analysis are described on the following pages.

A scoping meeting for this project will be held at Kern COG's office (see location above), **Thursday, May 1, 2025, 4:30 to 6:30 PM**. Due to the time limits mandated by state law, your response must be sent **no later than 30 days** after the date of this notice.

Please send your response to Becky Napier, Deputy Director of Administration, either electronically to: napier@kerncog.org; or to the Lead Agency mailing address shown above. Please include a return address and the name of a contact person in your agency/organization.

1. INTRODUCTION

CEQA and its implementing regulations (*State CEQA Guidelines*) require Kern COG as the Lead Agency to prepare an EIR for any discretionary government action, including programs and plans that may cause

Kern Council of Governments
1401 19th Streets, Suite 300 Bakersfield CA 93301 661-635-2900 Facsimile 661-324-8215 TTY 661-832-7433 www.kerncog.org

significant environmental effects. The 2026 RTP is a regional planning document that provides policy guidance to local jurisdictions within Kern County. Specifically, the 2026 RTP necessitates preparation of a Program EIR, which is a "first-tier" CEQA document designed to consider "broad policy alternatives and program wide mitigation measures" (*State CEQA Guidelines* Sec. 15168). The programmatic environmental analysis will evaluate environmental effects, such as direct and indirect effects, growth-inducing impacts, and cumulative impacts, and will include all appropriate feasible mitigation measures to offset any identified potentially significant adverse environmental effects. In addition, the Program EIR will supply the foundation for subsequent, site-specific environmental reviews that will be conducted by implementation agencies, as projects in the RTP are developed (*State CEQA Guidelines* Sec. 15385).

In addition to fulfilling legal requirements, the 2026 RTP Program EIR will provide an opportunity to inform decision makers and the public about potential environmental effects associated with the implementation of the RTP and alternatives. This first-tier regional-scale environmental analysis will also help local agencies evaluate and reduce direct and indirect impacts, growth-inducing impacts, and cumulative environmental effects with respect to local projects.

This NOP is intended to alert responsible agencies, interested agencies, organizations, and individuals of the preparation of the 2026 RTP Program EIR. Comments regarding the scope of the Program EIR received during the 30-day NOP review period will be used to refine the scope and content of the Program EIR, as appropriate.

2. PROJECT LOCATION AND BACKGROUND

Kern COG is an association of city and county governments created to address regional transportation issues. Its member agencies include the County of Kern and the 11 incorporated cities within Kern County: Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco. The Kern COG Board of Directors is comprised of one elected representative from each of the 11 incorporated cities, two Kern County Supervisors, and two ex-officio members representing Caltrans and the Golden Empire Transit District. **Figure 1, Map of the Kern COG Region,** illustrates the Kern COG region.

Kern COG is officially designated by federal law as the Metropolitan Planning Organization (MPO) for the Kern County region. Additionally, under state law, Kern COG is designated as a Council of Governments (COG). As such, Kern COG has several formal authorities and responsibilities, including:

- Conducting continued, comprehensive, and coordinated transportation planning and programming processes that result in a Regional Transportation Plan and a Federal Transportation Improvement Program (FTIP) for the region. Together these documents serve as the legal basis for transportation decision making in the region.

- Preparing an SCS in accordance with the Sustainable Communities and Climate Protection Act of 2008 (SB 375), as part of the RTP. If the SCS does not meet greenhouse gas (GHG) emission reduction targets, Kern COG would prepare an Alternative Planning Strategy (APS) which would show how the GHG emission targets would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies. It is Kern COG's intent to achieve the targets with the SCS.

Kern Council of Governments
1401 19th Street, Suite 300 Bakersfield CA 93301 661-635-2900 Facsimile 661-324-8215 TTY 661-832-7433 www.kerncog.org

- Preparing a Regional Housing Need Allocation (RHNA) Plan in which Kern COG identifies areas within the region sufficient to house an 11-year projection of the regional housing need. Additionally, the RHNA allocates housing units within the region consistent with the development pattern included in the RTP. In August 2022, the California Housing and Community Development Department (HCD) approved the 2023- 2031 RHNA Plan.

- Conducting a comprehensive environmental planning process, including a Program EIR for the RTP and conducting inter-governmental review for all projects of regional significance.

- Determining, pursuant to the Federal Clean Air Act, the conformity of Kern COG RTPs and FTIPs to air quality planning requirements.

3. PROJECT DESCRIPTION

Pursuant to the federal FAST ACT authorization, Kern COG must prepare and update a transportation plan for its metropolitan planning area every four years to ensure that the plan adequately addresses future travel needs and is consistent with the federal Clean Air Act. Kern COG's last RTP/SCS is currently pending CARB approval. The 2026 RTP is the culmination of a multi-year effort with the intent to improve the balance between land use and transportation systems. Kern COG is required by federal law to develop an RTP that determines the needs of the transportation system and prioritizes proposed transportation projects. The RTP is also necessary to obtain and allocate federal funding for regional transportation projects. Kern COG does not implement individual projects in the RTP; these projects will be implemented by local jurisdictions and other agencies. FAST ACT modifies existing state and MPO transportation planning processes and requires discussion of the types of potential environmental mitigation activities. Consultation activities are a part of the 2026 RTP and Program EIR development processes.

Regional Transportation Plan

The RTP defines the region's mobility needs and issues through 2049, sets forth an action plan of projects and programs to address the needs consistent with the adopted policies, and documents the financial resources needed to implement the plan. Regional transportation improvement projects proposed to be funded, in whole or in part, in the state transportation improvement program must be included in the adopted RTP.

The development of the 2026 RTP has already been initiated by Kern COG. In April 2024, the Kern COG board adopted the 2024-2050 regional growth forecast that provides a long-range projection for countywide total population. The population total is used to develop housing, employment, school enrollment, and income forecasts. The forecast is also used for local transportation and air quality planning, as well as for a variety of long-range planning activities, such as the 2026 RTP.

Sustainable Communities Strategy

The requirement of an SCS under SB 375 ties regional transportation planning with regional housing planning under the RHNA. The SCS will coordinate planning for land use and transportation at a regional scale, with the goal of reducing the amount that people must drive and associated GHGs. The SCS is required to:

Kern Council of Governments
1401 19th Street, Suite 300 Bakersfield CA 93301 661-635-2900 Facsimile 661-324-8215 TTY 661-832-7433 www.kerncog.org

- use the most recent planning assumptions considering local general plans and other factors;
- identify the general location of uses, residential densities, and building intensities within the region;
- identify areas within the region sufficient to house all the population of the region;
- identify areas within the region sufficient to house an eight-year projection of the regional housing need;
- identify a transportation network to service the transportation needs for the region;
- gather and consider the best practically available scientific information regarding resource areas and farmland in the region;
- consider the state housing goals;
- set forth a forecasted development pattern for the region;
- comply with Section 176 of the federal Clean Air Act;
- consider spheres of influence that have been adopted by the Local Agency Formation Commission (LAFCO) within the region;
- quantify the reduction in GHG projected to be achieved by the SCS; and
- consider any adopted multiregional goals and policies.

SB 375 Targets

The current emissions targets for Kern COG, as provided by the California Air Resources Board (CARB), are a regional target of a 9 percent reduction in per capita GHG emissions for the planning year 2020 (successfully attained) and a 15 percent reduction in per capita GHG emissions for the planning year 2035, as compared to baseline per capita emissions levels in 2005. SB 375 requires that CARB update the targets every four to eight years and then use those targets as goals to be achieved in the RTP. CARB is currently undertaking the updated target-setting process required by SB 375. Updated targets are anticipated to be adopted by CARB in 2026. The Kern 2026 RTP will use the current emissions targets. If these targets cannot be feasibly met, Kern COG will prepare an APS to show how the targets would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

CEQA Streamlining

SB 375 contains CEQA incentives, or streamlining provisions, to encourage coordinated land use and transportation planning. Certain types of development projects (i.e., transit priority projects or residential/mixed use residential projects, as defined by the statute) may qualify for CEQA streamlining as long as the requisite criteria are met. Generally, this means that the proposed project seeking to utilize the CEQA incentives is determined to be consistent with an approved SCS. Consistency will be determined by the local jurisdiction that is the lead agency for each project to be streamlined. Kern COG's primary role is to include appropriate information in the SCS, such as land use information as required by SB 375 and/or guidance to aid in interpreting land use information that will allow a jurisdiction to make a consistency determination with respect to appropriate streamlining options on a project-by-project basis.

Kern Council of Governments
1401 19th Street, Suite 300 Bakersfield CA 93301 661-635-2900 Facsimile 661-324-8215 TTY 661-832-7433 www.kerncog.org

Public Outreach

Community engagement and outreach are an important component of the development of the 2026 RTP. By nature, this plan represents the region's mutual vision for its future and was developed using a grassroots, bottom-up approach. Kern COG has solicited community involvement and input on the RTP through several committees. One such committee is the Regional Planning Advisory Committee (RPAC). Formed by the Kern COG Board in 2011, the RPAC was created to provide a forum to review and develop recommendations on key activities associated with regional transportation plans and other planning issues, including SB 375 implementation.

During the coming months, Kern COG will continue to revise the land use scenarios based on comments and new data gathered from local jurisdictions and from the public outreach workshops. During the public outreach workshops and roundtables, residents, local jurisdictions and other stakeholders will be given the opportunity to provide input on a variety of scenarios. This information and input will be reflected in the scenarios to ensure the development of the RTP meets GHG reduction targets.

Preliminary 2026 RTP Alternatives

It is anticipated that the 2026 RTP Program EIR will evaluate three alternatives to the RTP as follows: No Project, Modified 2022 RTP; and a more aggressive infill or transportation alternative. Each alternative, except the No Project Alternative, will vary policies and projects in order to provide a reasonable range. Together with the proposed 2026 RTP, the alternatives will represent a reasonable range of potential land use densities and intensities, bus routes, high-speed passenger rail options, highway/roadway construction and widening projects, and rail projects.

Kern COG has the discretion to select an alternative in its entirety or to combine elements of various alternatives to develop the plan selected for the 2026 RTP. Alternatives analysis in an EIR are focused on reducing the significant or potentially significant impacts of a project. Therefore, the descriptions of alternatives are developed as the impacts of the project are identified through the Program EIR process. The three conceptual alternatives currently proposed to be evaluated in the Program EIR are as follows:

No Project Alternative

The No Project Alternative consists of all major transportation projects that are reasonably foreseeable and reasonably expected to go forward without the 2026 RTP, including all projects that have already received funding, are scheduled to receive funding, and/or have received environmental clearance by December 2025. The No Project Alternative will assume that no safety related maintenance would be deferred, but the overall appearance and function of the transportation system would be expected to deteriorate. This alternative would also assume conditions without the SCS.

Modified 2022 RTP

As part of the 2026 RTP and Program EIR development and scoping process, an additional alternative will be developed and considered using the policies and projects from the 2022 RTP with the following changes/focus:

- updated with more recent population information
- focus on reducing one or more impacts identified through the 2026 RTP Program EIR analysis

Intensified Transportation Alternative

Kern COG anticipates that this alternative will vary from the proposed 2026 RTP by identifying a more intensely developed urban form and more transportation measures and policies to reduce GHG emissions and energy consumption. This alternative could include more mixed-use, infill development and increased densities in urban cores.

Scope of Environmental Analysis

The impact categories listed below have been preliminarily identified for analysis in the 2026 RTP Program EIR.

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services, Recreation and Utilities
- Transportation
- Tribal Cultural Resources
- Wildfire

In addition, the Program EIR will address cumulative impacts, growth-inducing impacts, and other issues required by CEQA.



SOURCE: Esri, 2025

FIGURE **1**

IMPACT SCIENCES

Map of the Kern COG Region

1170.004•01/25

Docusign Envelope ID: 512371E3-37F7-4756-BEE3-59D93C14D0D6

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243 - 4005
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

May 21, 2025

Becky Napier, Deputy Director of Administration
Kern Council of Governments
1401 19th Street, Suite 300.
Bakersfield, California 93301
(661) 635-2910
Napier@kerncog.org

Subject: 2026 Regional Transportation Plan (Plan)
Notice of Preparation (NOP)
State Clearinghouse No.: 2025041115

Dear Becky Napier:

The California Department of Fish and Wildlife (CDFW) received a NOP to prepare a Programmatic Environmental Impact Report (PEIR) from the Kern Council of Governments (COG), as Lead Agency, for the above-referenced Project pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Plan that may affect California fish and wildlife. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Id., § 1802.). Similarly, for purposes of CEQA,

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

Docusign Envelope ID: 512371E3-37F7-4756-BEE3-59D93C14D0D6

CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, reasonably foreseeable future projects may be subject to CDFW's lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of reasonably foreseeable future projects may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required.

Fully Protected Species: CDFW has jurisdiction over fully protected species of birds, mammals, amphibians and reptiles, and fish, pursuant to Fish and Game Code sections 3511, 4700, 5050, and 5515. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except as follows:

- Take is for necessary scientific research,
- Efforts to recover a fully protected, endangered, or threatened species, live capture, and relocation of a bird species for the protection of livestock, or
- They are a covered species whose conservation and management is provided for in a Natural Community Conservation Plan (Fish & G. Code, §§ 3511, 4700, 5050, & 5515).

Additionally, specified types of infrastructure projects may be eligible for an Incidental Take Permit (ITP) for unavoidable impacts to fully protected species if certain conditions are met (see Fish & G. Code §2081.15). Project proponents should consult with CDFW early in the project planning process if an ITP may be pursued for projects tiered from this Plan.

Other Special-Status Species: Species of plants and animals need not be officially listed as Endangered, Rare, or Threatened on any State or federal list pursuant to CESA and/or the federal Endangered Species Act (ESA) to be considered Endangered, Rare, or Threatened under CEQA. If a species can be shown to meet the criteria specified in the CEQA Guidelines (Cal. Code Regs., tit. 14, Chapter 3, § 15380), it should be fully considered in the environmental analysis for the Plan.

Nesting Birds: CDFW has jurisdiction over actions with potential to result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, their eggs and nests include, sections 3503 (regarding unlawful take, possession or needless destruction of the nest or eggs of any

Docusign Envelope ID: 512371E3-37F7-4756-BEE3-59D93C14D0D6

bird), 3503.5 (regarding the take, possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird).

Unlisted Species: Species of plants and animals need not be officially listed as Endangered, Rare, or Threatened on any State or federal list pursuant to CESA and/or the federal Endangered Species Act (ESA) to be considered Endangered, Rare, or Threatened under CEQA. If a species can be shown to meet the criteria specified in the CEQA Guidelines (Cal. Code Regs., tit. 14, Chapter 3, § 15380), it should be fully considered in the environmental analysis for the Plan.

PROJECT DESCRIPTION SUMMARY

Proponent: Kern Council of Governments

Objective: The Plan proposes to update the transportation plan within the Kern County metropolitan planning area to address future travel needs and be consistent with the federal Clean Air Act. The Plan would determine the need of the transportation system, prioritize proposed transportation projects, and obtain and allocate federal funding for regional transportation projects.

Location: The Plan area would include Kern County and the eleven (11) incorporated cities within Kern County: Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco.

COMMENTS AND RECOMMENDATIONS

CDFW offers the following comments and recommendations to assist the Kern COG in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the PEIR prepared for this Plan.

Special-Status Species

The NOP indicates that the PEIR for the Plan will analyze potential impacts resulting from implementation of the Plan. Based on aerial imagery and species occurrence records from the California Natural Diversity Database (CNDDB) (CDFW 2025), CDFW's familiarity with biological resources in the Plan area, and given that the Project encompasses the entirety of Kern County, CDFW recommends that special-status species be considered as part of the PEIR that will be draft for this Plan, including, but not limited to, the species identified in **Attachment 1** of this letter. These resources would need to be evaluated and addressed as part of the PEIR and prior to any approvals that would allow ground-disturbing activities. CDFW also recommends that the PEIR analyze potential impacts to these species and provide measurable mitigation

Docusign Envelope ID: 512371E3-37F7-4756-BEE3-59D93C14D0D6

measures that would reduce impacts to less than significant levels as needed for projects tiered from this Plan.

Botanical Surveys: CDFW recommends that the PEIR for this Plan include a measure requiring that projects tiered from this Plan located within natural habitats be surveyed by a qualified botanist for any possible special-status plants following the "Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities" (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline). CDFW recommends that the plant surveys be floristic and, if necessary, utilize a known reference site for any special-status plants in order to provide a high level of confidence in the effort and results.

If a special-status plant is found, CDFW recommends that the special-status plant species be avoided whenever possible by delineating and observing a no disturbance buffer of at least 50 feet from the outer edge of the plant population(s) or specific habitat type(s) required by special-status plant species. If buffers cannot be maintained, then consultation with CDFW is warranted to determine appropriate minimization and mitigation measures for impacts to special-status plant species. If a State or federally listed plant species is identified during botanical surveys, it is recommended that consultation with CDFW and/or the United States Fish and Wildlife Service (USFWS) be conducted to determine permitting needs.

California Endangered Species Act: Reasonably foreseeable future projects tiered from this Plan may be subject to CDFWs regulatory authority pursuant to the California Endangered Species Act (CESA). In the event that species listed under CESA are detected during surveys, consultation with CDFW is warranted to discuss how to implement the project and avoid "take," or if avoidance is not feasible, to acquire a State ITP, pursuant to Fish and Game Code section 2081 subdivision (b), prior to any ground disturbing activities. In addition, CDFW recommends that mitigation measures for the CESA listed species be fully addressed in the CEQA document prepared for any future project tiered from this Plan.

California Natural Diversity Database (CNDDB): Please note that the CNDDB is populated by voluntary submissions of species detections. As a result, species may be present in locations not depicted in the CNDDB but where there is suitable habitat and features capable of supporting species. A lack of an occurrence record, or lack of recent occurrence records, in the CNDDB does not mean that a species is not present. All projects tiered from this Plan should adequately assess any potential project-related impacts to biological resources by ensuring biological surveys are conducted by a qualified wildlife biologist during the appropriate survey period(s) and using the appropriate protocol survey methodology as warranted in order to determine whether or not any special-status species are present at or near the project area.

Docusign Envelope ID: 512371E3-37F7-4756-BEE3-59D93C14D0D6

CEQA Alternatives Analysis: CDFW recommends that the information and results obtained from the cumulative impacts analysis conducted as part of this Plan's PEIR be used to develop and modify the Plan's alternatives to avoid and minimize impacts to biological resources to the maximum extent possible. Please note that when efforts to avoid and minimize impacts have been exhausted for projects tiered from this Plan, remaining impacts to sensitive biological resources may need to be mitigated to reduce impacts to a less than significant level, if feasible.

Cumulative Impact Analysis: Given that a Plan serves primarily as a planning tool and that future project-level CEQA documents are expected to be tiered from it, CDFW recommends that a cumulative impact analysis be conducted for all potential biological resources that will either be significantly or potentially significantly impacted by implementation of the Plan, including those whose impacts are determined to be less than significant with mitigation incorporated or for those resources that are rare or in poor or declining health and will be impacted by any future project, even if those impacts are expected to be relatively small (i.e. less than significant). CDFW recommends cumulative impacts be analyzed using an acceptable methodology to evaluate the impacts of past, present, and reasonably foreseeable future projects on resources and be focused specifically on the resource, not the project. An appropriate resource study area identified and utilized for this analysis is advised. CDFW staff is available for consultation in support of cumulative impacts analyses as a trustee and responsible agency under CEQA.

Federally Listed Species: CDFW recommends projects tiered from this Plan consult with the USFWS on potential impacts to federally listed species. Take under the Federal Endangered Species Act (ESA) is more broadly defined than CESA; take under the ESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Consultation with USFWS is advised well in advance of any ground disturbing activities.

Lake and Streambed Alteration: Reasonably foreseeable future projects tiered from this Plan may be subject to CDFW's regulatory authority pursuant to Fish and Game Code section 1600 et seq. Fish and Game Code section 1602 requires project proponents to notify CDFW prior to commencing any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake; or (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. "Any river, stream, or lake" includes those that are ephemeral or intermittent as well as those that are perennial in nature. For additional information on notification requirements, please contact our staff in the Lake and Stream Alteration Program at (559) 243-4593, or R4LSA@wildlife.ca.gov.

Docusign Envelope ID: 512371E3-37F7-4756-BEE3-59D93C14D0D6

CDFW therefore recommends that the PEIR for this Plan include information related to these requirements of Fish and Game code and advise that projects tiered from this Plan retain a qualified biologist to determine if potential impacts to streams may require the need to notify pursuant to Fish and Game Code section 1602.

Nesting birds: CDFW encourages that all projects tiered from this Plan occur during the bird non-nesting season; however, if ground-disturbing or vegetation-disturbing activities must occur during the nesting season (February 1st through September 15th), each future project applicant is responsible for ensuring that implementation of their project does not result in violation of the Migratory Bird Treaty Act or relevant Fish and Game Code sections as referenced above.

CDFW recommends that a qualified biologist conduct pre-activity surveys for active nests no more than 10 days prior to the start of ground or vegetation disturbance to maximize the probability that nests that could potentially be impacted are detected. CDFW also recommends that surveys cover a sufficient area around each future project site to identify nests and determine their status. A sufficient area means any area potentially affected by a project. In addition to direct impacts (i.e., nest destruction), noise, vibration, and movement of workers or equipment could also affect nests. Prior to initiation of construction activities, CDFW recommends that a qualified biologist conduct a survey to establish a behavioral baseline of all identified nests. Once construction begins, CDFW recommends having a qualified biologist continuously monitor nests to detect behavioral changes resulting from each future project. If behavioral changes occur, CDFW recommends halting the work causing that change and consulting with CDFW for additional avoidance and minimization measures.

If continuous monitoring of identified nests by a qualified biologist is not feasible, CDFW recommends a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors. These buffers are advised to remain in place until the breeding season has ended or until a qualified biologist has determined the birds have fledged and are no longer reliant upon the nest or on-site parental care for survival. Variance from these no-disturbance buffers is possible when there is a compelling biological or ecological reason to do so, such as when the construction areas would be concealed from a nest site by topography. CDFW recommends that a qualified biologist advise and support any variance from these buffers and notify CDFW in advance of implementing a variance.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database, which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural

Docusign Envelope ID: 512371E3-37F7-4756-BEE3-59D93C14D0D6

communities detected during Project surveys to the CNDDB. The CNDDB field survey form can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data. The completed form can be mailed electronically to the CNDDB at the following email address: CNDDB@wildlife.ca.gov. The types of information reported to the CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

If it is determined that the Plan or subsequent projects have the potential to impact biological resources, an assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089).

CONCLUSION

CDFW appreciates the opportunity to comment on the NOP to assist Kern COG in identifying and mitigating Project impacts on biological resources.

More information on survey and monitoring protocols for sensitive species can be found at CDFW's website (https://www.wildlife.ca.gov/Conservation/Survey-Protocols). If you have any questions regarding this letter or further coordination, please contact Marile Colindres, Environmental Scientist, at the address provided on this letterhead, by telephone at (559) 974-3452, or by electronic mail at marile.colindres@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Bob Stafford
5343A684FF02469...

For Julie A. Vance
Regional Manager

ATTACHMENT

ec: State Clearinghouse
Governor's Office of Planning and Research
State.Clearinghouse@opr.ca.gov

Docusign Envelope ID: 512371E3-37F7-4756-BEE3-59D93C14D0D6

REFERENCES

California Department of Fish and Wildlife. 2025. Biogeographic information and observation system (BIOS). https://www.wildlife.ca.gov/Data/BIOS. Accessed 11 May 2025.

Docusign Envelope ID: 512371E3-37F7-4756-BEE3-59D93C14D0D6

Attachment 1

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
SPECIAL-STATUS SPECIES TABLE

PROJECT: 2026 Regional Transportation Plan

SCH No.: 2025041115

Common Name	Scientific Name	Status	
		State	Federal
Giant kangaroo rat	*Dipodomys ingens*	E	E
Tipton kangaroo rat	*Dipodomys nitratoides nitratoides*	E	E
Bald eagle	*Haliaeetus leucocephalus*	E/FP	None
California condor	*Gymnogyps californianus*	E	E
Least Bell's vireo	*Vireo bellii pusillus*	E	E
Southwestern willow flycatcher	*Empidonax traillii extimus*	E	E
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	E	T
Blunt-nosed leopard lizard	*Gambelia sila*	E	E
Foothill yellow-legged frog – South Sierra Distinct Population Segment	*Rana boylii pop. 5*	E	None
Southern mountain yellow-legged frog	*Rana muscosa*	E	E
Bakersfield cactus	*Opuntia basilaris var. treleasei*	E	E
California jewelflower	*Caulanthus californicus*	E	E
San Joaquin adobe sunburst	*Pseudobahia peirsonii*	E	T
Bakersfield smallscale	*Atriplex tularensis*	E	None
Mojave tarplant	*Deinandra mohavensis*	E	None
Nelson's (San Joaquin) antelope squirrel	*Ammospermophilus nelsoni*	T	None
Mohave ground squirrel	*Xerospermophilus mohavensis*	T	None
San Joaquin kit fox	*Vulpes macrotis mutica*	T	E
Swainson's hawk	*Buteo swainsoni*	T	None
Tricolored blackbird	*Agelaius tricolor*	T	None
Desert tortoise	*Gopherus agassizii*	T	T
Giant gartersnake	*Thamnophis gigas*	T	T
Southern rubber boa	*Charina umbratica*	T	None
Kern Canyon slender salamander	*Batrachoseps simatus*	T	PT
Tehachapi slender salamander	*Batrachoseps stebbinsi*	T	None

Docusign Envelope ID: 512371E3-37F7-4756-BEE3-59D93C14D0D6

Striped adobe-lily	*Fritillaria striata*	T	None
Northern California ringtail	*Bassariscus astutus raptor*	FP	None
Golden eagle	*Aquila chrysaetos*	FP/WL	None
White-tailed kite	*Elanus leucurus*	FP	None
Western burrowing owl	*Athene cunicularia hypugaea*	C	None
Temblor legless lizard	*Anniella alexanderae*	C	None
Crotch's bumble bee	*Bombus crotchii*	C	None
Western Joshua tree	*Yucca brevifolia*	C	None
American badger	*Taxidea taxus*	SSC	None
Buena Vista Lake ornate shrew	*Sorex ornatus relictus*	SSC	E
Pallid bat	*Antrozous pallidus*	SSC	None
Short-nosed kangaroo rat	*Dipodomys nitratoides brevinasus*	SSC	None
Spotted bat	*Euderma maculatum*	SSC	None
Tehachapi pocket mouse	*Perognathus alticola inexpectatus*	SSC	None
Townsend's big-eared bat	*Corynorhinus townsendii*	SSC	None
Tulare grasshopper mouse	*Onychomys torridus tularensis*	SSC	None
Western mastiff bat	*Eumops perotis californicus*	SSC	None
Fulvous whistling-duck	*Dendrocygna bicolor*	SSC	None
Gray vireo	*Vireo vicinior*	SSC	None
Le Conte's thrasher	*Toxostoma lecontei*	SSC	None
Loggerhead shrike	*Lanius ludovicianus*	SSC	None
Long-eared owl	*Asio otus*	SSC	None
Mountain plover	*Charadrius montanus*	SSC	None
Purple martin	*Progne subis*	SSC	None
Yellow-breasted chat	*Icteria virens*	SSC	None
Yellow warbler	*Setophaga petechia*	SSC	None
Bakersfield legless lizard	*Anniella grinnelli*	SSC	None
California glossy snake	*Arizona elegans occidentalis*	SSC	None
California legless lizard	*Anniella pulchra*	SSC	None
Coast horned lizard	*Phrynosoma blainvillii*	SSC	None
Northwestern pond turtle	*Actinemys marmorata*	SSC	PT
San Joaquin coachwhip	*Masticophis flagellum ruddocki*	SSC	None
Sierra night lizard	*Xantusia vigilis sierrae*	SSC	None
Southern Sierra legless lizard	*Anniella campi*	SSC	None
Two-striped gartersnake	*Thamnophis hammondii*	SSC	None
Western pond turtle	*Emys marmorata*	SSC	PT
Arroyo toad	*Anaxyrus californicus*	SSC	None
Relictual slender salamander	*Batrachoseps relictus*	SSC	PE

Docusign Envelope ID: 512371E3-37F7-4756-BEE3-59D93C14D0D6

Western spadefoot	*Spea hammondii*	SSC	PT
Kern brook lamprey	*Lampetra hubbsi*	SSC	None
Kern River rainbow trout	*Oncorhynchus mykiss gilberti*	SSC	None
Parish's checkerbloom	*Sidalcea hickmanii ssp. Parishii*	R	None
Red Rock tarplant	*Deinandra arida*	R	None
Tracy's eriastrum	*Eriastrum tracyi*	R	None
E= Endangered, T=Threatened, C= Candidate for listing as Threatened and/or Endangered, R= Rare, SSC= Species of Special Concern, FP= Fully Protected, PE= Proposed Endangered, PT=Proposed Threatened, R= Rare,			