

# *Kern Council of Governments*

2018 Regional Transportation Plan  
SCH # 2017041081

*Program Environmental Impact Report*



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May 2018



**KERN COUNCIL OF GOVERNMENTS  
2018 REGIONAL TRANSPORTATION  
PLAN  
PROGRAM ENVIRONMENTAL  
IMPACT REPORT**

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# 1.0 INTRODUCTION

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## 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 2018 Regional Transportation Plan (2018 RTP, RTP, Plan, or Project). The 2018 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 2018 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 emissions and a plan of action for the region to pursue to meet identified transportation needs. The PEIR for the 2018 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 2018 RTP; however, this Program EIR 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 these 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 Sustainable Communities Strategy (SCS) portion of the RTP to meet the greenhouse gas (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 2018 RTP

The 2018 RTP defines the region's mobility needs and issues through 2042, 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 2018 RTP 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. 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/Action Element
- Financial Constraints
- Future Transportation Planning (beyond 2042)
- Monitoring progress

### 1.2.2 SCS

As part of the 2018 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 have to drive and thereby reducing associated greenhouse gases (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)).

### 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 2018 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 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.<sup>1</sup>*

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

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<sup>1</sup> State CEQA Guidelines §15168

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.”<sup>2</sup>

As such, the focus of the environmental analysis in the 2018 RTP/SCS PEIR is on regional-scale and cumulative impacts of implementation of the 2018 RTP/SCS (and identified alternatives). The long-range planning horizon of more than 20 years as well as the regional scale of the RTP/SCS, necessitates 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 in to 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 market place 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 2042.

The degree of specificity in an EIR corresponds to the degree of specificity of the underlying activity being evaluated.<sup>3</sup> Also, the adequacy of an EIR is determined in terms of what is reasonably feasible, in light of factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project.<sup>4</sup> The activity being evaluated in this PEIR is the long-term (through the year 2042) 2018 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 2042.

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<sup>2</sup> *In re Bay Delta* (2008) 43 Cal. 4th 1143, 1174

<sup>3</sup> *State CEQA Guidelines* §15146

<sup>4</sup> *State CEQA Guidelines* §§15151, 15204(a)

*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 2018 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 2018 RTP played an important role in determining the appropriate level of detail to include in this Program EIR. Kern County encompasses more than 8,171 square miles and, in 2018, the population in Kern County was estimated to be 905,801 persons.<sup>5,6</sup> 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 2018 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 2018 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 2018 RTP/SCS 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.

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<sup>5</sup> California Department of Finance (DOF). 2018. "E-1 Population Estimates for Cities, Counties, and the State-January 1, 2017 and 2018."

<sup>6</sup> DOF released the January 1, 2018 and revised 2017 estimates in early May 2018 (approximately 2 weeks prior to release of the Draft EIR). The new population estimate was 1/4 percent higher than would be estimated by using the DOF forecast and interpolating from the July 1, 2017 base year data used for modeling. This higher than anticipated growth supports the higher Kern COG adopted growth forecast assumption when compared to the most recent DOF adopted forecast.

## 1.4 BASELINE FOR DETERMINING SIGNIFICANCE

The PEIR must identify significant impacts that would be expected to result from implementation of the 2018 RTP. A significant impact is defined as a “substantial or potentially substantial, adverse change in the environment.”<sup>7</sup> Significant impacts are determined by applying explicit significance criteria to compare the future Plan conditions to the existing environmental setting.<sup>8</sup> 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 (May 1, 2017), 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.”<sup>9</sup> 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 which are adverse, but significant, from impacts which are adverse, but not significant.<sup>10</sup> A lead agency may select a standard of significance based on its judgment.<sup>11</sup> The standards of significance used in an EIR may also rely upon policies adopted and implemented by the lead agency.<sup>12</sup> The criteria for determining significance are included in each resource section in Section 4.0 of this PEIR.

## 1.6 PROPOSED 2018 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.”<sup>13</sup> “An EIR need not consider every conceivable alternative to a project.”<sup>14</sup>

<sup>7</sup> Public Resources Code §21068

<sup>8</sup> *State CEQA Guidelines* §15126.2(a)

<sup>9</sup> *State CEQA Guidelines* § 15064(b)

<sup>10</sup> *Eureka Citizens for Responsible Gov't v City of Eureka* (2007) 147 Cal.App.4th 357

<sup>11</sup> *Sierra Club v. City of Orange* (2008) 163 Cal.App.4th 523, 541

<sup>12</sup> *Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477

<sup>13</sup> *Residents Ad Hoc Stadium Committee v. Board of Trustees* (1979) 89 Cal.App.3d 274, 286.

<sup>14</sup> *State CEQA Guidelines* §15126.6(a)

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 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.<sup>15</sup>

*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 Program EIR evaluates a reasonable range of alternatives for the 2018 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 2018.
2. The Old Plan Alternative is an update of the adopted 2014 RTP to reflect the most recent growth estimates and transportation planning decisions and assumptions.
3. The Countywide Infill Alternative would result in new growth being accommodated as infill development. All new growth (175,394 units) would be accommodated as infill development with 98 percent of housing as medium or high density in the predominant urban area

The Plan and each alternative maintain a constant total for population, households, and jobs in 2042.

## 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

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<sup>15</sup> *California Oak Foundation v. Regents of University of California* (2010) 188 Cal.App. 4th 227, 275-276.

projects” (*State CEQA 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 2042. As such the impacts of the 2018 RTP is 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 2018 RTP. Furthermore, this PEIR considers other regional-scale projects that have similar regional-scale impacts that could overlap with impacts of the 2018 RTP, for identified CEQA impact areas. Such regional scale cumulative projects include RTPS 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 Managements 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 2018 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, impact to recreational resources occurs 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**

<b>Kern County</b>	<b>Kern County and Adjacent Jurisdictions</b>	<b>San Joaquin Valley</b>	<b>State of California</b>
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
Noise			Greenhouse Gas Emissions
Population and Housing			
Hydrology			

## 1.8 GROWTH PATTERNS

The 2018 RTP includes an SCS that encourages a more compact landform, with growth focused at transit nodes, centers and in areas designed 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: 87.5 square miles or 56,000 acres under the Plan compared to up to 91.5 square miles or 58,560 acres 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); *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 a 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 2018 RTP. With respect to the transportation projects in the 2018 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 Program EIR identifies measures that Kern COG will encourage implementing and local agencies to utilize on a project-specific basis, as appropriate. In general, the terms "local agency," and "implementing agency" are used throughout this Program EIR 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 2018 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 24 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. Kern COG, as part of their Environmental Review Program/Intergovernmental Review process, will facilitate and encourage implementing and local agencies to require these measures, as appropriate. As discussed in each section, 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 2018 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. 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 Program EIR 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 Program EIR should guide design, planning, review and decision-making processes. As authorized by *State CEQA Guidelines* and case law, the mitigation measures included in this Draft Program EIR 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. 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, 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.

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.

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 their adopted procedures. Most individual projects in the RTP will be implemented by Caltrans, GET, and local governments. These agencies routinely implement the types of mitigation measures identified in this Draft Program EIR during project design, CEQA review, and/or project construction. This Draft Program EIR 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.<sup>16</sup> 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 preliminary review in accordance with Section 15060 of the *State CEQA Guidelines*, Kern COG determined that a Program EIR 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 May 1, 2017 and May 31, 2017 for the required 30-day review period. The purpose of the NOP was to solicit early comments from public agencies with expertise in subjects that would be discussed in the Draft EIR. The NOP and comments received during the NOP review period are contained in **Appendix 1.0** of this EIR.

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 2018 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
- Air Quality
- Cultural Resources (including Tribal Cultural Resources)
- Greenhouse Gases
- Population and Housing
- Recreation
- Water Resources
- Agricultural Resources
- Biological Resources
- Land Use and Planning
- Noise
- Public Services
- Transportation and Traffic
- Utilities and Services Systems

### 1.10.1. Level of Significance

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

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<sup>16</sup> Government Code §65080(b)(2)(K)

- **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 2018 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, which 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, Golden Empire Transit will serve as the Responsible Agencies for the 2018 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 2018 RTP include the following agencies: California Air Resources Board, California Department of Fish and Wildlife, State Historic Preservation Office, Regional Water Quality Control Board, Department of Toxic Substances Control.

## 1.12 EIR REVIEW PROCESS

Pursuant to *State CEQA Guidelines* § 15082, the NOP for the 2018 TRP EIR was released on May 1, 2017 and circulated for a 30-day comment period ending May 31, 2017. Kern COG convened a Program EIR scoping meeting at Kern COG's office on May 18, 2017. 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 19<sup>th</sup> Street, Suite 300  
Bakersfield, CA 93301  
Attn: Becky Napier, Deputy Director - Administration  
bnapier@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 County Board of Supervisors, 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 purpose of the SCS is to develop strategies to meet the GHG emission reduction targets for the region, as an incentive for local agencies to implement an SCS, SB 375 establishes CEQA streamlining or exemptions for two types of projects: Transportation Priority Projects" (TPPs) and residential projects consistent with the SCS.

A TPP is eligible for four types of CEQA streamlining: (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 a SCS accepted by the State Air Resources Board. 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
- be within 0.5 mile of a major transit stop<sup>17</sup> or high-quality transit corridor<sup>18</sup> included in the RTP.

### ***Sustainable Communities Project Exemption***

The Sustainable Communities Project (SCP) is a TPP, which is consistent with the SCS that meets a number of criteria related to being located in an area well-served by infrastructure, located on a site that does not contain hazards or historic resources, meets certain energy efficiency and size criteria as well as other performance standards.

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 2018 RTP PEIR.<sup>19</sup> 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

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<sup>17</sup> 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.

<sup>18</sup> Defined as a corridor with fixed route bus service with at least 15-minute service intervals during peak commute hours.

<sup>19</sup> Pub. Res. Code §21155.2(b)



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 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.

### 1.13.1 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 2018 RTP/SCS 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 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 2042. 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.

### 1.13.2 Other CEQA Streamlining - SB 226 and SB 743

SB 226 is intended to streamline review of infill development of residential, commercial, retail, office and school uses consistent with an SCS by: (1) providing flexibility in project design by basing eligibility for streamlining on environmental performance rather than project characteristics; and (2) avoiding repetitive environmental review where effects have already been analyzed at a programmatic level.

Infill projects that satisfy the performance standards specified in *CEQA Guidelines* Appendix M and the provisions of *CEQA Guidelines* §15183.3 may use the streamlining provisions of CEQA §15183.3. The effects of an infill project do not require additional review under two circumstances. First, if an effect was addressed as a significant effect in a prior EIR for a planning level decision, then, with some exceptions, that effect need not be analyzed again for an individual infill project. Second, even if an effect was not analyzed in a prior EIR or is more significant than previously analyzed, further analysis of such effects is not required if uniformly applicable development policies or standards, adopted by the lead agency or a city or county, apply to the infill project and would substantially mitigate that effect. *CEQA Guidelines* §15183.3(d)) specifies a deferential substantial evidence standard of review for lead agencies to determine whether an eligible infill project will cause any new or worse significant effects requiring additional CEQA review. Depending on the effects addressed in the prior EIR and the availability of uniformly applicable development policies or standards that apply to the eligible infill project, streamlining ranges from a complete exemption, to an obligation to prepare a streamlined project-specific environmental document.

*State CEQA Guidelines* Section 15183.3 requires that in order to be eligible for streamlined review, a project must meet a number of criteria. Short-term emissions of air pollutants associated with construction occurring under the 2018 RTP are discussed in **Impact AIR-3**. While it is possible that these emissions would be different under the 2018 RTP compared to the No Project scenario, there is insufficient data to make an assessment of the likely difference. Therefore, it is unknown if the impacts would be lesser or greater for the 2018 RTP compared to the No Project scenario. Following preliminary review of an infill project pursuant to Section 15060, the lead agency may prepare a written checklist to evaluate which of the infill project's potential adverse environmental effects, if any, will be subject to further environmental review. A sample written checklist is provided in CEQA Appendix N.

### 1.13.3 CEQA Streamlining Under SB 743

SB 743 of 2013 creates two different opportunities for CEQA streamlining. First, for residential, mixed use, or employment center projects proposed on infill sites that are within transit priority areas (TPAs),<sup>20</sup> aesthetic and parking impacts are not to be considered significant environmental effects in project CEQA documents (Pub. Res. Code § 21099(d)). “Aesthetic impacts” do not include impacts on cultural or historic resources. Second, SB 743 completely exempts residential, mixed use, or employment center projects in TPAs from CEQA if they are consistent with a specific plan for which an EIR has been prepared, and consistent with the regional SCS (general use designation, density, building intensity, and applicable policies) that meets regional GHG reduction targets established by SB 375. (Pub. Res. Code § 21155.4(a).)

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

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<sup>20</sup> A TPA is an area within one-half mile of an existing “major transit stop,” or a planned major transit stop included in an adopted federal Transportation Improvement Program. (Pub. Res. Code § 21099(a)(7).)

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, 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 2018 RTP as required by the *State CEQA Guidelines*.

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

**Section 5.0, Alternatives**, provides 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

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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*<sup>1</sup> 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 2018 Regional Transportation Plan (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 2018 RTP 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** – 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.

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<sup>1</sup> *State CEQA Guidelines*, Section 15123.

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 2018 RTP 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, 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 2018 RTP is a long-range Regional Transportation Plan that includes projects, policies, and strategies to create a blueprint for the region's growth through 2042. The 2014 RTP included improvements to the transportation system including closures to critical gaps in the network that hinder access to certain parts to 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 2014 RTP are included in the 2018 RTP 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 condition).

The 2018 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 2018 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 make substantial advances towards reaching the 2050 climate goal of reducing GHG emissions by 80 percent below 1990 levels. As noted above, this RTP must include 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 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 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 and changing demographics, and transportation demands.

Prior to adopting the 2018 RTP, Kern COG's Board must certify the PEIR for the Plan. Local agencies as well as transportation implementation agencies will use the 2018 RTP and this PEIR as reference materials as part of their planning and project evaluation processes.

Over the lifetime of the 2018 RTP, Kern forecasts that there will be an additional 570,675 people added to this large and diverse area. The 2018 RTP is based on growth forecasts in the region in 2042 as shown in **Table 2.0-1, Existing and 2042 Population, Households, and Employment.**

**Table 2.0-1  
Existing and 2042 Population, Households, and Employment**

	Population		Households		Employment	
	Existing (2017)	Plan (2042)	Existing (2017)	Plan (2042)	Existing (2017)	Plan (2042)
Kern COG	898,825	1,469,500	268,306	443,700	325,300	483,500

*Source: Kern COG 2018*

### 2.3.2 Sustainable Communities Strategy

The passage of SB 375 gave Kern COG a new area of responsibility and provides 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 the California Air Resources Board to determine per-capita GHG emission reduction targets for each MPO in the state at two points in the future (2020 and 2035).

On September 23, 2010, CARB set targets for lowering emissions in the San Joaquin Valley. The targets call for a 5 percent reduction in per capita emissions from passenger vehicles and light trucks by 2020, and a 10 percent reduction by 2035 through land use and transportation planning.

Because GHG emissions in the transportation sector relate closely to vehicle miles travelled (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 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 *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."<sup>2</sup> 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 transportation plan and/or TIP, or have completed environmental review by January 2018. 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 occurring prior to SB 375 requirements to focus growth in TPAs.

### **Alternative 2 – Old Plan Alternative**

The Old Plan Alternative is an update of the adopted 2014 RTP reflecting the most recent growth distribution and transportation planning decisions and assumptions, extrapolated from the 2040 horizon year in the Old Plan out to 2042, the horizon year of the 2018 RTP. This Old Plan alternative does not

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<sup>2</sup> CEQA § 15126.6[e][2]

include the same development pattern strategies included within the Sustainable Communities Strategy (SCS), but includes all of the projects in the 2014 RTP including delivery of a beltway system earlier than the Old Plan Alternative. The proposed 2018 Plan would include slightly more infill development as a result of refinements developed as part of the Bakersfield High Speed Rail Station Area Plan. 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 2014 RTP and Kern Regional Blueprint process which represented a significant change from previous development patterns.

### 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 72 percent of new growth would be accommodated as infill development with 98 percent of housing as medium or high density in the predominant urban area. County wide 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.

**Table 2.0-2**  
**Summary of Growth for 2018 RTP 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	19.0	38.0	18.4	25.4	28.1	37.7	53.5	36.9
No Project	1.0	~1	6.6	8.2	10.4	13.0	83	78.8
Old Plan	18.7	35.1	17.8	23.3	24.3	32.3	57.9	44.4
Countywide Infill Alternative	56.5	72.9	33.1	48.0	36.6	50.9	30.3	1.1

Source: Kern COG, 2018; Growth only is 2015-2042 growth from Uplan Model and project level analysis outside of Uplan.

The Plan and each alternative maintain a constant total for population, households, and jobs in 2042.

## 2.5 AREAS OF KNOWN CONTROVERSY

After conducting 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 May 18, 2017 and June 17, 2017 for the required 30-day review period. Kern COG held a scoping meeting on Thursday May 18, 2017 at Kern COG's offices to solicit comments and to inform the public of the proposed EIR. Comments received in response to the published NOP (provided in **Appendix 1.0**) identified environmental topics that local and regional agencies and City residents recommended for analysis in the Draft EIR. These topics include:

- Cultural Resources
- Environmental Justice

## 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 **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 2018 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
<b>AESTHETICS</b>		
<p><b>Impact AES-1</b> Have a substantial adverse effect on a scenic vista for example by impairing views of scenic resources (i.e., mountains, ocean, rivers, or significant man-made structures) as seen from existing transportation facilities and other key public vantage points in Kern County.</p> <p><b>Impact AES-2</b> Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic or eligible highway for example by altering the appearance of designated scenic resources along or near a state-designated or eligible scenic highway or vista point.</p>	<p><b>MM AES-1:</b> 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.</p> <p><b>MM AES-2:</b> 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:</p> <ul style="list-style-type: none"> <li>• Use a palette of colors, textures, building materials that are graffiti-resistant, and/or plant materials that complement the surrounding landscape and development.</li> <li>• Use contour grading to better match surrounding terrain. Contour edges of major cut-and-fill to provide a more natural looking finished profile.</li> <li>• Use alternating facades to “break up” large facades and provide visual interest.</li> <li>• Design new corridor landscaping to respect existing natural and man-made features and to complement the dominant landscaping of the surrounding areas.</li> <li>• Replace and renew landscaping along corridors with road widenings, interchange projects, and related improvements.</li> <li>• Retain or replace trees bordering highways, so that clear-cutting is not evident.</li> <li>• 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.</li> <li>• 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. Site or design of projects should minimize their intrusion into important viewsheds and</li> </ul>	<p>Significant at the regional level; less than significant at the TPA level.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<p>use contour grading to better match surrounding terrain.</p> <p><b>MM AES-3:</b> 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:</p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• 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;</li> <li>• prohibit projects and activities that would obscure, detract from, or negatively affect the quality of views from designated scenic roadways or scenic highways; and comply with other local general plan policies and local control related to the protection of panoramic or scenic views or views of significant landscape features or landforms.</li> </ul>	
<p><b>Impact AES-3</b> Substantially degrade the existing visual character or quality of the site and its surroundings (for example, by creating significant contrasts, with the scale, form, line, color, and/or overall visual character of the existing landscape setting)</p>	<p><b>MM AES-4:</b> 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.</p> <p><b>MM AES-5:</b> 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.</p> <p><b>MM AES-6:</b> 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.</p>	<p>Significant at the regional level; less than significant at the TPA level.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	Any existing blight or nuisance should be abated within 60 to 90 days of approval, unless an earlier date is specified elsewhere.	
<p><b>Impact AES-4</b> Create a new source of substantial light or glare, which could affect day or nighttime views and/or cause a public hazard.</p>	<p><b>MM AES-7:</b> 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:</p> <ul style="list-style-type: none"> <li>• Use lighting fixtures that are adequately shielded to a point below the light bulb and reflector and that prevent unnecessary glare onto adjacent properties.</li> <li>• Restrict the operation of outdoor lighting for construction and operation activities to the hours of 7:00 a.m. to 10:00 p.m.</li> <li>• Use high pressure sodium and/or cut-off fixtures instead of typical mercury-vapor fixtures for outdoor lighting.</li> <li>• Use unidirectional lighting to avoid light trespass onto adjacent properties.</li> <li>• Design exterior lighting to confine illumination to the project site, and/or to areas which do not include light-sensitive uses.</li> <li>• Provide structural and/or vegetative screening from light-sensitive uses.</li> <li>• Shield and direct all new street and pedestrian lighting away from light-sensitive off-site uses.</li> <li>• Use non-reflective glass or glass treated with a non-reflective coating for all exterior windows and glass used on building surfaces.</li> <li>• Architectural lighting shall be directed onto the building surfaces and have low reflectivity to minimize glare and limit light onto adjacent properties.</li> </ul>	Significant at the regional level; less than significant at the TPA level.
<b>AGRICULTURAL RESOURCES</b>		
<p><b>Impact AG-1</b> Convert prime farmland, unique farmland, or farmland of statewide importance (farmland), as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.</p>	<p><b>MM AG-1:</b> 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.</p> <p><b>MM AG-2</b> 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.</p> <p><b>MM AG-3:</b> Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to establish preservation ratios to minimize</p>	Potentially significant at the regional level; less than significant at the TPA level.



Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<p>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.</p> <p>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.</p> <p>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.</p> <p>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).</p> <p>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.</p>	
<p><b>Impact AG-2</b> Conflict with existing zoning or land use designation for agricultural use, or a Williamson Act contract.</p>	<p>Implement <b>Mitigation Measures AG-1 through AG-5.</b></p>	<p>Potentially significant at the regional level; less than significant at the TPA level.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
<p><b>Impact AG-3</b> 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)); and/or result in the loss of “Forest Land” as defined in the California Forest Legacy Act of 2007 (Pub. Resources Code, § 12220(G)) or conversion of Forest Land into non-forest use.</p>	<p>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.</p> <p>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.</p> <p>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.</p>	<p>Potentially significant at the regional level; less than significant at the TPA level.</p>
<p><b>Impact AG-4</b> Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use.</p>	<p>Implement <b>Mitigation Measures AG-1</b> through <b>AG-5</b>.</p>	<p>Potentially significant at the regional level; less than significant at the TPA level.</p>
<b>AIR QUALITY</b>		
<p><b>Impact AIR-1:</b> 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.</p>	<p>No mitigation is required.</p>	<p>Less than significant at the regional and TPA level.</p>
<p><b>Impact AIR-2:</b> Projected long-term emissions of criteria pollutants are considered significant if they are substantially greater than current emission levels.</p>	<p>No mitigation is required.</p>	<p>Less than significant at the regional and TPA level.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
<p><b>Impact AIR-3</b> Projected short-term emissions of criteria pollutants (construction of transportation projects and anticipated development) are considered to be significant if they would result in substantial criteria pollutant emissions.</p>	<p><b>MM AIR-1:</b> 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:</p> <ul style="list-style-type: none"> <li>• 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 <a href="http://www.airquality.org/ceqa/index.shtml">http://www.airquality.org/ceqa/index.shtml</a>. 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.</li> <li>• Ensure that all construction equipment is properly tuned and maintained.</li> <li>• Minimize idling time to 5 minutes – saves fuel and reduces emissions.</li> <li>• Provide an operational water truck on-site at all times. Apply water to control dust as needed to prevent dust impacts off-site.</li> <li>• Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.</li> <li>• 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.</li> <li>• 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.</li> </ul>	<p>Significant at the regional and TPA levels.</p>
<p><b>Impact AIR-4</b> Projected long-term emissions of toxic air contaminants (DPM from heavy-duty diesel trucks and other emissions from industrial activities) are considered significant if they would be greater than</p>	<p><b>MM AIR-2:</b> 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:</p>	<p>Potentially significant at the regional and TPA levels.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
<p>current emission levels.</p> <p><b>Impact AIR-5</b> Localized concentrations of toxic air contaminants at sensitive receptors (short-term and/or long-term) are considered significant if they would exceed existing conditions.</p>	<ul style="list-style-type: none"> <li>• Set technology forcing new engine standards;</li> <li>• Reduce emissions from the in-use fleet;</li> <li>• Require clean fuels, and reduce petroleum dependency;</li> <li>• Work with USEPA to reduce emissions from federal and state sources; and</li> <li>• Pursue long-term advanced technology measures.</li> <li>• Proposed new transportation-related SIP measures include:                             <ul style="list-style-type: none"> <li><b>On-road Sources</b> <ul style="list-style-type: none"> <li>– Improvements and Enhancements to California’s Smog Check Program</li> <li>– Expanded Passenger Vehicle Retirement</li> <li>– Modifications to Reformulated Gasoline Program</li> <li>– Cleaner In-Use Heavy-Duty Trucks</li> <li>– Ship Auxiliary Engine Cold Ironing and Other Clean Technology</li> <li>– Cleaner Ship Main Engines and Fuel</li> <li>– Port Truck Modernization</li> <li>– Accelerated Introduction of Cleaner Line-Haul Locomotives</li> <li>– Clean Up Existing Commercial Harbor Craft</li> </ul> </li> <li><b>Off-road Sources</b> <ul style="list-style-type: none"> <li>– Cleaner Construction and Other Equipment</li> <li>– Cleaner In-Use Off-Road Equipment</li> <li>– Agricultural Equipment Fleet Modernization</li> <li>– New Emission Standards for Recreational Boats</li> <li>– Off-Road Recreational Vehicle Expanded Emission Standards</li> </ul> </li> </ul> </li> </ul> <p><b>MM AIR-3:</b> 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:</p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• 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;</li> <li>• Work with stakeholders to identify planning and development practices that are effective in reducing health impacts to sensitive receptors; and</li> <li>• Share information on all of the above efforts with stakeholders, member cities,</li> </ul>	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<p>counties and the public.</p> <p><b>MM AIR-4:</b> 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:</p> <ol style="list-style-type: none"> <li>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 pollutants 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.</li> <li>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.             <ol style="list-style-type: none"> <li>i. Do not locate sensitive receptors near distribution center’s entry and exit points.</li> <li>ii. Do not locate sensitive receptors in the same building as a perchloroethylene dry cleaning facility.</li> <li>iii. Maintain a 50-foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year).</li> <li>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.</li> <li>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.</li> <li>vi. Maintain positive pressure within the building.</li> </ol> </li> </ol>	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<p>vii. Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air.</p> <p>viii. Achieve a performance standard of at least 4 air exchanges per hour of recirculation</p> <p>ix. Achieve a performance standard of 0.25 air exchanges per hour of in unfiltered infiltration if the building is not positively pressurized.</p> <p>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&amp;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.</p> <p>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.</p> <p><b>MM AIR-5:</b> 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).</p> <p><b>MM AIR-6:</b> 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.</p> <p><b>MM AIR-7:</b> 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</p>	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	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.	
<b>BIOLOGICAL RESOURCES</b>		
<p><b>Impact BIO-1</b> 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</p>	<p><b>MM BIO-1:</b> 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.</p> <p><b>MM BIO-2:</b> 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:</p> <p>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:</p> <ul style="list-style-type: none"> <li>• <b>Review Existing Information.</b> 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 CNDDDB, previously prepared environmental documents, city and county general plans, HCPs and NCCPs, and the CNPS electronic inventory.</li> <li>• <b>Coordinate with Agencies.</b> 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.</li> <li>• <b>Conduct Field Studies.</b> 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:</li> <li>• <b>Habitat Assessment.</b> 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</li> </ul>	<p>Potentially significant at the regional and TPA levels.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<p>determine whether return surveys are necessary. If no suitable habitat is present, no additional surveys shall be required.</p> <ul style="list-style-type: none"> <li>• <b>Species-Focused Surveys.</b> 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.</li> <li>• <b>Floristic Protocol-Level Surveys.</b> 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.</li> </ul> <p>Special-status plant populations identified during the field surveys shall be mapped and documented as part of CEQA and NEPA process, as applicable.</p> <p><b>MM BIO-3:</b> 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)</p> <p>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:</p> <ul style="list-style-type: none"> <li>• Redesign or modify their project to avoid direct and indirect impacts on special status plants, if feasible.</li> <li>• 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.</li> </ul> <p>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</p>	



Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<p>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.</p> <p><b>MM BIO-4:</b> 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:</p> <p>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:</p> <ul style="list-style-type: none"> <li>• <b>Review Existing Information.</b> 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 CNDDDB, previously prepared environmental documents, city and county general plans, HCPs and NCCPs (if applicable), and USFWS issued biological opinions for previous projects.</li> <li>• <b>Coordinate with State and Federal Agencies.</b> 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 necessary to document special-status wildlife and their habitats.</li> <li>• <b>Conduct Field Studies.</b> 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:</li> <li>• <b>Habitat Assessment.</b> 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.</li> <li>• <b>Species-Focused Surveys.</b> 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.</li> </ul> <p><b>Protocol-Level Wildlife Surveys.</b> 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</p>	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<p>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.</p> <p>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.</p> <p><b>MM BIO-5:</b> 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)</p> <p>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:</p> <ul style="list-style-type: none"> <li>• Redesign or modify the project to avoid direct and indirect impacts on special-status wildlife or their habitats, if feasible.</li> <li>• 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.</li> <li>• 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             <ul style="list-style-type: none"> <li>o a description of each of the protected wildlife species and any suitable habitat</li> </ul> </li> </ul>	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<p>for special-status species that could occur at the project site;</p> <ul style="list-style-type: none"> <li>○ the locations of known occurrences of special-status wildlife species within 1.0 mile of the project site;</li> <li>○ the location and size of no-disturbance zones in and adjacent to environmentally sensitive areas for wildlife;</li> <li>○ 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</li> <li>○ notification and reporting requirements for special-status species that are identified on the project site.</li> </ul>	
<p><b>Impact BIO-2</b> 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;</p>	<p><b>MM BIO-6:</b> 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:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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-bearing mammals, are actively using the areas in conjunction with breeding activities.</li> </ul>	<p>Potentially significant at regional and TPA levels.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<p><b>MM BIO-7:</b> 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:</p> <p>If riparian communities are present in the project area, avoid or minimize impacts on riparian communities by implementing the following measures:</p> <ul style="list-style-type: none"> <li>• Redesign or modify the project to avoid direct and indirect impacts on riparian communities, if feasible.</li> <li>• 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.</li> <li>• 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.</li> </ul> <p><b>MM BIO-8:</b> 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:</p> <p>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.</p>	
<p><b>Impact BIO-3</b> 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,</p>	<p><b>MM BIO-9:</b> 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</p>	<p>Potentially significant at the regional and TPA levels.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
<p>hydrological interruption, or other means.</p>	<p>jurisdictional and isolated wetlands)</p> <p>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 2008I. The jurisdictional boundary for other waters of the United States should be identified based on:</p> <ul style="list-style-type: none"> <li>• 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]).</li> </ul> <p>This information should be mapped and documented as part of the CEQA and NEPA documentation, as applicable, and in wetland delineation reports.</p> <p><b>MM BIO-10:</b> 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.</p> <p>Avoid and minimize impacts on wetlands and other waters of the United States (creeks, steams, and rivers) by implementing the following measures:</p> <ul style="list-style-type: none"> <li>• Redesign or modify the project to avoid direct and indirect impacts on wetland habitats.</li> <li>• 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 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• Stabilize exposed slopes and stream banks immediately on completion of installation activities. Other waters of the United States shall be restored in a</li> </ul>	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<p>manner that encourages vegetation to reestablish to its pre-project condition and reduces the effects of erosion on the drainage system.</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul> <p>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.</p> <p><b>MM BIO-11:</b> 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:</p> <p>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).</p>	
<p><b>Impact BIO-4</b> 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.</p>	<p><b>MM BIO-12:</b> 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:</p> <p>Prior to design approval of individual projects that contain movement habitat, the implementing agency shall 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 can and 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</p>	<p>Potentially significant at the regional and TPA levels.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<p>are not limited to, the following:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• Prohibit construction activities with 250 feet of occupied nest of birds afforded protection pursuant to the Migratory Bird Treaty Act, during the breeding season.</li> <li>• Ensure that suitable nesting sites for migratory nongame native bird species protected under the Migratory Bird Treaty Act and/or trees with unoccupied raptor nests should only be removed prior to February 1, or following the nesting season.</li> <li>• Pursue mitigation banking to preserve habitat linkages and corridors (opportunities to purchase, maintain, and/or restore offsite habitat).</li> <li>• Install wildlife fencing where appropriate to minimize the probability of wildlife injury due to direct interaction between wildlife and roads or construction.</li> <li>• 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: <ul style="list-style-type: none"> <li>○ Wildlife movement buffer zones</li> <li>○ Corridor realignment</li> <li>○ Appropriately spaced breaks in center barriers</li> <li>○ Stream rerouting</li> <li>○ Culverts</li> <li>○ Creation of artificial movement corridors such as freeway under- or overpasses</li> <li>○ Other comparable measures</li> </ul> </li> </ul> <p>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,</p>	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
<p><b>Impact BIO-5</b> Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.</p> <p><b>Impact BIO-6</b> 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.</p>	<p>NMFS, or other local jurisdictions</p> <p>Implement Mitigation Measures <b>MM BIO-1</b> through <b>MM BIO-12</b></p> <p><b>BIO-13:</b> 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:</p> <p>Design projects to avoid conflicts with local policies and ordinances protecting biological resources.</p> <p>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:</p> <ul style="list-style-type: none"> <li>• Avoidance strategies</li> <li>• Contribution of in-lieu fees</li> <li>• Planting of replacement trees at a minimum ratio of 2:1</li> <li>• Re-landscaping areas with native vegetation post-construction</li> <li>• Other comparable measures.</li> </ul> <p><b>MM-BIO-14</b> 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:</p> <ul style="list-style-type: none"> <li>• Consult with the appropriate federal, state, and/or local agency responsible for the administration of HCPs or NCCPs.</li> <li>• Wherever practicable and feasible, the project shall be designed to avoid through project design lands preserved under the conditions of an HCP or NCCP.</li> </ul> <p>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.</p>	<p>Potentially significant at the regional and TPA levels for both Impact BIO-5 and Impact BIO-6.</p>



Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
<b>CULTURAL RESOURCES</b>		
<p><b>Impact CR-1</b> Cause a substantial adverse change in the significance of a historic structure that is a historical resource as defined in <i>State CEQA Guidelines</i> Section 15064.5.</p>	<p><b>MM CR-1:</b> 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.</p> <p>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 <i>State CEQA Guidelines</i> 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:</p> <ul style="list-style-type: none"> <li>• a records search at the Southern San Joaquin Valley Information Center (California State University, Bakersfield);</li> <li>• contact with local historical societies, museums, or other interested parties as appropriate to help determine locations of known significant historical resources;</li> <li>• necessary background, archival and historic research;</li> <li>• 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</li> <li>• 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;</li> <li>• buildings should be evaluated under CRHR and/or NRHP Criteria as appropriate and recorded on California Department of Parks and Recreation 523 forms.</li> </ul> <p>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.</p> <p>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.</p>	<p>Potentially significant at the regional and TPA levels.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
<p><b>Impact CR-2</b> Cause a substantial adverse change in the significance of an archaeological resource pursuant to <i>State CEQA Guidelines</i> Section 15064.5.</p>	<p><b>MM CR-2:</b> 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.</p> <p>During environmental review of projects, implementing and local agencies should:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul> <p>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.</p> <p>Implementing and local agencies and the contractors performing the improvements should adhere to the following requirements:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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</li> </ul>	<p>Potentially significant at the regional and TPA levels.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	measures. The project proponent should be required to implement any mitigation necessary for the protection of cultural resources.	
<p><b>Impact CR-3</b> Directly or indirectly destroy a unique paleontological resource or site.</p>	<p><b>MM CR-3:</b> Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to identify, survey, and evaluate paleontological resources to avoid potential impacts.</p> <p>During environmental review implementing and local agencies should retain a qualified paleontologist to identify, survey, and evaluate paleontological resources where potential impacts are considered high. All construction activities should avoid known paleontological resources, if feasible, especially if the resources in a particular lithologic unit formation have been determined to be unique or likely to contain paleontological resources. If avoidance is not feasible, paleontological resources should be excavated by a qualified paleontologist and given to a local agency, State University, or other applicable institution, where they could be curated and displayed for public education purposes.</p>	<p>Potentially significant at the regional and TPA levels.</p>
<p><b>Impact CR-4</b> Disturb any human remains, including those interred outside of formal cemeteries.</p>	<p><b>MM CR-4:</b> 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.</p> <p>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:</p> <ul style="list-style-type: none"> <li>• The Kern County Coroner has been informed and has determined that no investigation of the cause of death is required.</li> <li>• If the remains are of Native American origin, either of the following steps will be taken: <ul style="list-style-type: none"> <li>○ 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.</li> <li>○ Implementing or local agencies or authorized representatives should retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and reburial 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: <ul style="list-style-type: none"> <li>– The Native American Heritage Commission is unable to identify a descendent.</li> </ul> </li> </ul> </li> </ul>	<p>Potentially significant at the regional and TPA levels.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<ul style="list-style-type: none"> <li>- The descendant identified fails to make a recommendation.</li> <li>- 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.</li> </ul>	
<p><b>Impact TCR-1</b> Cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape sacred place, or object with cultural value to a California Native American tribe, and that is: 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).</p>	<p>Implement <b>Mitigation Measures MM CR-2</b> and <b>MM CR-4</b>.</p>	<p>Potentially significant at the regional and TPA levels.</p>
<p><b>Impact TCR-2</b> Cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Cod section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.</p>	<p>Implement <b>Mitigation Measures MM CR-2</b> and <b>MM CR-4</b>.</p>	<p>Potentially significant at the regional and TPA levels.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
<b>GREENHOUSE GASES</b>		
<p><b>Impact GHG-1</b> Increase GHG emissions compared to existing conditions (2017).</p>	<p><b>MM GHG-1:</b> 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 2018 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.</p> <p><b>MM GHG-2:</b> 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.</p> <p><b>MM GHG-3:</b> 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.</p> <p><b>MM GHG-4:</b> 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.</p> <p><b>MM GHG-5:</b> Kern COG will continue to promote GHG and criteria pollutant emission reductions through the VMT Reduction Progress Tracking &amp; 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.</p> <p><b>MM GHG-6:</b> 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 <i>CEQA Guidelines</i> Section 15183.5 Tiering and Streamlining the Analysis of Greenhouse Gas Emissions) that do the following:</p>	<p>Significant at the regional and TPA levels.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<p>a) Quantify GHG emissions, both existing and projected over a specified period, resulting from activities within each agency’s jurisdiction;</p> <p>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;</p> <p>c) Identify and analyze the GHG emissions resulting for specific actions or categories of actions anticipated within their respective jurisdictions;</p> <p>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;</p> <p>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</p> <p>f) Be adopted in a public process following environmental review.</p> <p>CAPs should, when appropriate, incorporate planning and land use measures from the California Attorney General’s latest list of example policies to address climate change at both the plan and project level. Specifically, at the plan level, land use plans can and should, when appropriate and feasible, incorporate planning and land use measures from the California Attorney General’s latest list of example policies to address climate change (<a href="http://ag.ca.gov/globalwarming/pdf/GP_policies.pdf">http://ag.ca.gov/globalwarming/pdf/GP_policies.pdf</a>), including, but not limited to policies from that web page such as:</p> <ul style="list-style-type: none"> <li>• Smart growth, jobs/housing balance, transit-oriented development, and infill development through land use designations, incentives and fees, zoning, and public private partnerships</li> <li>• Create transit, bicycle, and pedestrian connections through planning, funding, development requirements, incentives and regional cooperation, and create disincentives for auto use</li> <li>• Energy and water-efficient buildings and landscaping through ordinances, development fees, incentives, project timing, prioritization, and other implementing tools</li> </ul> <p>In addition, implementing and local agencies should incorporate, as appropriate, policies to encourage implementation of the Attorney General’s list of project-specific mitigation measures available at the following web site: <a href="http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf">http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf</a>, including, but not limited to measures from the web page, such as:</p> <ul style="list-style-type: none"> <li>• Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation</li> <li>• Build or fund a major transit stop within or near development</li> <li>• Provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers</li> <li>• Incorporate bicycle lanes, routes and facilities into street systems, new</li> </ul>	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	subdivisions, and large developments <ul style="list-style-type: none"> <li>Require amenities for non-motorized transportation, such as secure and convenient bicycle parking</li> </ul> They should also incorporate, when appropriate, planning and land use measures from additional resources listed by the California Attorney General at the following webpage: <a href="http://ag.ca.gov/globalwarming/ceqa/resources.php">http://ag.ca.gov/globalwarming/ceqa/resources.php</a> . In addition, CAPs should also incorporate analysis of climate change adaptation, in recognition of the likely and potential effects of climate change in the future regardless of the level of mitigation and in conjunction with Executive Order S-13-08, which seeks to enhance the state's management of climate impacts including sea level rise, increased temperatures, shifting precipitation, and extreme weather events by facilitating the development of state's first climate adaptation strategy.	
<b>Impact GHG-2:</b> Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing emissions of greenhouse gases.	Implement <b>Mitigation Measures MM TR-3</b> through <b>MM-TR-5</b> , <b>MM AIR-1</b> and <b>MM AIR-2</b> , and <b>MM-GHG-1</b> through <b>MM-GHG-4</b> .	significant at the regional and TPA level.
<b>Impact GHG-3:</b> Conflict with SB 375 GHG emission reduction targets.	No mitigation is required.	Less than significant at the regional and TPA level.
<b>LAND USE AND PLANNING</b>		
<b>Impact LU-1</b> Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	<b>MM LU-1:</b> Kern COG shall work with its member cities and counties to ensure that transportation projects and growth are consistent with the RTP and general plans. <b>MM LU-2:</b> 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. <b>MM LU-3:</b> 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.	Potentially significant at the regional and TPA levels.
<b>Impact LU-2</b> Physically divide an established community.	See <b>Mitigation Measures LU-1</b> through <b>LU-3</b> and <b>POP-1</b> .	Significant at the regional and TPA levels.
<b>NOISE</b>		
<b>Impact NOISE-1</b> Expose persons or generate noise in levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; and/or result in a substantial temporary or periodic increase in ambient noise levels above levels existing without the project; and/or result in a substantial permanent increase in	<b>MM NOISE-1:</b> 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: <ul style="list-style-type: none"> <li>Equipment and trucks used for project construction can and should use the best available noise control techniques (e.g., improved mufflers, equipment redesign,</li> </ul>	Potentially significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
<p>ambient noise levels above levels existing without the project.</p>	<p>use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds, wherever feasible).</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• A procedure and phone numbers for notifying the Lead Agency staff and local Police Department; (during regular construction hours and off-hours).</li> <li>• 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).</li> <li>• The designation of an on-site construction complaint and enforcement manager for the project.</li> <li>• 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.</li> <li>• 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.</li> <li>• Use of portable barriers in the vicinity of sensitive receptors during construction.</li> <li>• 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.</li> <li>• 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.</li> </ul>	



Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<ul style="list-style-type: none"> <li>• Monitor the effectiveness of noise attenuation measures by taking noise measurements.</li> <li>• 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.</li> <li>• Construct sound reducing barriers between noise sources and noise-sensitive land uses.</li> </ul> <p><b>MM NOISE 2:</b> 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:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• Use techniques such as grade separation, buffer zones, landscaped berms, dense plantings, sound walls, reduced-noise paving materials, and traffic calming measures.</li> <li>• Maximize the distance of new route alignments from sensitive receptors.</li> <li>• Locate transit-related passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations away from sensitive receptors to the maximum extent feasible.</li> <li>• 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.</li> </ul>	
<p><b>Impact NOISE-2</b> Expose people to or generate excessive groundborne vibration.</p>	<p>Implement <b>Mitigation Measure MM NOISE-1</b> and <b>MM NOISE-2</b>.</p>	<p>Potentially significant at the regional and TPA levels.</p>
<p><b>Impact NOISE-3</b> Exposure of people residing or working in the project area to excessive noise levels if the project is located within an area covered by 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</p>	<p>No mitigation is required.</p>	<p>Less than significant at the regional and TPA level.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
<p><b>Impact NOISE-4</b> 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.</p>		
<p><b>POPULATION, HOUSING, AND EMPLOYMENT</b></p>		
<p><b>Impact POP-1</b> 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)</p>	<p><b>MM POP-1:</b> 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 2018 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.</p>	<p>Potentially significant at the regional and TPA levels.</p>
<p><b>Impact POP-2</b> Require the acquisition of right-of-ways that would displace a substantial number of existing businesses or homes.</p>	<p><b>MM POP-2:</b> 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.</p> <p><b>MM POP-3:</b> 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.</p>	<p>Potentially significant at the regional and TPA levels.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
<b>FIRE SERVICES</b>		
<b>Impact FIRE-1</b> 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.
<b>Impact FIRE-2</b> 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.	<b>MM FIRE-1</b> 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. <b>MM FIRE-2</b> 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.	Potentially significant at the regional and TPA levels.
<b>POLICE SERVICES</b>		
<b>Impact POLICE-1</b> 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.
<b>SCHOOLS</b>		
<b>Impact EDU-1</b> 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.
<b>RECREATION</b>		
<b>Impact REC-1</b> Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial deterioration of the facilities could occur.	<b>MM REC-1:</b> 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. <b>MM REC-2:</b> 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. <b>MM REC-3</b> Kern COG shall facilitate reducing future impacts as a result of increased use of existing neighborhood and regional parks or other facilities from	Significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	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.	
<b>Impact REC-2</b> 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.
<b>LIBRARY</b>		
<b>Impact LIB-1</b> 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.
<b>TRANSPORTATION AND TRAFFIC</b>		
<b>Impact TR-1</b> Substantial increase in VMT and/or hours of congestion.	<p><b>MM TR-1:</b> 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.</p> <p><b>MM TR-2</b> Kern COG shall pursue funding for Tier 2 RTP projects and programs, beyond the currently financially and institutionally feasible measures included in the 2018 RTP, which may improve LOS results on roadway segments projected to be at LOS worse than E, consistent with the CMP complete streets and multimodal LOS policies.</p> <p><b>MM TR-3:</b> 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.</p> <p><b>MM TR-4</b> Kern COG will continue to encourage and facilitate transportation projects that maximize efficiency of the transportation system, and include VMT reduction.</p> <p><b>MM TR-5</b> 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</p>	Significant at the regional and TPA levels.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	implement measures that reduce VMT including mixed use, alternative transportation facilities (bike racks, transit stops, and pedestrian amenities) as appropriate for each local agency.	
<b>Impact TR-2</b> 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.	<b>MM TR-6:</b> Kern COG should inform jurisdictions with projected LOS E and F roadway segments under the Plan of the potential need to develop a Deficiency Plan under the Kern CMP before 2040 through the RTP process. Kern COG shall work with these agencies to identify and implement changes that would increase use of alternative transportation and other means to reduce congestion consistent with the CMP.	Significant at the regional and TPA levels.
<b>Impact TR-3</b> Result in a change in air traffic patterns, including either an increase in air traffic levels or a change in location that results in substantial safety risks.	No mitigation is required.	Less than significant at the regional and TPA level.
<b>Impact TR-4</b> 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.
<b>Impact TR-5</b> Result in inadequate emergency access.	No mitigation is required.	Less than significant at the regional and TPA level.
<b>Impact TR-6</b> Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	No mitigation is required.	Less than significant at the regional and TPA level.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
<b>ENERGY</b>		
<p><b>Impact EN-1</b> Substantially increase the consumption of electricity, natural gas, gasoline, diesel, or other nonrenewable energy types.</p>	<p><b>MM EN-1:</b> 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 <u>siting</u>, 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.</p>	<p>Significant at the regional and TPA levels.</p>
<p><b>Impact EN-2</b> 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.</p>	<p><b>MM EN-2:</b> 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.</p> <p><b>MM EN-3:</b> 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.</p> <p><b>MM EN-4:</b> Kern COG shall continue to consider energy uncertainty impacts prior to the development of the next RTP. Topics that shall be considered include:</p> <ul style="list-style-type: none"> <li>• How the price and availability of transportation fuels affects revenues and demand;</li> <li>• How increases in fuel efficiency could affect revenues and emissions;</li> <li>• How the cost of commuting and personal travel affects mode choice and growth patterns;</li> <li>• How the cost of goods movement affects international trade and employment; or</li> <li>• How the escalation of fuel prices affects the cost of infrastructure construction, maintenance and operation.</li> </ul>	<p>Significant at the regional and TPA levels.</p>
<b>WASTEWATER</b>		

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
<p><b>Impact WW-1</b> Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.</p> <p><b>Impact WW-2</b> Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.</p> <p><b>Impact WW-3</b> Result in the determination by a wastewater treatment provider that it has inadequate capacity to serve projected demand in addition to existing commitments.</p>	<p>No mitigation is required.</p>	<p>Less than significant impact at the regional and TPA level.</p>
<b>SOLID WASTE</b>		
<p><b>Impact SW-1</b> 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.</p>	<p><b>MM SW-1:</b> Kern COG through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage diversion of solid waste such as recycling and composting programs.</p> <p><b>MM SW-2:</b> 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:</p> <ul style="list-style-type: none"> <li>• Reuse and minimization of construction and demolition (C&amp;D) debris and diversion of C&amp;D waste from landfills to recycling facilities.</li> <li>• The inclusion of a waste management plan that promotes maximum C&amp;D diversion.</li> <li>• 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.).</li> <li>• Reuse of existing structure and shell in renovation projects.</li> <li>• Design for deconstruction without compromising safety.</li> <li>• Design for flexibility through the use of moveable walls, raised floors, modular furniture, moveable task lighting, and other reusable building components.</li> <li>• <b>Development of indoor recycling program and space.</b></li> </ul> <p><b>MM SW-3:</b> 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.</p>	<p>Potentially significant at the regional and TPA levels.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
<b>WATER RESOURCES</b>		
<p><b>Impact W-1</b> 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.</p>	<p><b>MM W-1:</b> 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:</p> <ul style="list-style-type: none"> <li>• Complete, and have approved, a Stormwater Pollution Prevention Plan (SWPPP) prior to initiation of construction.</li> <li>• Implement Best Management Practices to reduce the peak stormwater runoff from the project site to the maximum extent practicable.</li> <li>• 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.</li> <li>• Complete, and have approved, a Standard Urban Stormwater Management Plan, prior to occupancy of residential or commercial structures.</li> <li>• Ensure adequate capacity of the surrounding stormwater system to support stormwater runoff from new or rehabilitated structures or buildings.</li> <li>• 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:               <ul style="list-style-type: none"> <li>○ 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.</li> <li>○ Regional Water Quality Control Board (RWQCB): Section 401 Water Quality Certification. Certification that the project will not violate state water quality standards is required before the Corps can issue a 404 permit, above.</li> <li>○ 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.</li> <li>○ Where feasible, restore or expand riparian areas such that there is no net loss of impervious surface as a result of the project.</li> <li>○ 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.</li> <li>○ 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.</li> </ul> </li> </ul>	<p>Significant at the regional and TPA levels.</p>



Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<ul style="list-style-type: none"> <li>○ 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.</li> <li>○ 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.</li> <li>○ 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.</li> <li>○ 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.</li> <li>○ 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.</li> <li>○ 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.</li> </ul> <p>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 shall incorporate appropriate site design measures to manage stormwater runoff and minimize impacts to water quality after the construction of the project.</p>	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
<p><b>Impact W-2</b> Substantially interfere with groundwater recharge.</p>	<p><b>MM W-2:</b> 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.</p> <p><b>MM W-3:</b> 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.</p> <p><b>MM W-4:</b> 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.</p> <p><b>MM W-5:</b> 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.</p>	<p>Potentially significant at the regional level; less than significant at the TPA level.</p>
<p><b>Impact W-3</b> Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map; or place within a 100-year flood hazard area structures which would impede or redirect flood flows; or expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; and/or inundation by seiche or mudflow.</p>	<p><b>MM W-6:</b> 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.</p> <p><b>MM W-7:</b> 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.</p>	<p>Potentially significant at the regional levels; less than significant at the TPA level.</p>
<p><b>Impact W-4</b> Substantially increase demand for water such that existing supplies and facilities would not be able to accommodate demand</p>	<p><b>MM W-8:</b> 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.</p> <p><b>MM W-9:</b> Kern COG, in coordination with regional water agencies and other stakeholders, shall encourage regional coordination throughout California to develop</p>	<p>Potentially significant at the regional and TPA levels.</p>

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<p>and support sustainable policies in accommodating growth.</p> <p><b>MM W-10:</b> 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.</p> <p><b>MM W-11:</b> 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.</p> <p><b>MM W-12:</b> 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.</p> <p><b>MM W- 13:</b> 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:</p> <ul style="list-style-type: none"> <li>• High efficiency toilets</li> <li>• Restroom faucets with automatic shut-off</li> <li>• High efficiency clothes washers</li> <li>• High efficiency dishwashers</li> <li>• Use of reclaimed water for appropriate uses</li> <li>• Water saving irrigation measures including: weather-based irrigation controller with rain shut-off.</li> </ul> <p><b>MM W-14:</b> Kern COG, through its Environmental Review</p>	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<p>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.</p> <p><b>MM W-15:</b> 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.</p> <p><b>MM W-16:</b> 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:</p> <ul style="list-style-type: none"> <li>• <b>Water Consumption Reduction Target:</b> Regional water agencies should work together to set a target for to reduce per capita water consumption by 2020.</li> <li>• <b>Water Conservation Plan:</b> Regional water agencies should establish a water conservation plan that may include such policies and actions as: <ul style="list-style-type: none"> <li>○ Tiered rate structures for water use;</li> <li>○ Restrictions on time of use for landscape watering, and other demand management strategies;</li> <li>○ Performance standards for irrigation equipment and water fixtures;</li> <li>○ Requirements that increased demand from new construction are offset with reductions so that there is no net increase in water use.</li> </ul> </li> <li>• <b>Recycled Water Use:</b> Local jurisdictions and regional water agencies should establish programs and policies to increase the use of recycled water, including: <ul style="list-style-type: none"> <li>○ Create an inventory of non-potable water uses within the jurisdiction that could be served with recycled water;</li> <li>○ Produce and promote the use of recycled water for agricultural, industrial, and irrigation purposes, including grey water systems for residential irrigation;</li> <li>○ 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.</li> </ul> </li> <li>• <b>Water Conservation Outreach:</b> Local jurisdictions and regional water agencies should implement a public education and outreach campaign to promote water</li> </ul>	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	<p>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.</p> <p><b>MM W-17:</b> 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.</p> <p><b>MM W-18:</b> 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.</p>	

## 3.0 PROJECT DESCRIPTION

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This chapter describes the proposed 2018 Regional Transportation Plan (RTP), which is being evaluated in this Program EIR. The proposed 2018 RTP updates the 2014 RTP and is considered the “proposed project.” The project description that follows describes the proposed RTP for purposes of analyzing the project’s potential to create environmental impacts (see **Chapter 4.0** for environmental analyses). This chapter provides an overview of the project’s regional location, project background, project objectives, as well as a detailed description of the proposed 2018 RTP.

### 3.1 INTRODUCTION

The 2018 RTP 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, 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.

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 a RTPA, Kern COG is mandated by California Government Code Section 65080 to prepare and periodically update the RTP. 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 and 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 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 2018 RTP 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 are 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 for a non-attainment area conformity determinations on updated transportation plans and programs must be made 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 in to the future).

In compliance with these requirements, the 2018 RTP includes a horizon year of 2042. Transportation investments in the region that receive state and federal funds or require federal approvals must be consistent with the RTP 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 5<sup>th</sup> year includes projects which have been added for information purposes only). It represents the immediate, near-term commitments of the RTP.

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 MPOs/RTPAs 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 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

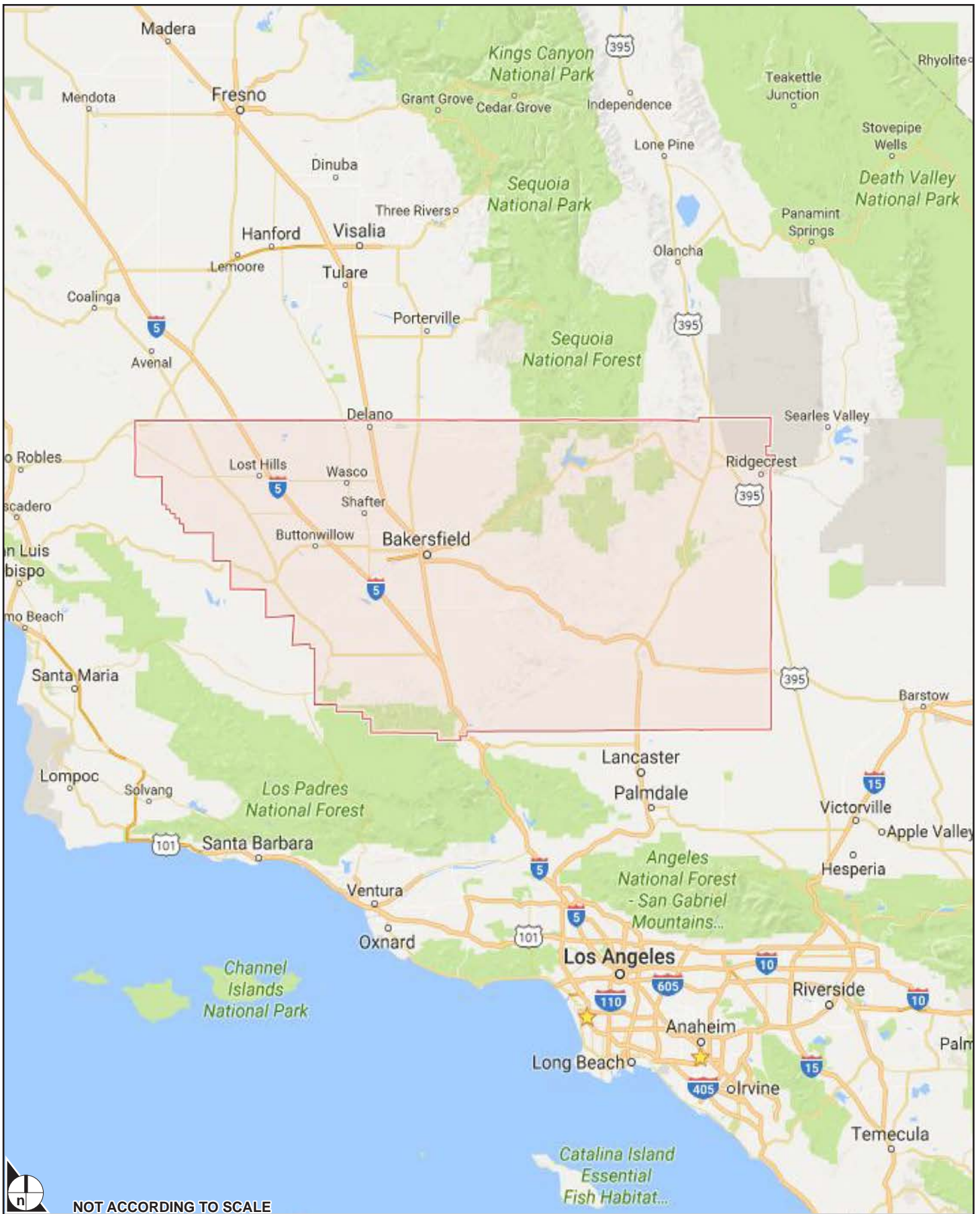


FIGURE 3.0-1



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 2018 RTP is a long-range Regional Transportation Plan that includes projects, policies, and strategies to create a blueprint for the region's growth through 2042. The 2014 RTP included improvements to the transportation system including closures to critical gaps in the network that hinder access to certain parts to 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 2014 RTP are included in the 2018 RTP 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 condition).

The 2018 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 2018 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 make substantial advances towards reaching the 2050 climate goal of reducing GHG emissions by 80 percent below 1990 levels. As noted above, this RTP must include 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 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 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 and changing demographics, and transportation demands.

Prior to adopting the 2018 RTP, Kern COG's Board must certify the PEIR for the Plan. Local agencies as well as transportation implementation agencies will use the 2018 RTP 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 2014 RTP laid much of the groundwork for the Kern COG 2018 RTP.

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 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 2018 RTP. 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 (2017) found that creating more high-paying jobs 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 the 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 for this SCS. 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 this 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 the both shared and unique characteristics of each of the eight counties.

### 3.3 PURPOSE AND NEED FOR ACTION

The purpose of the 2018 RTP 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 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 2018 RTP reduces greenhouse gas emissions as required by SB 375. The 2018 RTP identifies infrastructure projects and improvements to reduce traffic and congestion. The 2018 RTP includes mobility as an important component and also incorporates added emphasis on sustainability and integrated planning. The Plan contains projects, policies, and strategies to achieve a wide range of positive outcomes. It identifies reasonably available sources of funding for transportation. The 2018 RTP 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 Plan 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 Plan would also generally improve air quality, improve health, and reduce greenhouse gas emissions consistent with SB 375 requirements. The plan achieves its overall objectives by combining transportation investment and policies with integrated land use strategies that reduce vehicle miles traveled (VMT) and emissions. These land use strategies include:

- Focusing 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 walk and bike trips.

Over the lifetime of the 2018 RTP, Kern forecasts that there will be an additional 570,675 people added to this large and diverse area. The 2018 RTP is based on growth forecasts in the region in 2042 as shown in **Table 3.0-1, Existing and 2042 Population, Households, and Employment.**

**Table 3.0-1  
Existing and 2042 Population, Households, and Employment**

	Population		Households		Employment	
	Existing (2017)	Plan (2042)	Existing (2017)	Plan (2042)	Existing (2017)	Plan (2042)
Kern COG	898,825	1,469,500	268,306	443,700	325,300	483,500

*Source: Kern COG 2018*

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 responds to the purpose and need for the project. Although adoption of the 2018 RTP 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 2018 RTP 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 2018 RTP. 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 §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 2017, Kern County's estimated population is approximately 898,825 (see **Table 3.0-1**).

Kern County is the third largest (in terms of area) county in California and is 159 miles in length from the northwestern boundary to the southeastern boundary. The population is currently estimated at 898,825 and is expected to grow to 1,469,500 persons by 2042, the horizon year for the RTP. 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.

The following is excerpted from the 2018 RTP. 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.

Kern County has six significant industries:

- **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 ag leads to an additional \$1.27 generated by the region's non-agriculture economy.
- **Transportation and Logistics** is a fast-growing industry with tremendous potential within Kern. This is a leading cluster and supports the competitiveness of the Energy and Natural Resources and Value-Added Agriculture clusters through the use of warehousing and distribution services. Given Kern's location at the geographic population center of California, logistically and environmentally Kern is the best location in the state to centralize distribution services to the rest of the state with the lowest carbon footprint. Kern also serves as the immediate northern gateway to Los Angeles County. With California's two major north-south freeways running through the county as well as the only year-round pass over the Sierra Nevada Mountain Range in the San Joaquin Valley, it is a natural place for growth in transportation and logistics. Kern has become the location for major distribution centers.

- **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. This county alone produces 66% of California's oil, about 10% of the U.S. oil supply, and approximately 1% of the world's total oil production. Kern County has four giant oil fields (greater than 1 billion barrels of cumulative production) and as a whole, produces about 560,000 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 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 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 County; 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. The county's dependence on energy and natural resource production as part of our economic structure is reflected in the fact that all 10 of the county's top tax payers are either oil-producing and/or processing companies, renewable energy producers or mining operations.

- **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. 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% of the Navy's land for research, development, tests, and evaluations use, and 40% of the Navy's land holdings worldwide. As weapons development continues, China Lake consistently adds jobs, both military and civilian.
- **Tourism, Recreation and Entertainment** suggests 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 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.
- **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 at its three Bakersfield hospitals. Through teamwork, innovation and advocacy, Mercy and Memorial hospitals are delivering on their promise to provide excellent, affordable health care. New advancements in cardiac care at Memorial Hospital offer lifesaving options for heart patients and The Robert A. Grimm Children's Pavilion for Emergency Services will provide pediatric care for Kern's smallest residents. The Grossman Burn Center is scheduled to open at Memorial Hospital in 2018. Mercy and Memorial Hospitals together with their partner, Comprehensive Blood and Cancer Center, are dedicated to meeting the special needs of cancer patients and their families.



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. As noted above, Kern County produces 66 percent of all oil produced in California, has more than 1.3 million megawatts of operating energy. Approximately one in six jobs in Kern County are directly related to the resource sectors of forestry, fishing, hunting, mining (oil/gas), and agriculture. Growing interest in ecotourism, from white water rafting to farmer's markets, offers an insight into potential future development of a diverse and vibrant economy. The RTP 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.

### 3.5 PROJECT DESCRIPTION

The 2018 RTP 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. 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 2018 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 three times since that policy was implemented. The 2014 RTP forecast was originally adopted in 2005 and re-adopted in October 2009. The population forecast included an assumption for the economic downturn and was found to be within 1/10th of a percent of the observed 2010 census population for Kern County. The current forecast was adopted in 2015 at the beginning of the public outreach process and prepared by the chief economist for Place Works, Inc. The next scheduled update to the growth forecast will be after adoption of the 2018 RTP.

**Sustainable Communities Strategy.** As discussed earlier, the 2018 RTP includes a SCS – Chapter 4. The SCS includes land use planning strategies and policies to reduce air emissions from passenger vehicle 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.

**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 2018 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 2018 and FY 2042, the implementation period for this 2018 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 also addresses environmental justice in an appendix to the RTP. Transportation projects included in the 2018 RTP are listed below in the following tables. The projects, policies and strategies that have committed, available, or reasonably available funding sources constitute the 2018 RTP that is also referred to as the “constrained plan” or Plan.

The 2018 RTP 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’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. These projects include transit projects such as Bakersfield light rail, some high-speed rail, and Metrolink beyond 2042.

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 projects) as they may pass through environmentally sensitive areas. If these projects become reasonably foreseeable, their impacts will be addressed in future RTPs and associated PEIRs.

The following describes the major functional components of the 2018 RTP. 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 2018 RTP 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. 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 2018 RTP 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** – 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*

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;
- Conserve energy and natural resources, and develop alternatives; and
- Use and improve existing assets and infrastructure.

Examples of how the principles for growth interrelate with the RTP 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**

<b>RTP Goal/Performance Measure (PM) Category</b>	<b>Performance Measure Description</b>	<b>Performance Target</b>	<b>Applicability by Smart Mobility Place Types/Geographic Coverage</b>
Mobility	Urban, Rural, Countywide	Average Travel Time – Peak <b>Highway</b> Trips, Peak Transit Trips	Improvement over No Project Baseline
Accessibility / economic well being	Urban, Rural, Countywide	Average Travel Time to Job Centers – <b>Highway</b> Trips, Transit Trips	Improvement over No Project Baseline
Reliability/congestion	Urban, Rural, Countywide	Average level of congestion in hours	Improvement over base year
Reliability/safety	5-year forecast of vehicle and bike/ped related fatalities and rates/	Improvement over 5 year running forecast	Countywide
Efficiency/cost effectiveness	Average Daily Investment per Passenger Mile Traveled – Highways, Transit	Improvement over Countywide Average	Urban, Rural, Countywide
Livability/customer satisfaction	Average Trip Delay Time in Hours	Improvement over Base Year	Urban, Rural, Countywide
Environment/health	Percentage Change NOx/PM by air basin	Improvement over Base Year	Air Basins (San Joaquin Valley, Mojave Desert, Indian Wells Valley)
Environment/health	Percentage Change in Households within 150' of Roadway Volumes Greater than 100,000	Improvement over Base Year	Urban, Rural, Countywide
Sustainability/preservation	Percentage Change in Maintenance Dollars Per Lane Mile	Improvement over Base Year	Countywide
Equity	Percentage of Expenditures versus Passenger Miles Traveled in 2035 – Highways, Transit	Improvement over Countywide Average	Urban, Rural, Countywide
Land Consumption	Percentage of Farmland outside City Spheres of Influence	Improvement over No Project Baseline	Countywide

Source: 2018 Kern COG RTP

One of the most important goals of the 2018 RTP 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 and market demand (within existing zoning) in order to model anticipated development in the year 2042. However, it will be up to individual jurisdictions to determine consistency of individual projects

with the RTP (including the SB 375 goals). It is not the intent of the RTP 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. 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 November 19, 2015 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 2012. The report states,

*“This is a good time to reevaluate growth trends. From the early 2000s to 2006, California, like the nation as a whole, experienced a housing boom. From 2006 to about 2012, the housing market crashed, and the economy suffered through a major recession, which is well represented in 2010 Census data. The economy began growing again in 2010, and by 2013 the housing market was once again growing. Thus, there are now some positive data points on which to base forecasts, a situation that has not been present for several years.”*

The next scheduled update will be during the two-year window starting November 2018.

### ***Regional Population, Housing, and Employment Forecasts***

As of 2018, the population in Kern County was estimated to be 905,801 persons.<sup>1,2</sup> Between the 2000 and 2010 census, the population of Kern County grew by 27 percent, making it the third fastest growing county in California.<sup>3,4</sup> Kern has recently surpassed San Francisco and Ventura counties in total

<sup>1</sup> California Department of Finance (DOF). 2018. “E-1 Population Estimates for Cities, Counties, and the State- January 1, 2017 and 2018.”

<sup>2</sup> DOF released the January 1, 2018 and revised 2017 estimates in early May 2018 (approximately 2 weeks prior to release of the Draft EIR). The new population estimate was 1/4 percent higher than would be estimated by using the DOF forecast and interpolating from the July 1, 2017 base year data used for modeling. This higher than anticipated growth supports the higher Kern COG adopted growth forecast assumption when compared to the most recent DOF adopted forecast.

<sup>3</sup> California Department of Finance (DOF). 2017. “E-4 Population Estimates for Cities, Counties, and the State- 2001-2010, with 2000 & 2010 Census Counts .” <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-4/2001-10/>

population and is now the eleventh most populated in the state.<sup>5</sup> The DOF estimates that population in Kern County increased at an average annual compounded rate of 1 percent between 2011 and 2018, similar to the rate for California as a whole. As of July 2017, net migration over the past year was 3,363 and new growth due to natural increase (births minus deaths) was 7,540. This is a significant increase over 2016 when net migration was negative.<sup>6</sup> The recent up-tick in growth may reflect a long-anticipated boom in millennials entering the housing market and starting families. This plan forecasts that between 2018 and 2042 population growth will continue to accelerate, growing at an average rate of 1.9 percent per year. However, down from the historic growth rate of 2.1 percent since 1980.<sup>7</sup>

Over the next 26 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 plans within Kern County designate sufficient land to absorb growth at twice the rate forecasted by 2042, assuming water and urban services are available. At current growth rates, Kern's population will grow by 64 percent within the life of the 2018 RTP.<sup>8</sup>

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. At some point, it is anticipated that significant spillover from the Southland will be felt first in the Rosamond and Frazier Park areas. Centennial - a new proposed community of 19,333 housing units and 7,363,818 square feet of business park uses on Tejon Ranch in northern Los Angeles County - may siphon some of the anticipated growth from southern Kern; however, this project could also induce additional growth in the Frazier Park area. The most recent forecast assumes that growth's positive and negative factors are growing closer to ultimately canceling each other out.

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

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4 Kern COG 2018

5 California Department of Finance (DOF). 2017. "E-1 Population Estimates for Cities, Counties, and the State-January 1, 2016 and 2017."

6 California Department of Finance (DOF). 2018. "E-2 California County Population Estimates and Components of Change by Year - July 1, 2010 - 2017." <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-2/index.html>

7 Kern COG. "2018 RTP/SCS, Table 3-5: Growth Trends for Kern County and Selected Communities." p. 3-10.

8 Ibid.

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, government work, and wholesale/retail trade, consistent with historic data.<sup>9</sup> From 2016 – 2017 the unemployment rate dropped below double digits for the 9<sup>th</sup> time in the past 27 years to 9.2 percent.<sup>10</sup>

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<sup>11</sup> 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 continues 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 that 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. The question is not if, but when we will see the forecasted growth in Kern. Forecast trends will be adjusted again during the next RTP update in the next four years.

### 3.5.3 Sustainable Communities Strategy

The passage of SB 375 gave Kern COG a new area of responsibility and provides 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 the California Air Resources Board to determine per-capita GHG emission reduction targets for each MPO in the state at two points in the future (2020 and 2035).

On September 23, 2010, CARB set targets for lowering emissions in the San Joaquin Valley. The targets call for a 5 percent reduction in per capita emissions from passenger vehicles and light trucks by 2020, and a 10 percent reduction by 2035 through land use and transportation planning.

Because GHG emissions in the transportation sector relate closely to vehicle miles travelled (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 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

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<sup>9</sup> California Employment Development Department. 2017. “Labor Market Information, Bakersfield MSA, Industry Employment & Labor Information – by Annual Average March 2017 Benchmark.” And Kern COG 2018

<sup>10</sup> Ibid.

<sup>11</sup> Smart Asset, <https://smartasset.com/mortgage/quicken-loans-review#california/most-affordable>, 2017



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.

### ***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 Chapter 4 on the Sustainable Community Strategy.

### ***Housing the Kern Region's Population***

The SCS Strategy Maps (**Figures 3.0-2, Transit Priority and Strategic Employment Place Types, Figure 3.0-3, Transit Priority and Strategic Employment Place Types – Metro Bakersfield, and 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.

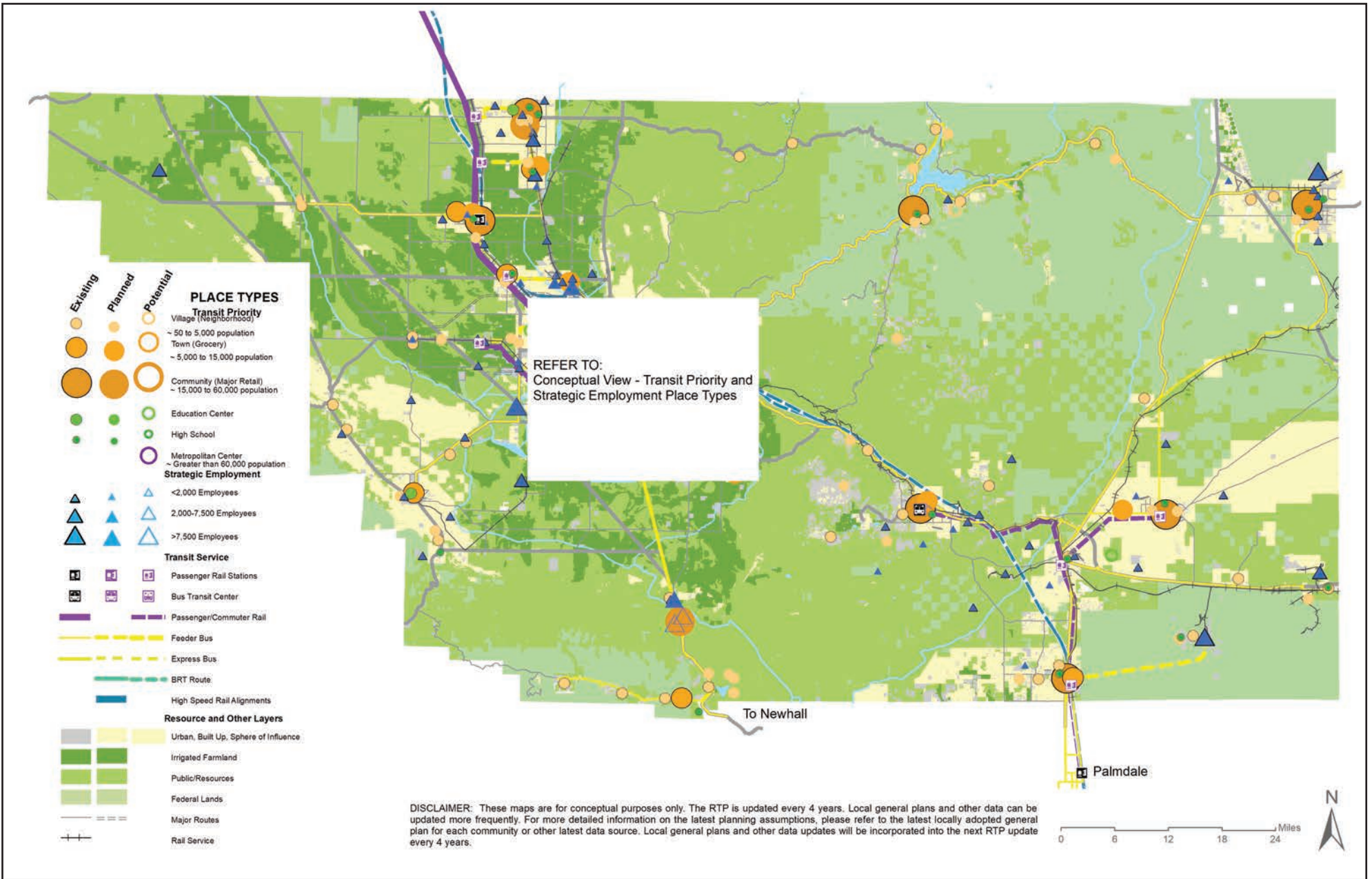
To develop these conceptual maps staff identified existing, planned and potential Transit Priority and Strategic Employment Place Types. The map legend identifies which place types are existing by using a dark outline, planned place types have no outline, and potential place types are hollow. Aerial 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. And local jurisdiction staff provided feedback on final placement of the place types 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 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 snap shot 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)***

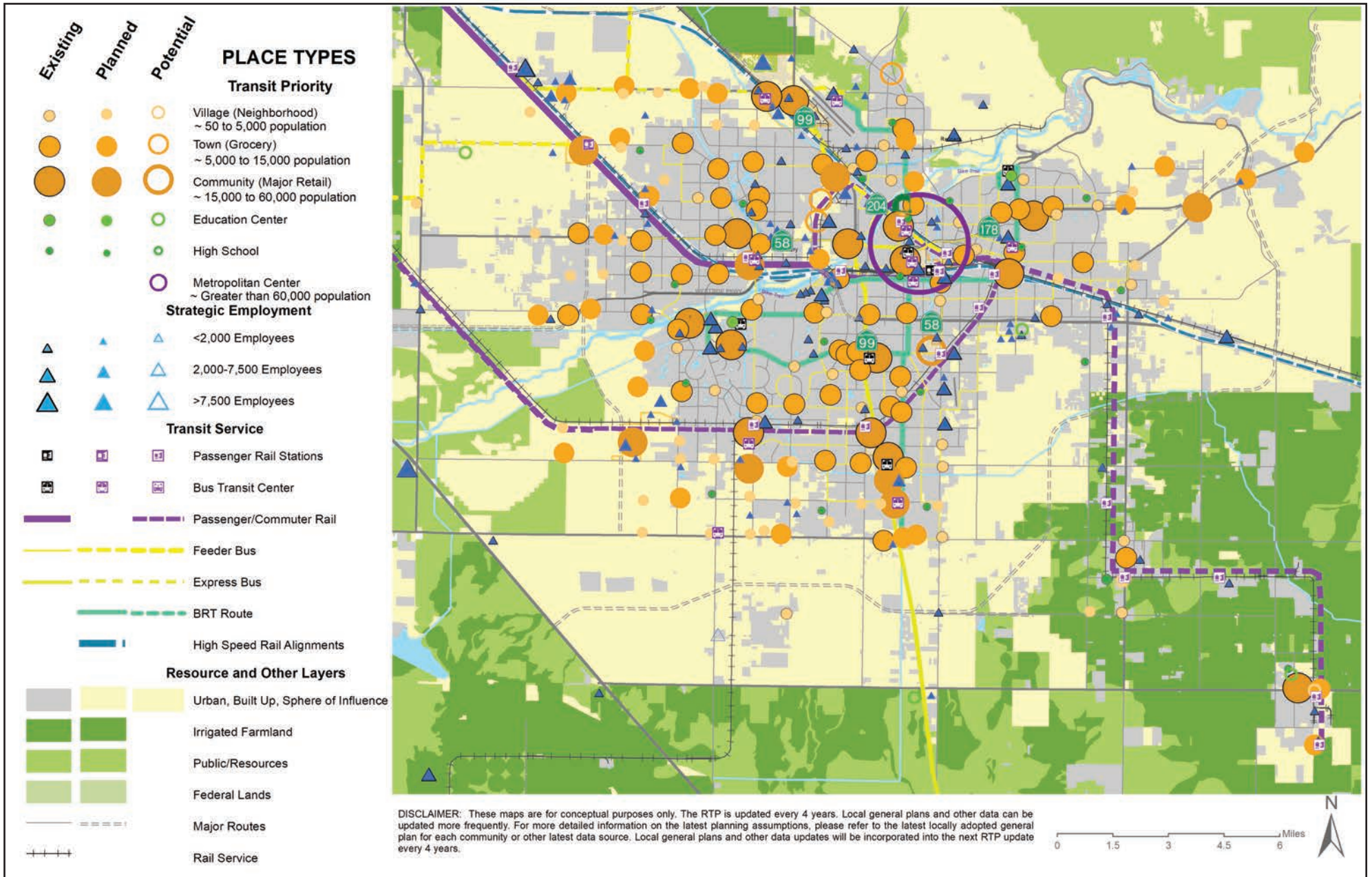
Metro areas are the regions primary business, civic, commercial and cultural centers that can exceed 60,000 in population. These districts have significant amounts of employment and corresponding residential uses and retail, typically clustered in multistory buildings and include easy access to neighboring 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 a number of 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.



SOURCE: Kern Council of Governments, 2018

FIGURE 3.0-2

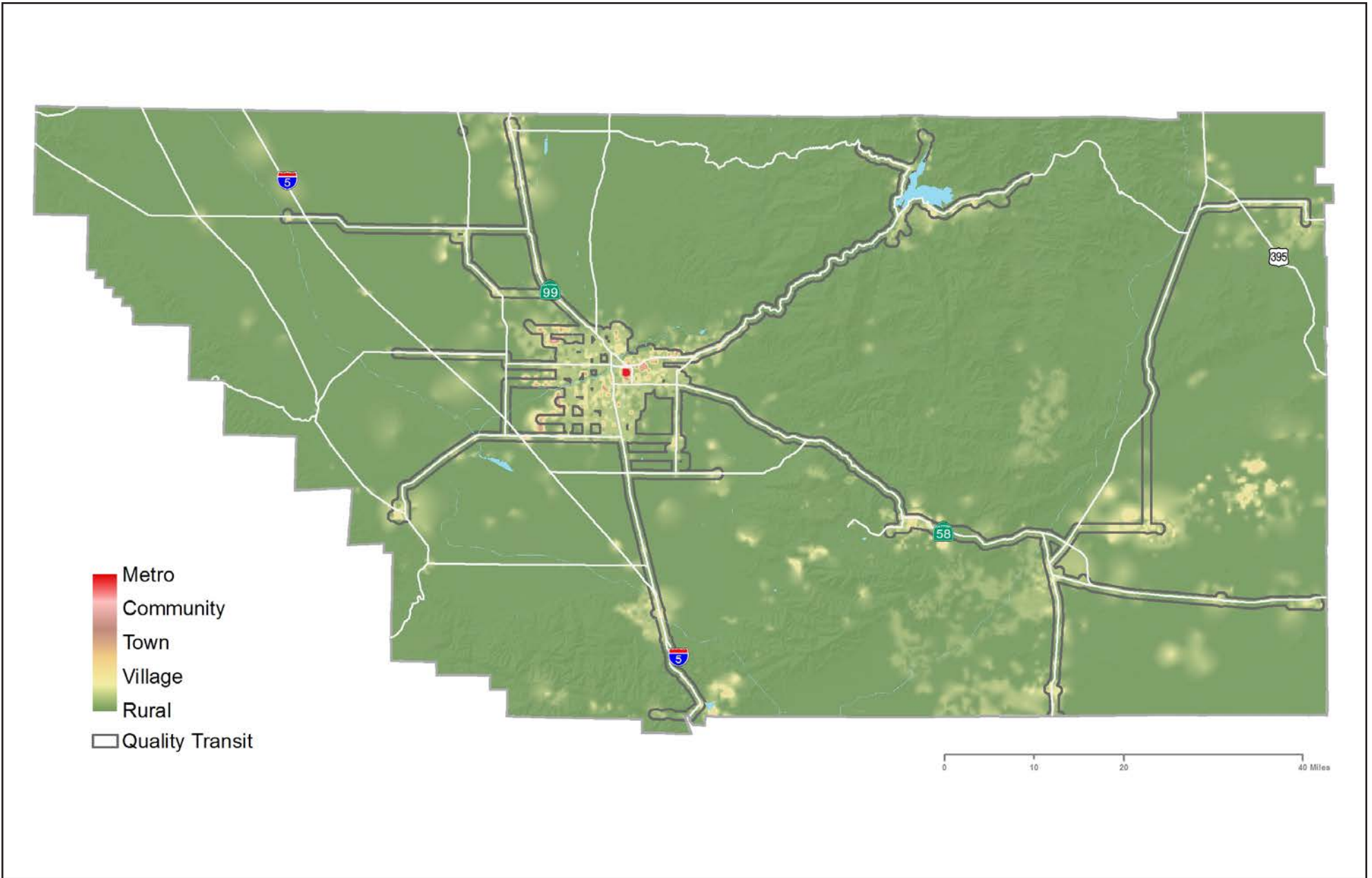
## Transit Priority and Strategic Employment Place Types



SOURCE: Kern Council of Governments, 2018

FIGURE 3.0-3

Transit Priority and Strategic Employment Place Types - Metro Bakersfield



SOURCE: Kern COG, Regional Transportation Plan, 2018

FIGURE 3.0-4

Forecasted Development Pattern - Kern Region 2035

### *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 and draws 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 a geographic information system. Kern COG also interviewed staff at the universities, colleges, and trade schools to insure 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**

Managing transportation demand and making transportation system improvements are major components of the SCS. However, the 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 SCS includes both a transportation component (described above) and a land use component (described below). In summary, under SB 375, an 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 the 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 **Section 1.0**, qualifying projects that meet statutory criteria and are consistent with the SCS are eligible for streamlined environmental review.

The SCS demonstrates the region's ability to attain and exceed the GHG emission reduction targets identified by CARB. 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.

One of the key components of the 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 2018 RTP and summarized in this 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 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, was developed in anticipation of Kern COG's 2014 SCS. The plan provides for gradual phasing of near-, mid- and long-term improvements. The near-term improvements were implemented immediately after the plan was adopted in 2012.

The Long-Range Transit Plan provides for an expansion of transit priority areas that are eligible for environmental streamlining provisions under SB 375. The maps in Figure 4-13 of the SCS illustrate 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, population served by transit priority areas has already expanded more than 20 times. Another 38% increase is anticipated by 2020, and an increase of up to 225% 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 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 L.A. 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 Express Amtrak service and for the high-speed rail project, should it move forward.

### **3.5.5 Regional Housing Needs Assessment (RHNA)**

Kern COG prepared the RHNA of low- and very low-income housing for each jurisdiction in 2014 for the 2014 RTP/SCS. The 2013 - 2023 RHNA Plan was adopted by the Kern COG Board on June 19, 2014, and approved by the California Department of Housing and Community Development (HCD) on September 10, 2014. The RHNA approval met the deadline to ensure that it does not have to be updated until the 2022 RTP cycle. Each jurisdiction was assigned a forecast of housing need to be used in local general plan housing elements. SB 375 required local jurisdictions to zone sufficient land to accommodate their low-income housing needs by 2015. 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**, 2018 RTP – Forecast and Modeling Assumptions) indicate a growing interest for 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 2023 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 low-income housing.

The Kern region's official regional housing need from HCD for the projection period January 2013 – December 2023 was a minimum of 67,675 housing units. The 2014 RTP/SCS exceeded and was consistent with the minimum required by the HCD Regional Housing Need Determination. Of these, approximately 41% are expected to be in the very low- and low-income category (affordable to those who make less than 80% of area median income), 17% are expected to be in the moderate-income category (affordable to those who make between 80% and 120% of median income) and 42% are expected to be offered at the above moderate-income category. The allocation represents the minimum housing need that Kern COG's RHNA plan must address in total and also for very-low, low, and moderate-income ranges. The SCS incorporated the overall RHNA target for the Kern region and provided a forecasted development pattern that showed where new housing growth 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 2018 RTP:

- 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).
- Quantifies the effect of policies and programs in the RTP that reduce transportation-related emissions in the region.
- Compares the emissions reductions anticipated with implementation of the SCS with the regional targets.

#### ***Comparison to Reduction Targets***

On September 23, 2010, CARB set targets for lowering emissions in the eight San Joaquin Valley counties. The targets call for a 5% reduction in per capita emissions from passenger vehicles and light trucks by 2020, and a 10% reduction by 2035 through land use and transportation planning. At the time of the writing of this document, new targets were being proposed for the third cycle RTP/SCS by CARB but were not anticipated to be put into effect until after the scheduled adoption of this plan.

Based on the analysis of strategies included in the SCS, CO<sub>2</sub> emissions are anticipated to be 14.1% lower than 2005 levels by 2020 and 14.2% lower by 2035, exceeding the targets established by CARB in 2010.

## GHG Modeling

The analysis of strategies for the 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 7 other San Joaquin Valley COGs using the best available information and best modeling practices. The modeling reflects all the strategies that are technically feasible to model. No off-model adjustments have been made as part of this analysis. 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 Greenhouse Gas Emissions and Vehicle Trips Reductions**

Indicators and Measures	2005	2017	2020	2035	2042
Total Population	762,000	898,825	988,900	1,313,100	1,469,500
<b>Vehicle Miles Traveled (VMT)</b>					
VMT per Weekday (Miles, in Thousands)	22,236	22,934	25,111	32,770	35,299
VMT by Passenger Vehicles per Weekday (-XX, Miles, in Thousands)	18,452	14,775	16,434	22,472	25,021
Per Capita VMT (All Travel)	29.18	25.52	25.39	24.96	24.02
Per Capita VMT SB 375	24.22	16.44	16.62	17.11	17.03
Difference between 2005 Base Per Capita VMT (24.22 miles)	0.0%	-32.1%	-31.4%	-29.3%	-29.7%
<b>SB 375 CO<sub>2</sub> Emissions</b>					
Total SB 375 CO <sub>2</sub> Emissions	6,357	7025	7661	10,162	11,323
Per Capita SB 375 CO <sub>2</sub> Emissions by Passenger Vehicles per Weekday (lbs)	16.70	15.63	15.49	15.48	15.41
Difference between 2005 Base Per Capita CO <sub>2</sub> (18.03 lbs Emfac2014)	0.0%	-13.3%	-14.1%	-14.2%	-14.5%
Adjusted CO <sub>2e</sub> Pounds Per Capita Reduction For Comparison with EMFAC11**	N/A	NA	-12.5%	12.7%	13.6%
SB 375 Targets	0.0%	NA	-5.0%	-10.0%	NA

Source: Kern COG, 2018

\* Modeling for 2018 RTP uses Emfac2014. Results for 2005 differ between Emfac2011 and Emfac2014.

\*\* Targets were developed using Emfac2011, adjustment based on difference between Emfac2011 and Emfac2014 for the same model runs.

In addition to the Countywide emissions reductions per capita, Kern COG is developing a way to analyze travel by sub-area of the County to provide feedback to each community toward achieving SB 375 goals.

### 3.5.7 Incentives and Other Approaches to Reducing GHG

The 2018 RTP 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 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 2018 RTP, 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, Proposed Greenhouse Gas Emissions and Vehicle Trips Reduction 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  
Proposed Greenhouse Gas Emissions and Vehicle Trips Reduction Strategies**

Strategy	Responsible Party(ies)	Notes
Construct new transit lines	COG, Transit Agencies, Local Jurisdictions	Golden Empire Transit (GET) 2012 Long Range Transit Plan (LRTP)
Expanded Bus Routes Coordinated with Planned Centers	COG, Transit Agencies, Local Jurisdictions	LRTP
Expand Passenger Rail Service (Metrolink, Amtrak, High Speed Rail)	COG, State, Metrolink, San Joaquin Valleywide Air Pollution Study Agency (SV JPA), High Speed Rail Authority (HSRA)	2012 Kern Commuter Rail Study (KCRS)

Strategy	Responsible Party(ies)	Notes
Increase service (e.g., change transit headways, increase network connectivity)	Transit Agencies	L RTP
Expanded Transit Service Area	Transit Agencies	L RTP
Rapid Bus/Shorter Wait Times	Transit Agencies	L RTP
Upgrade transit service (e.g., improve service to express bus, etc.)	Transit Agencies	L RTP
Express Transit	Transit Agencies	L RTP
Bus Rapid Transit	Transit Agencies	L RTP
Improve accessibility (e.g., change bike/walk access distance to transit stations, change auto access distance to transit stations)	COG, Transit Agencies, Local Jurisdictions	L RTP
Optimized Bus Routes	Transit Agencies	L RTP
<b>Transportation Demand Management:</b>		
Promote carpooling, vanpooling, telecommuting and teleconferencing	COG, Local Jurisdictions	Commuter Kern and E-Trips programs
Expand Vanpools	COG, CalVans, Local Jurisdictions	2012 Kern Memorandum of Understanding with CalVans
Promote walking and biking (e.g., new class I bicycle facilities, inter-city bikeways)	COG, Local Jurisdictions	2017 Active Transportation Plan (ATPlan) - accelerated in intensified alternative
Implement employer-based trip reduction strategies and Indirect Source Rule	COG, Air Districts	San Joaquin Valley Air Pollution Control District Rules 9410 & 9510
<b>Pricing:</b>		
Change in auto operation cost/user fees	COG, State	Increase in fuel/non-fuel cost consistent with other regions
Increase the cost of parking	Local Jurisdictions	Parking rates downtown
Change in transit fares	Transit Agencies	Reduced fares for seniors/ADA
<b>Transportation System Management:</b>		
Implement Intelligent Transportation Systems (ITS)/Traffic management (e.g., change auto travel times, change highway free-flow speed, 511 travel info, signalization/synchronization, etc.)	COG, Caltrans, Local Jurisdictions	New Kern 511 travel info system, continued signalization/synchronization program
Add HOV facilities	COG, Caltrans, Local Jurisdictions	Caltrans ramp metering plan
<b>Road Projects:</b>		
Delay capacity increasing project (e.g., new beltway)	COG, Local Jurisdictions	S&W Beltways delayed
Add general purpose lanes (e.g., reduce congestion and out-of-direction travel)	COG, Caltrans, Local Jurisdictions	Includes Centennial connector and Hageman flyover projects
<b>Land Use:</b>		
Modify distribution of households, population, jobs or other variables (infill along major transit corridor consistent with GP)	Local Jurisdictions	Bakersfield & Tehachapi - Consistent with Core Area Impact Fee Development Incentive.
Rebalance housing closer to employment/shopping areas	Local Jurisdictions	Assumes more shopping opportunities and housing in outlying communities near jobs
Market based demand shift to smaller lots/multifamily	Local Jurisdictions	Primarily in Bakersfield
Improve the pedestrian environment (walk distance to transit centers)	COG, Local Jurisdictions, Air District	Incentivized by Air District ISR rule

Strategy	Responsible Party(ies)	Notes
<b>Goods Movement (non SB 375):</b>		
Relief of Tehachapi Pass rail bottleneck	State, Class I Railroads	Increase class 1 rail capacity by 30 percent
Increase activity at intermodal rail freight facilities	COG, Local Jurisdictions	Delano UP Cold Connect, and Shafter WIP intermodal
Smoother traffic flows through major highway corridors	COG, Caltrans, Local Jurisdictions	SR-58 and SR-99 improvements
Distribution centers closer to center of population	Local Jurisdictions	Geographic center of population for California is in Kern

Source: 2018 Kern COG RTP

### 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 2018 Regional Transportation Plan 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:

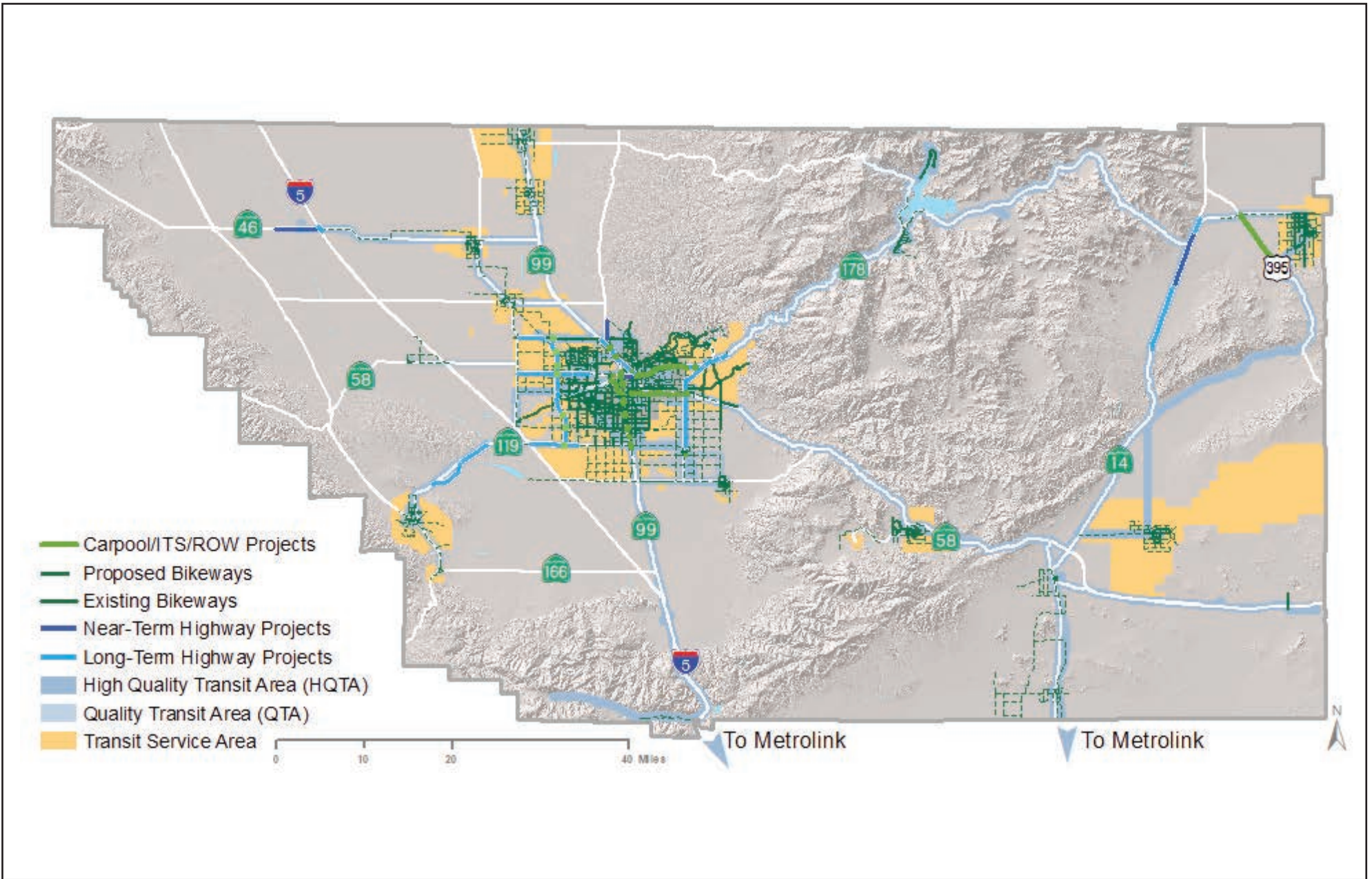
- A revenue-constrained transportation network funded by financial resources expected between now and 2042.
- Transportation demand management (TDM) measures.
- Transportation system management (TSM) measures.
- Pricing measures.

A summary of RTP projects is provided in **Tables 3.0-5** through **3.0-8**. **Figure 3.0-5** provides a map of the RTP projects. **Figure 3.0-6** provides a map of the RTP bicycle network.

**Table 3.0-5**  
**2014 through 2040 – Transit and Other**

<b>Project</b>	<b>Location</b>	<b>Scope</b>
Vanpool	Countywide	Vanpools - build and maintain fleet of 500 Vans by 2040
Park and Ride	Various	Park and Ride Lots (1,500 spaces)
<b>Bus Service</b>	<b>Metro Bkd</b>	<b>Full size natural gas buses</b> Full size natural gas buses – 120 replacement buses Full size natural gas buses – Fixed Routes - 130 new buses Full size natural gas buses – Bus Rapid Transit - 24 new buses Full size natural gas buses – Express Service - 36 new buses
<b>Bus Service</b>	<b>Countywide</b>	<b>Full, midsize and mini-van size natural gas buses</b> Full size natural gas buses – Express Service - 10 new buses Midsize natural gas buses – 120 replacement buses Midsize natural gas buses – 120 new buses Minivan/buses – 45 replacement buses Midsize electric buses - 20 electric midsize replacement buses
Bus Service	Metro Bakersfield	Two Transit Maintenance Stations
Bus Service	Metro Bakersfield	Three transfer stations
ITS	Countywide	ITS related improvements/upgrades
Aviation	Countywide	Capital, Maintenance and Operational Improvements
Passenger Rail	Rosamond	Metrolink extension – Palmdale/Lancaster to Rosamond
Passenger Rail	Bakersfield	Amtrak Station – Phase II
Passenger Rail	Bakersfield	High Speed Rail Station – Bakersfield
Passenger Rail	Region	High Speed Rail Alignment and Facilities Fresno to Bakersfield
Passenger Rail	Shafter/Wasco	High Speed Rail Heavy Maintenance Facility

Source: Kern COG 2018 RTP

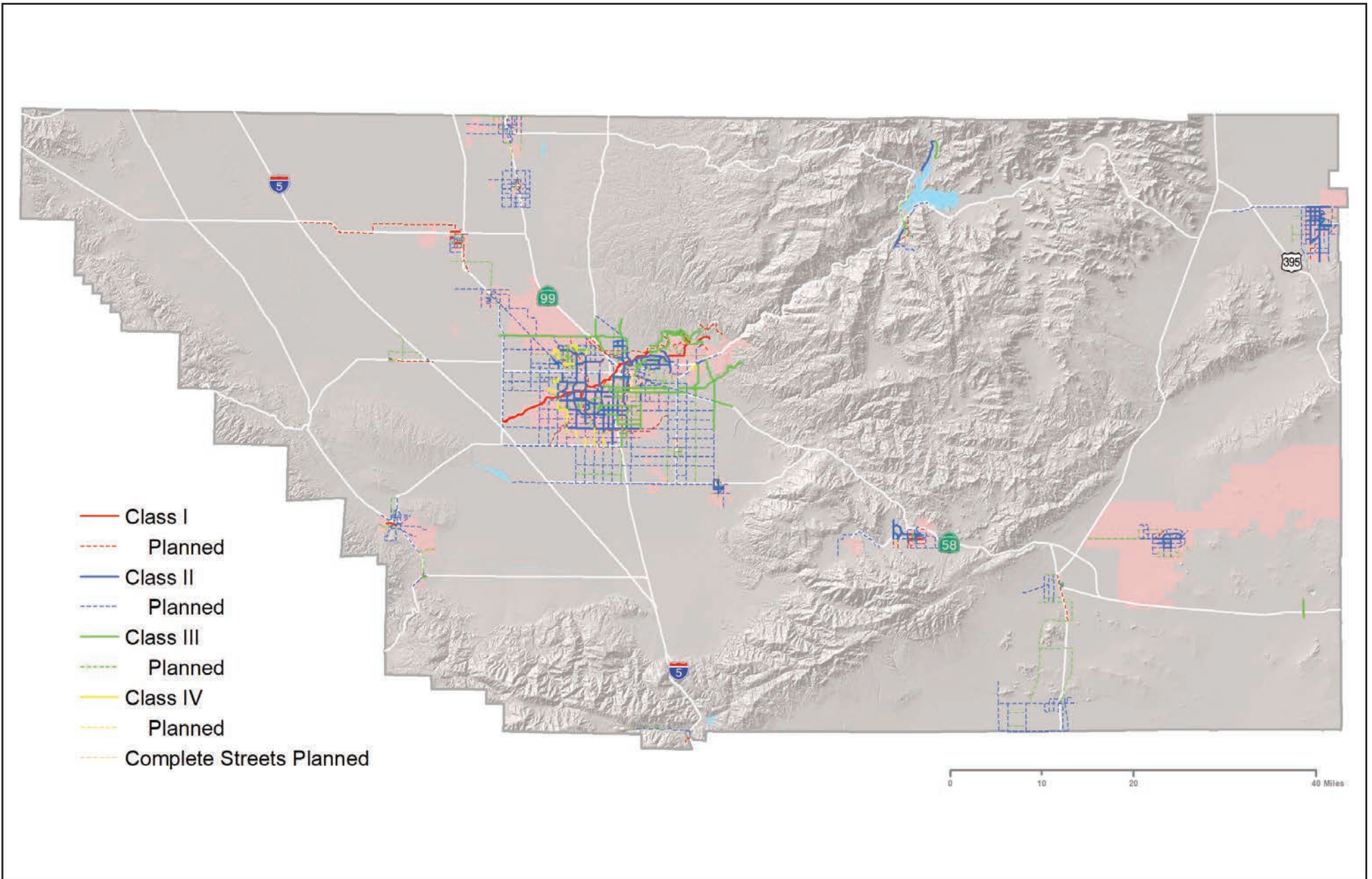


SOURCE: Kern Council of Governments, 2018

FIGURE 3.0-5

Constrained Projects (2018-2042)





SOURCE: Kern Council of Governments, 2018

FIGURE 3.0-6

RTP Bicycle Network

**Table 3.0-6  
2018 through 2042 Highway Operation Improvements**

<b>Project</b>	<b>Location</b>	<b>Scope</b>
<b>HOV Lanes</b>	<b>Bakersfield</b>	Various State Routes - HOV lanes Westside Parkway - Heath Road and Stockdale Highway to SR 58 at Fairfax State Route 178 - Existing west freeway terminus to Oswell Street
<b>HOV Ramps</b>	<b>Bakersfield</b>	Install HOV Ramps and metering improvements at various locations SR 99 Interchange at Snow Road - HOV Ramp Metering SR 99 Interchange at Olive Drive - HOV Ramp Metering SR 99 Interchange at Rosedale Hwy - HOV Ramp Metering SR 99 Interchange at California Ave - HOV Ramp Metering SR 99 Interchange at Ming Ave- HOV Ramp Metering SR 99 Interchange at White Lane- HOV Ramp Metering SR 99 Interchange at Panama Lane- HOV Ramp Metering SR 99 Interchange at SR 119 - HOV Ramp Metering SR 58 Interchange at Oak Street - HOV Ramp Metering SR 58 Interchange at H-Chester Ave - HOV Ramp Metering SR 58 Interchange at Union Street - HOV Ramp Metering SR 58 Interchange at Cottonwood Road - HOV Ramp Metering SR 58 Interchange at Mount Vernon - HOV Ramp Metering SR 58 Interchange at Oswell Street - HOV Ramp Metering SR 58 Interchange at Fairfax Road - HOV Ramp Metering SR 58 Interchange at Weedpatch Hwy - HOV Ramp Metering SR 178 Interchange at SR 204 - HOV Ramp Metering SR 178 Interchange at Beale Avenue - HOV Ramp Metering SR 178 Interchange at Haley Street - HOV Ramp Metering SR 178 Interchange at Mount Vernon Street - NOV Ramp Metering SR 178 Interchange at Oswell Street - HOV Ramp Metering SR 178 Interchange at Fairfax Road - HOV Ramp Metering SR 178 Interchange at Morning Drive - HOV Ramp Metering West Beltway Interchange at 7 <sup>th</sup> Standard Road - HOV Ramp Metering West Beltway Interchange at Olive Drive - HOV Ramp Metering West Beltway Interchange at Rosedale Hwy - HOV Ramp Metering West Beltway Interchange at Stockdale Hwy - HOV Ramp Metering West Beltway Interchange at Ming Avenue - HOV Ramp Metering West Beltway Interchange at White Lane - HOV Ramp Metering West Beltway Interchange at SR 119 - HOV Ramp Metering

*Source: Kern COG 2018 RTP*

**Table 3.0-7  
2018 through 2020 Major Highway Improvements**

<b>Project</b>	<b>Location</b>	
Route 14	Inyokern	Redrock/Inyokern Road to Route 178 – widen to four lanes (Phase 1)
Route 46	Lost Hills	Brown Material Rd to I-5 – interchange upgrade at I-5 - Phase 4A
Route 46	Lost Hills	Brown Material Rd to I-5 – interchange upgrade at I-5 Phase 4B
Route 65	Bakersfield	James Rd. to Merle Haggard Dr. – widen to four lanes
Route 99	Bakersfield	Olive Drive – construct interchange upgrades
Route 178	Bakersfield	Rt. 178 (24 <sup>th</sup> /23 <sup>rd</sup> St) from SR-99 to M Street – widen existing highway
Route 184	Bakersfield	At Union Pacific Railroad – construct grade separation
Hageman Flyover	Bakersfield	Knudsen Drive to Route 204 – construct extension
Centennial Corridor	Bakersfield	I-5 to Route -58/Cottonwood Rd – element of the Bakersfield Beltway System - construct new freeway and/or operational improvements

*Source: Kern COG 2018 RTP*

**Table 3.0-8  
Summary of Constrained Projects**

<b>Program Category</b>	<b>Totals</b>
Transit & Other	2,072,200,000
Operational Improvements - HOV Lanes/Ramp Metering	297,000,000
Non-Motorized	488,000,000
Local Streets and Roads	1,685,000,000
Major Highway Improvements 2018-2022	\$966,400,000
Major Highway Improvements 2023-2027	\$296,400,000
Major Highway Improvements 2028-2032	455,793,000
Major Highway Improvements 2033-2037	1,101,693,000
Major Highway Improvements 2038-2042	68,000,000
Freight Rail	160,000,000
<b>Grand Total</b>	<b>\$7,502,386,000</b>

*Source: Kern COG 2018 RTP*

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 which achieve RTP goals. This section discusses the following components of a sustainable transportation system to serve the needs of the Kern region:

- A revenue-constrained transportation network funded by financial resources expected between now and 2042.

- Transportation Demand Management (TDM) measures.
- Transportation System Management (TSM) measures.
- Pricing measures.

### ***Revenue-Constrained Network***

Important parts of the revenue-constrained transportation network, which is described more fully in Chapter 5, Strategic Investments, includes 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, also are integral to the overall transportation network.

### ***Rail/Public Transit***

The overarching goal of the rail and public transit investments detailed in the 2018 RTP 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 2018 RTP include:

- 310 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

### ***Bicycles and Pedestrians***

Investments that promote bicycling and walking also are an important part of the revenue-constrained transportation network. In 2017, 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 disadvantaged communities 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 1,244.7 miles of new Class I, Class II and Class III bicycle paths, lanes and routes in the Kern region. The Plan also calls for 242.2 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 three years of that plan Kern has already received \$32 million through the state Active Transportation Program, 86% of the funding forecasted in the 2014 RTP/SCS. However, since that plan the identified need has doubled with the adoption of the 2017 Active Transportation Plan. Still, staff forecasts that we should be able to fully fund the projects in the Active Transportation Plan over the next 24 years should our recent funding success continue.

Bicycle and pedestrian measures identified in the 2017 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 3.0-9, Bicycle Facility Mileage in Kern County**.

**Table 3.0-9  
Bicycle Facility Mileage in Kern County**

	<b>Existing</b>	<b>Planned (2042)</b>
Unincorporated County	97	604
Arvin	5	17.2
Bakersfield	143.0	672
California City	10.0	39.4
Delano	0.0	38.8
Maricopa	0.0	5
McFarland	0.0	48.5
Ridgecrest	26	70
Shafter	0.0	46.7
Taft	1	37.1
Tehachapi	4	36.8
Wasco	2	51.5
<b>Total</b>	<b>288</b>	<b>1,667</b>

*Source: Kern COG 2018*

Bicycle and pedestrian measures identified in the 2018 RTP (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 2018 RTP (see **Chapter 5**) include:

- As roads are maintained, bikeways should be implemented and upgraded per local development standards.
- Fund a Pedestrian Facilities Plan for the County of Kern and the incorporated cities.
- Encourage COG member jurisdictions to implement adopted local bicycle plans and incorporate bicycle facilities into local transportation projects.

### ***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 2018 RTP include:

- Free car-pool and van-pool programs
- Transit
- Park and ride lots
- Encourage flextime programs
- Intelligent transportation system technologies

### ***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 2018 RTP (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

### ***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 2018 RTP (see **Chapter 5**) include:

- Assume a less than 5% net increase in vehicle operating costs by 2035 consistent with the San Joaquin Valley Model Improvement Program 2 (MIP2) validated methodology used by the 7 COGs to the north and other regions statewide. 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.

### **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 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 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 is divided into the following action elements:

- Freight Movement Action Element
- Public Transportation 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. In 2017, Kern County for the first time advanced to the number one agricultural producing county in the nation and is the number two producer of oil in the lower 48 states. These industries rely heavily on bulk 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.

### ***Proposed Actions***

#### Near-Term, 2018–2020

- Develop an annual freight movement stakeholders group for coordinating preservation and expansion efforts.
  - 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 eastbound SR 58 from General Beale Road to the Bena Road overcrossing.
- Program infrastructure improvements such as the widening of Seventh Standard Road in response to proposed freight movement activities in the area.
- Continue development of Shafter Rail Terminal for intermodal freight transfer activities.
- Continue development of the Delano UP Cold Connect Facility for intermodal freight shipping to the East Coast.

#### Long Term, 2021–2042

- Widen State Route 184 to four lanes to respond to increasing agricultural trucking activity.
- Widen Wheeler Ridge Road to four lanes as a gap-closure measure to tie I-5 to SR 58 via SR 184.
- Construct new SR 58 freeway through Metropolitan Bakersfield from existing SR 58 at Union Avenue to SR 99 near Golden State Avenue (SR 204), continuing west to I-5. This freeway component would relieve some of the congested truck movement on SR 99.
- Expand rail service to existing distribution centers throughout the County.

### ***Public Transportation Action Element***

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 sixteen Kern County communities and has been experiencing some challenges. From 2009/10, to 2014/15 public transit services in Kern County saw a 21% reduction in passengers from 8.4 million to 6.5 million passengers. However, during that same period transit bus service nationally saw a 5% reduction and is at

its lowest level in more than 20 years. Potential causes of these challenges include an improving economy and lower fuel prices that allow more people to afford their own vehicle. Also, there appears to be a relationship between shared mobility technology using private smart phone application services (i.e. Urber, Lyft, Waze, etc.) that may be affecting transit ridership. Kern is addressing this issue with new studies that are helping to navigate through these new transit challenges.

***Proposed Actions***

**Near Term, 2018–2020**

- GET should decrease emphasis on timed connections at transit centers.
- New GET transit center at CSU Bakersfield (begin construction in 2018).
- Increased GET service to CSU Bakersfield and Bakersfield College
- Faster GET crosstown trips:
  - New Express routes
  - New “Rapid” routes
  - More direct routes
- Refine KT scheduling practices.
- Consider KT route reconfiguration within downtown Bakersfield.
- Analyze KT stop placement.
- Continue discussions with the Southern California Regional Rail Authority regarding the extension of Metrolink from Lancaster to Rosamond.
- Initiate discussions with the State regarding adding stops to Amtrak San Joaquin service between Bakersfield and Wasco.
- Monitor advancement of the California High-Speed Rail (HSR) project.

**Long Term, 2021–2042**

- Introduce “full” GET Bus Rapid Transit.
- GET Crosstown service connecting one side of Bakersfield to the other.
- GET Circulator services within neighborhoods or around outlying areas of Bakersfield.
- Continuation of GET Express routes.
- Introduce GET hybrid Circulator/Express service.
- Rapid bus improvements.
- Introduce Express bus service along SR 178/24th Street/Rosedale Highway and SR 99.
- Truck climbing lane along eastbound SR 58.
- Consider Bus Rapid Transit in exclusive lanes with traffic signal priority.
- Consider additional Express bus service.
- Consider ramp metering.

- Consider peak period only HOV lanes.
- Consider converting BRT corridors to light rail transit.
- Consider additional peak period HOV lanes.
- Continue pursuing extension of Metrolink from Lancaster to Rosamond.
- 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. According to the Kern COG the statistically valid 2017 Community Survey, 20 percent of residents reported a commute time of 10 minutes or less. The climate and terrain of the region is favorable for active transportation, with many clear, dry days and moderate temperatures. 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.

### ***Proposed Active Transportation Actions***

#### Near Term, 2018–2020

- 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.
- 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, 2021–2042

- 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.
- 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<sub>2</sub>) 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 sector. 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. According to the US Environmental Protection Agency in 2015, 27 percent of total US greenhouse gas emissions were from the transportation sector. 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 two decades of air emission reduction efforts at the national, state, regional, and local levels have produced significant improvements to our nation's air quality. The Kern region has an extremely unique geographic landscape and makeup consisting of two air basins – the San Joaquin Valley and Eastern Kern Air Basins. Of the main criteria pollutants identified in the National and State Ambient Air Quality Standards, both Ozone and Particulate Matter currently hold a status of nonattainment within the Kern region. 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 (TCM) have received a high level of attention since the passage of the state and federal Clean Air Acts and congestion management legislation. 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 particulate matter 2.5 and 10. According to the state and federal Clean Air Acts, the worst nonattainment areas must ensure that “all feasible measures” be implemented to reduce harmful air emissions. Goals identified in the 2018 RTP, including livability and sustainability, focus on carrying out these requirements to achieve standards for healthy air quality. The most typical and successful Transportation Control Measures 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 Transportation Control Measures being implemented in Kern, see the most recent adopted Federal Air Quality Conformity Analysis document available at: <http://www.kerncog.org/publications/regional-transportation-aq-conformity>. The 2018 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, 2018 – 2020

- 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.
- Park and Ride Facilities – provide 1,500 vehicle spaces by 2042.
- Bicycle and pedestrian travel – construct class I, II, and III bicycle paths, accompanied with striping and signage.
- 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.

- PM<sub>10</sub> efficient street sweeping – SJVAPCD Rule 8061: Paved and Unpaved Roads implements the usage of specific street sweepers that target the reduction of PM<sub>10</sub> 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 PM<sub>10</sub> 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.
- Media campaigns promoting the various air emission reduction measures listed above.

Long Term, 2021 – 2042

- 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 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 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 2042 a fleet of over 500 vans will be utilized and maintained for vanpooling.
- Flextime programs – Offsets the traditional work hours of 8 a.m. to 5 p.m., ultimately reducing traffic congestion during peak periods.

***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, 2018–2042

- 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.

- Form public/private partnership task force (on project-by-project basis).

### ***Congestion Management Program Action Element***

As with the previous federal surface transportation acts, under 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 Regional Transportation Plan. 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 incorporates 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, 2018–2020

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

- Widen State Route 119 near Taft. (Safety)
- Widen State Route 14 near Freeman Gulch/Inyokern. (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.
- Implement the capital improvements for highways, regional roads, and interchanges for this time period.

Long Term, 2021–2042

- 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.
- 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, 2018–2020

- 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.
- 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, 2021–2042

- 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.
- 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 Regional Transportation Plan include safety as a critical factor.

***Policies and Recommendations***

Kern COG's Transportation Security Plan 2012–2042 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 2018 RTP outreach process.

#### ***Global Gateways – Land Use Actions***

##### Near Term, 2018–2020

- 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 California Environmental Quality Act 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.
- 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, 2021–2042

- 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.

- 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, 2018–2020

- Acknowledge city and county adopted General Plans and amendments and the related California Environmental Quality Act (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 2018 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.
- Coordinate with GET, KT, and the Kern County Department of Airports to improve intermodal connectivity between transit systems and Meadows Field.

Long Term, 2021–2042

- 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.
- 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, 2018–2020**

- 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 2018 RTP in partnership with member agencies to preserve near- and long-term transportation infrastructure that promote 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.
- Provide for all types of truck-related goods movement along truck-route corridors.

#### **Long Term, 2021–2042**

- 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.
- 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% of the total households in Kern, indicating that the main wave of urbanization has yet to reach this county. Kern COG and the Southern California Association of Governments (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, 2018–2020

- 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.
- Coordinate with the Eastern Sierra Transportation Planning Partnership on interregional land use and transportation planning issues.

Long Term, 2021–2042

- 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 Regional Housing Needs Allocation 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.
- 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 the 2018 RTP Program EIR includes a collection of transportation projects and strategies or transportation network and a growth scenario. The alternatives evaluated for the 2018 RTP PEIR are as follows:

1. The **2018 RTP** (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 2018.
3. The **2014 Updated RTP Alternative** is an update of the adopted 2014 RTP 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 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 2018 RTP PEIR builds on the analysis and mitigation contained in the 2014 RTP PEIR. The 2018 RTP project list is similar to the project list for the 2014 RTP, although some of the transportation projects from the 2014 RTP are now considered committed and are included in the No Project Alternative. The 2018 RTP evaluates the most recent projects and policies and provides more direct comparisons between current conditions and expected future Plan conditions. The 2018 RTP 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 2018 RTP. 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 EIR shall be incorporated into those projects as appropriate and feasible as determined by the implementing agencies. It is the intent of Kern COG that member agencies and others use the information contained within the Program EIR in order to “tier” subsequent environmental documentation of projects in the region. Information from this document may also be incorporated in future County Congestion Management Programs and associated environmental documents, as applicable.

The 2018 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 2018 RTP; 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 **Section 1.0, Introduction**, for a discussion of CEQA streamlining.

## 4.0 ENVIRONMENTAL ANALYSIS

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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; greenhouse gas emissions; land use; noise; population and housing; public services; transportation; and utilities and service systems; and water resources. 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

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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 2018 RTP. In addition, mitigation measures are identified as appropriate and feasible to reduce potentially significant adverse impacts.

### 4.1.1 ENVIRONMENTAL SETTING

#### *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 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, and of transportation improvements and development in relation to the massing of the structures and buildings in 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.<sup>1, 2</sup> 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.<sup>3</sup> 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 and diversity of Kern County, it is not possible or appropriate to apply uniform standards to all areas within the region.

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<sup>1</sup> Federal Highways, “Visual Impact Assessments for Highway Projects,” accessed April 2018 <http://www.dot.ca.gov/ser/downloads/visual/FHWAVisualImpactAssmt.pdf>

<sup>2</sup> The term “visual quality” is used synonymously with “scenic quality” in this document.

<sup>3</sup> 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.

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 the 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. California Environmental Quality Act (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 2018 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 are complimentary 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 Strip Malls	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.  Neat and well landscaped. Blend with surroundings	Not screened from view and visible by motorists. Will not be removed or modified. Scenic view is degraded.  Not harmonious with surroundings. Poorly maintained or vacant. Blighted, Development degrades or obstructs scenic view.
Parking Lots Off-Site Advertising Structures Noise Barriers	Screened from view so that vehicles and pavement are not visible from the highway	Neat and well landscaped. Blend with surroundings  Noise barriers are well landscaped and complement the natural landscape. Noise barriers do not degrade or obstruct views.	Not screened or landscaped. Scenic view is degraded.  Billboards degrade or obstruct scenic view  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.

### 4.1.1.1 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 park 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 880,102 acres under cultivation in 2016.<sup>4</sup> 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.

#### *Mountain Views*

The east-west mountains of the Transverse Ranges located in southern Kern County are prominent in many views within the County. Ranges present or visible from locations within Kern County include the

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<sup>4</sup> Kern COG 2018 and California Department of Conservation, Division of Land Resource Protection, 2016.



Tehachapi Mountains (part of the Transversers 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 in to 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. 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.

### ***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*

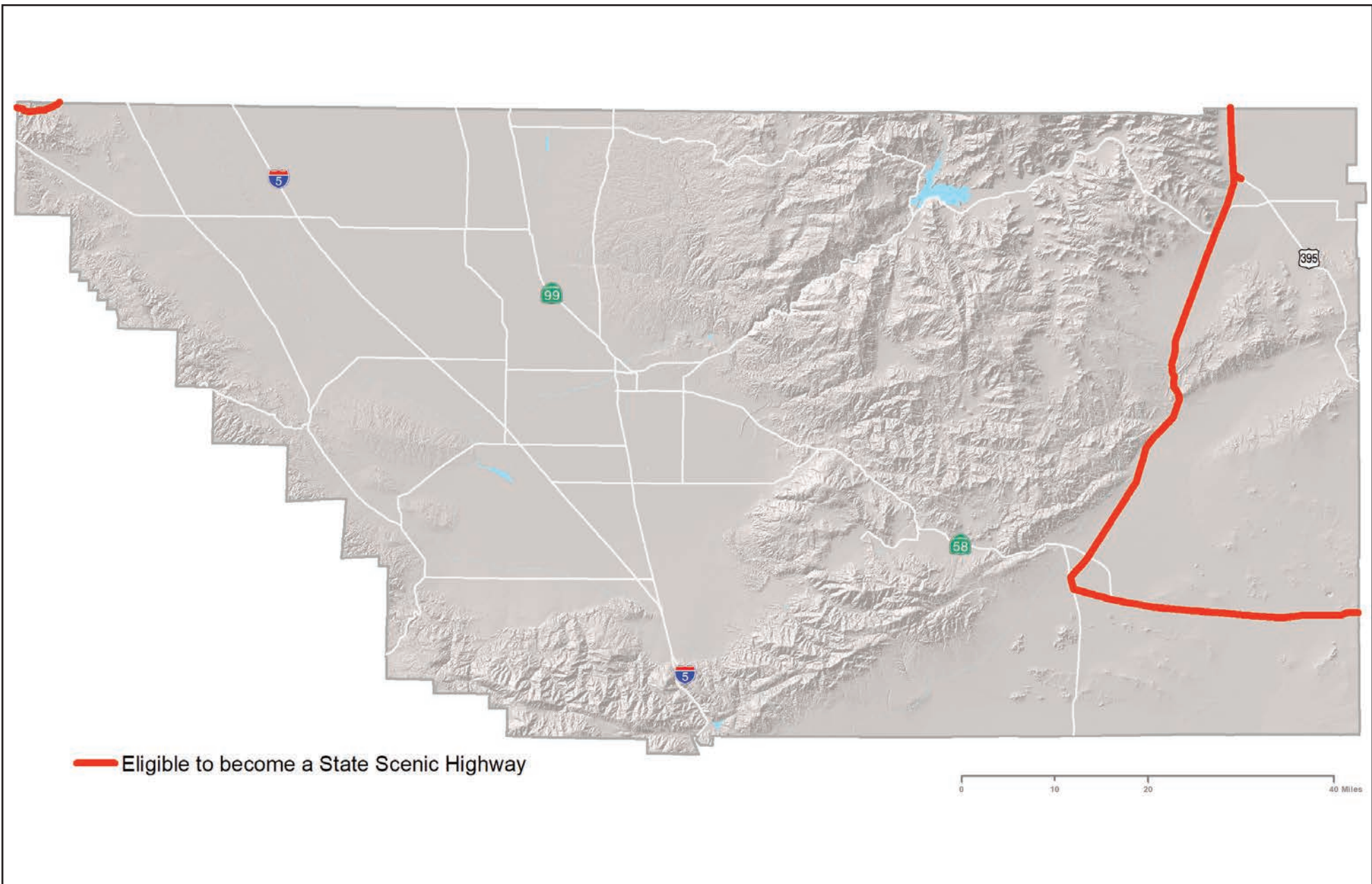
Many public views of Kern County are from the Interstate and US freeway routes. The freeways themselves are also a visual component of the landscape. I-5 and State Route (SR)-99 are the two primary north/south routes. Both are major transportation corridors (including substantial use by trucks) within 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, 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. **Figure 4.1-1, Kern County Highways Eligible for Caltrans California Scenic Highway Designation**, depicts the location of these eligible highways. These 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.



SOURCE: California Department of Transportation, 2018

FIGURE 4.1-1

### Kern County Highways Eligible for Caltrans California Scenic Highway Designation

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.

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.

### ***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 river and 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 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 Regulations**

##### *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 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.

### ***Section 6009(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users***

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

### ***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 in Kern County.<sup>5</sup>

### ***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

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<sup>5</sup> US Department of Transportation, Federal Highway Administration, America’s Byways, <http://www.fhwa.dot.gov/byways/states/CA>, April 2018.

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 aesthetic resources as well as impacts to scenic resources and conflicts with state, regional, or local plans and policies. 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.

#### 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 change 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 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 requirement)
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 January 2018.

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

To improve and maintain the visual quality of California highways, Caltrans administers the Adopt-a-Highway program, which was established in 1989. The program provides an avenue for individuals, organizations, or businesses to help maintain sections of roadside within California's State Highway System. Groups have the option to participate as volunteers or to hire a maintenance service provider to perform the work on their behalf. Adoptions usually span a 2-mile stretch of roadside, and permits are issued for five-year periods. Since 1989, more than 120,000 California residents have kept 15,000 shoulder miles of state roadways clean by 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 2016 Standards went into effect on January 1, 2017. 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.

#### 4.1.2.3 Local

##### *Kern County General Plan<sup>6</sup>*

Most local planning guidelines to preserve and enhance 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 view shed, 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.

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 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 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.

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<sup>6</sup> This document uses the 2004 General Plan, it should be noted that in 2017 Kern County began the process of updating its General Plan, however those documents are in draft form and not available for use by the time of printing of this document.

- 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 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.

### ***County Zoning Ordinance (Title 19) Chapter 19.8: 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. The 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.

### ***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.

### ***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. 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.

### ***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) 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***

The 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.

- 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

### 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 2018 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 for example by impairing views of scenic resources (i.e., mountains, ocean, rivers, or significant man-made structures) as seen from existing transportation facilities and other key public vantage points in Kern County;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state-designated or eligible scenic highway (for example, by altering the appearance of designated scenic resources along or near a state-designated or eligible, scenic highway);
- Substantially degrade the existing visual character or quality of the site and its surroundings (for example, by creating significant contrasts, with the scale, form, line, color, and/or overall visual character of the existing landscape setting); and
- Create a new source of substantial light or glare, which would adversely affect day or nighttime views and/or causes a public hazard.

#### 4.1.3.2 Methodology

The analysis assesses the potential impacts to visual resources that could result from implementation of the proposed 2018 RTP. For each potential impact, implementation of the proposed 2018 RTP is analyzed at the regional level. Impacts to aesthetic resources are assessed in terms of both land use and transportation changes that could occur. By 2042, implementation of the proposed 2018 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 2017 (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 foothill 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 2018 RTP would influence urban development in Kern County, patterns of development are assessed with respect to aesthetics.

There are no state scenic highways in Kern County and therefore the potential to damage scenic resources within state-designated highways is not assessed. 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 2042 with the adoption of the 2018 RTP, consistent with CEQA Guidelines Section 15126.2(a). Conditions anticipated to occur in 2042 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 project-specific environmental documents.

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 2018 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 implementation of the 2018 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 train.
- **Modifications to Existing Systems:** widening bridges, high-occupancy vehicle (HOV), grade crossings, interchange improvements, and maintenance operations.

As described in **Section 3.0, Project Description**, approximately 40 percent of all expenditure in the 2018 RTP (\$5.3 billion of the total \$13.3 billion for capital and operations and maintenance for all modes) is allocated to operations and maintenance of the current and future system. Highway and arterial projects proposed in the 2018 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 2018 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 2018 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 3.0-7 in the Section 3.0, Project Description**, shows major transit projects included in the 2018 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 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 2018 RTP could affect scenic resources located in the vicinities of these new system projects. Modification 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 2018 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.

#### 4.1.3.3 Impacts and Mitigation Measures

**Impact AES-1** Have a substantial adverse effect on a scenic vista for example by impairing views of scenic resources (i.e., mountains, ocean, rivers, or significant man-made structures) as seen from existing transportation facilities and other key public vantage points in Kern County.

**Impact AES-2** Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic or eligible highway for example by altering the appearance of designated scenic resources along or near a state-designated or eligible scenic highway or vista point.

#### *Regional Impacts*

Implementation of the transportation improvements and changes to land use patterns identified in the proposed 2018 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's 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 2018 RTP, such as roadway widening, bridge replacements, signal installation, and road rehabilitation, could result in modification of 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 area would be relatively small compared to the area of Kern County, and would occur through the year 2042, both changes to land use patterns, and individual

transportation improvements resulting from implementation of the proposed 2018 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 in to existing open space land, and (2) increase density in existing urban areas. Changes in land use patterns and individual transportation projects could cause intermittent interruption 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 April 2018. 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 implementation of the proposed 2018 RTP would not impede or change the existing panoramic views or landscape features in the County. The 2018 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 AES-1** through **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 implementation of the proposed RTP will not impede or change the existing panoramic views or landscape features in the County. 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***

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 2018 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.

**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.
- 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. 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;
- prohibit projects and activities that would obscure, detract from, or negatively affect the quality of views from designated scenic roadways or scenic highways; and comply with other local general plan policies and local control related to the protection of panoramic or scenic views or views of significant landscape features or landforms.

### *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                    Substantially degrade the existing visual character or quality of the site and its surroundings (for example, by creating significant contrasts, with the scale, form, line, color, and/or overall visual character of the existing landscape setting).**

### *Regional Impacts*

The implementation of the proposed 2018 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 2018 RTP promotes infill development and increased density, especially close to transit hubs and corridors. The 2018 RTP also anticipates expansion of existing urban areas in order to serve jobs located outside the urban areas. Infill development and urban expansion is beneficial at the regional scale, as it generally occurs in areas already designated for and receiving growth and precludes growth in undeveloped and/or agricultural and rural areas. Infill development, in general does not significantly change the existing visual character or quality at the regional level, but rather adds to it while preserving the undeveloped character and quality in the agricultural and rural areas. 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 2018 RTP would invest approximately \$8 billion to support the regions 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. About \$5.3 billion is designated for operations and maintenance of the current and future system.

Most of the road and highway investment would occur in areas where transportation infrastructure is already a dominant feature of the landscape. Such transportation projects will not degrade the existing visual character of the region because transportation infrastructure is already a dominant feature of the landscape in those areas. In less developed areas of the region, adding new transportation infrastructure could add an element of urban character to previously undeveloped lands. Depending on the design and siting of transportation projects, this could be considered a degradation of the visual character or quality of an area.

In terms of visual character and quality infill development would not substantially change the visual character or quality of urban areas.

Impacts to visual character from implementation of the proposed 2018 RTP at the regional level are considered potentially significant for **Impact AES-3**. Mitigation is required. **Mitigation Measures MM AES 1** above and **MM AES-4** through **MM AES-6** are described below.

### ***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 2042, including new HOV lanes, auxiliary lanes, roadway widenings, bicycle and pedestrian infrastructure improvements, transit facilities, increased transit service, and roadway maintenance and rehabilitation 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.

Therefore, the impacts to 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. 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 could affect day or nighttime views and/or causes a public hazard.**

### *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 2018 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 a 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 2018 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 visual character. 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 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. New transportation investments would be aligned with planned developments, 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. Mitigation is required for **Impact AES-3**; see **Mitigation Measures MM AES 1** above and **MM AES-7** is described below.

### *Transit Priority Areas*

The regional impact section describes the conditions that could result in a potentially significant impact to 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 2018 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 and 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 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. Some of these changes would be expected to occur on the fringe of the County (especially adjacent to LA 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 2018 RTP could indirectly cause changes to the visual character or to scenic areas outside Kern County. Therefore, the 2018 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

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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 2018 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 more than 88 different crops,<sup>1</sup> contributing \$7.2 billion a year to the California economy.<sup>2</sup> A number of crops are not grown commercially anywhere else in the nation. Additional statistics include the following:<sup>3</sup>

- Number of farms – 1,938
- Harvested cropland – 740,061 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.

One in six jobs in Kern County are directly related to the resource sectors of forestry, fishing, hunting, mining (i.e., oil/gas) and agriculture. Agriculture has deep roots in the region's history and future. Kern

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<sup>1</sup> Kern County Crop Statistics, <http://www.kernag.com/dept/stats/crop-stats.asp>, May 30, 2017.

<sup>2</sup> 2016 Kern County Agricultural Crop Report, [http://www.kernag.com/caap/crop-reports/crop10\\_19/crop2016.pdf](http://www.kernag.com/caap/crop-reports/crop10_19/crop2016.pdf), 2017.

<sup>3</sup> Ibid.

County has some of the most productive farmland in the world. According to the 2016 Kern County Agricultural Crop Report, Kern County Agriculture reached a milestone in 2016 by topping the \$7 billion dollar gross production value. The 2016 gross value of all agricultural commodities produced in Kern County was \$7,187,944,340. This represented an increase (6 percent) from the revised 2015 crop value (\$6,802,067,690).

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 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).<sup>4</sup> 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 1988 to 2016, and identifies the acreage lost and gained in each land use designation. As the table shows, from 1988 to 2016 farmland showed a net loss of 187,711 acres. During the same period, urban and built-up land had a net total increase of 78,237 acres and grazing land had a net total increase of 121,235 acres.

The conversion of irrigated farmland to urban land<sup>5,6</sup> is primarily due to urbanization. The largest concentration of conversions occurred in the form of new homes in the Bakersfield area.<sup>7</sup> 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

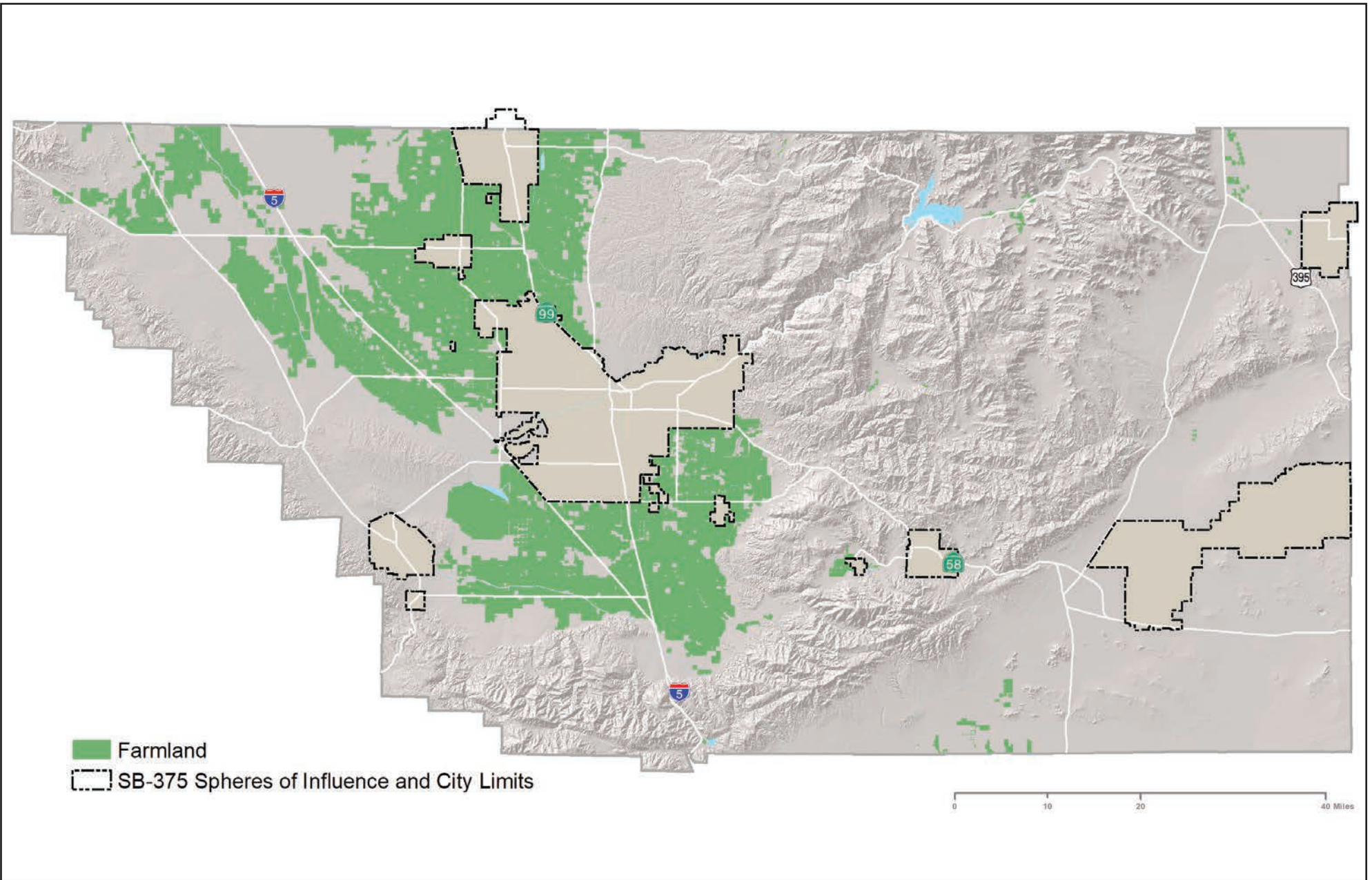
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<sup>4</sup> Sphere of Influence (SOI) is an area that is affected by development within another county or city, but which the county or city has no formal authority.

<sup>5</sup> Urban Land includes residential, industrial, recreational, infrastructure and institutional uses.

<sup>6</sup> 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.

<sup>7</sup> Department of Conservation, Farmland Mapping and Monitoring Program, Kern County 2004-2016 Land Use Summary.



SOURCE: Farmland Mapping & Monitoring Program, 2018

FIGURE 4.2-1

## Kern County Farmland

**Table 4.2-1**  
**Kern County Summary and Change by Land Use Category**

Land Use Category	Total Acreage Inventoried		1988–2016 Acreage Changes	
	1988	2016	Average Annual Acreage Changed	Net Acreage Changed
Farmland	1,067,813	880,102	-6,704	-187,711
Grazing Land	1,728,031	1,849,266	4,330	121,235
<b>Agricultural Land Subtotal</b>	<b>2,795,844</b>	<b>2,729,368</b>	<b>-2,374</b>	<b>-66,476</b>
Urban and Built-up Land	80,942	159,179	2,794	78,237
Other Land	2,329,788	2,325,914	-138	-3,874
Water Area	9,848	9,853	0	5
<b>Total Area Inventoried</b>	<b>5,216,422</b>	<b>5,224,314</b>		

Source: California Department of Conservation, Division of Land Resource Protection, 2016.

Notes:

(1) Figures are generated from the most current version of the GIS data. Files dating from 1990-2016.

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.<sup>8, 9, 10</sup>

The FMMP has kept records of land use changes every two years since 1988. From 2004- 2016, Important Farmland has shown a steady decrease with an average annual decrease of 7,254 acres, with acreage dropping over 87,000 acres over twelve years. **Table 4.2-2, 2004- 2016 Kern County Land Use Summary**, shows the decrease in agricultural land within the County, as discussed above. Between 2004 and 2016, there was an average annual increase in urban and built-up land of approximately 3,113 acres.

<sup>8</sup> 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.

<sup>9</sup> 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.

<sup>10</sup> Department of Conservation, Farmland Mapping and Monitoring Program, Kern County 2004-2016 Land Use Summary.



**Table 4.2-2**  
**Kern County Land Use Summary 2004- 2016**

<b>Land Use Category</b>	<b>2004</b>	<b>2006</b>	<b>2008</b>	<b>2010</b>	<b>2012</b>	<b>2014</b>	<b>2016</b>	<b>2004-2016 Net Acreage Change</b>	<b>Average Annual Acreage Change</b>
Prime Farmland	643,128	640,037	626,217	608,790	597,771	585,035	579,295	-63,833	-5,319
Farmland of Statewide Importance	214,705	214,848	216,347	213,463	212,867	209,563	209,484	-5,221	-435
Unique Farmland	109,318	107,295	96,657	91,830	89,694	90,107	91,323	-17,995	-1,500
Farmland of Local Importance	0	0	0	0	0	0	0	0	0
<b>Important Farmland Subtotal</b>	<b>967,151</b>	<b>962,180</b>	<b>939,221</b>	<b>914,083</b>	<b>900,332</b>	<b>884,705</b>	<b>880,102</b>	<b>-87,049</b>	<b>-7,254</b>
Grazing Land	1,791,467	1,792,926	1,807,069	1,827,390	1,843,605	1,847,615	1,849,266	57,799	4,817
<b>Agricultural Land Subtotal</b>	<b>2,758,618</b>	<b>2,755,106</b>	<b>2,746,290</b>	<b>2,741,473</b>	<b>2,743,937</b>	<b>2,732,320</b>	<b>2,729,368</b>	<b>-29,250</b>	<b>-2,438</b>
Urban and Built-Up Land	121,828	129,339	138,696	141,897	143,726	151,595	159,179	37,351	3,113
Other Land	2,331,095	2,327,121	2,329,396	2,330,998	2,326,719	2,330,521	2,325,914	-5,181	-432
Water Area	9,842	9,811	9,880	9,890	9,876	9,874	9,853	11	1
<b>Total Area Inventoried</b>	<b>5,221,383</b>	<b>5,221,377</b>	<b>5,224,262</b>	<b>5,224,258</b>	<b>5,224,258</b>	<b>5,224,310</b>	<b>5,224,314</b>	<b>2,931</b>	<b>244</b>

<sup>z</sup>

Source: California Department of Conservation, Farmland Mapping and Monitoring Program 2004-2016.

(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 1.7 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 2015**, 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 2015**

Land Conservation Act	Acres
Prime	618,225
Non-Prime	907,145
<b>Total</b>	<b>1,525,370</b>

*Source: 2016 Williamson Act Status Report*

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 in 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 Emigdio-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-leaved 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. 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.

### ***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.<sup>1</sup> The Agricultural Act of 2014 consolidates agricultural conservation programs for flexibility, accountability, and adaptability at the local level; makes 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).<sup>1</sup> 1 Acres under the FRPP are considered enrolled ACEP.<sup>1</sup> 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.

### ***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 ownership of the property and the right to use 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 are lands 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 depicts the areas devoted to prime farmland, unique farmland, farmland of statewide importance, and farmland of local importance.<sup>11</sup> 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. 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 to not develop the land for a period of at least 10 years.

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<sup>11</sup> California Department of Conservation, Farmland Mapping and Monitoring Program, 2013

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 uses of the land are 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 section 51231, 51238, or 51238.1. **Table 4.2-3** shows the amount of agricultural lands under Williamson Act contract in Kern County.

### ***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 development or use of land for 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 that 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 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 2018 RTP, policies from the Kern County General Plan are summarized

below.<sup>12</sup> In addition as the largest City in Kern County policies from the 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 areas.
- 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 which directly and obviously relate to the exploration, production, and transportation of the particular resource will be considered to be consistent with this General Plan.
- 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 subjected 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.

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<sup>12</sup> 2004 Kern County General Plan <https://kernplanning.com/planning/planning-documents/general-plans-elements/>

- 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 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 with the Williamson Act program or the Farmland Security Zone program.
  - The County should encourage the merger of largely undeveloped antiquated subdivisions which 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<sup>13</sup>**

- 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 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
  - 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

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<sup>13</sup> 2002 Metropolitan Bakersfield General Plan  
<http://www.bakersfieldcity.us/civicax/filebank/blobdload.aspx?BlobID=31381>

- 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 their 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 or 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 creation of spheres of influence for cities, adjustments to boundaries of special districts, annexations, incorporations, detachments of areas from cities, and 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 2018 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)); and/or result in the loss of “Forest Land” as defined in the California Forest Legacy Act of 2007 (Pub. Resources Code, § 12220(G)) or conversion of Forest Land into non-forest use.
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use.

### **4.2.3.2 Methodology**

The analysis assesses the potential impacts to agricultural, timber, and forest resources that could result from implementation of the 2018 RTP. For each potential impact, implementation of the 2018 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 (2042) 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 2042 with the 2018 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 2018 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. Approximately 15 percent of Kern County is timberland and forest land; these resources 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 reduction of the resources through lane widening could cause significant impacts.

#### **4.2.3.3 Impacts and Mitigation Measures**

**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 2017, Kern County's agricultural land included 579,295 acres of prime farmland, 209,484 acres of unique farmland, and 91,323 acres of farmland of statewide importance<sup>14</sup> (see **Figure 4.2-1** 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, 2018 RTP Land Consumption**.

**Table 4.2-4  
2018 RTP Land Consumption**

Community Type	Acres of Impact (by 2042)	
	No Project	2018 RTP
Land Consumed (New Development)	58,560	56,000
Important Farmland Consumed (outside SOI)	1,216	1,024
Important Farmland Consumed (Inside SOI)	23,936	14,784
Percent of New Residential Development as Infill	1.0	11.3

*Source: Kern COG, 2017*

*Note: SOI= Sphere of Influence*

As shown in **Table 4.2-4**, the 2018 RTP has the potential to consume 56,000 acres of land, of that 15,808 acres would be prime, important farmland, or farmland of statewide importance.

The conversion of 15,808 acres over the 24-year planning period represents a lower rate of conversion (approximately 658 acres per year) than has historically occurred. 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 to 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 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 2018 RTP are considered significant for **Impact AG-1**. Mitigation is required; see **Mitigation Measures MM AG-1 through MM AG-4** below.

<sup>14</sup> Farmland Mapping and Monitoring Program (FMMP) of the California Department of Conservation

### ***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 interfere with 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***

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 2018 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.

**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 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 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 or land use designation for agricultural use, or a Williamson Act contract.**

### *Regional Impacts*

As of 2015, the Kern region contained a total of 1,525,370 acres of land contracted under the Williamson Act. Of those acres, 618,225 acres were prime farmland and 907,145 acres were non-prime. As shown in **Table 4.2-4**, 15,808 acres of total farmland could be consumed due to transportation projects and land use strategies included in the 2018 RTP. Over the 24-year planning horizon of the 2018 RTP, some land currently under Williamson Act contracts could expire and be converted to non-agricultural uses. However, as discussed in the 2018 RTP (see Chapter 5 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 2018 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/SCS 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 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***

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 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)); and/or result in the loss of “Forest Land” as defined in the California Forest Legacy Act of 2007 (Pub. Resources Code, § 12220(G)) or conversion of Forest Land into non-forest use.**

### *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.<sup>15</sup> 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 2018 RTP (24 years), it is likely 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 2018 RTP (see Chapter 5 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 2018 RTP, rather each individual jurisdiction would be responsible for approving land use and zoning changes. As a result, no direct changes to land use designation or zoning would occur as a result of the 2018 RTP.

Much of growth anticipated with the Plan would occur in urbanized areas, not existing forest lands. Land use strategies contained within the 2018 RTP would help to encourage growth in developed areas rather than a more dispersed land use pattern that could result in 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 2018 RTP at the regional level are considered potentially significant for **Impact AG-3**. Mitigation is required. **Mitigation Measures AG-2**, described above, and **AG-6** and **AG-7**, described below, should be implemented to 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.

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<sup>15</sup> 2004 Kern County General Plan <https://kernplanning.com/planning/planning-documents/general-plans-elements/>



### *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-5, 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:** **Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of farmland to non-agricultural use.**

### *Regional Impacts*

By 2042, Kern County will experience an increase of approximately 570,675 people, 158,200 jobs, and 175,394 households. Implementation of the proposed 2018 RTP would convert roughly 56,000 acres of undeveloped land.

Under the Plan, 11.3 percent of new growth would be infill/redevelopment and 36 percent of new housing units would be either multi-family or small lot/townhome. By developing more compactly, the proposed 2018 RTP would direct more growth to the areas that are already urbanized (as compared to historic trends), thereby avoiding some agricultural lands from being converted to urban uses. In developing the 2018 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 2018 RTP could result in the conversion of 15,808 acres of farmland. Lands that remain agricultural lands, but are located near to 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 2018 RTP could require changes in existing land uses which could result in 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 2018 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 2018 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 included in the 2018 RTP are considered potentially significant at the regional level for **Impact AG-4**. Mitigation is required; see **Mitigation Measures AG-1** through **AG-4**, above.

### *Transit Priority Areas*

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-4**. 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 2018 RTP consumption 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 2018 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 2018 RTP. Loss of these resources and habitat, as well as habitat fragmentation would contribute to statewide cumulative impacts. Therefore, the 2018 RTP would contribute to cumulative impacts on agricultural, timber, and forest resources.

## 4.3 AIR QUALITY

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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 2018 Regional Transportation Plan (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 US Environmental Protection Agency (USEPA). 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, the Mojave Desert, 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 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 USEPA and the

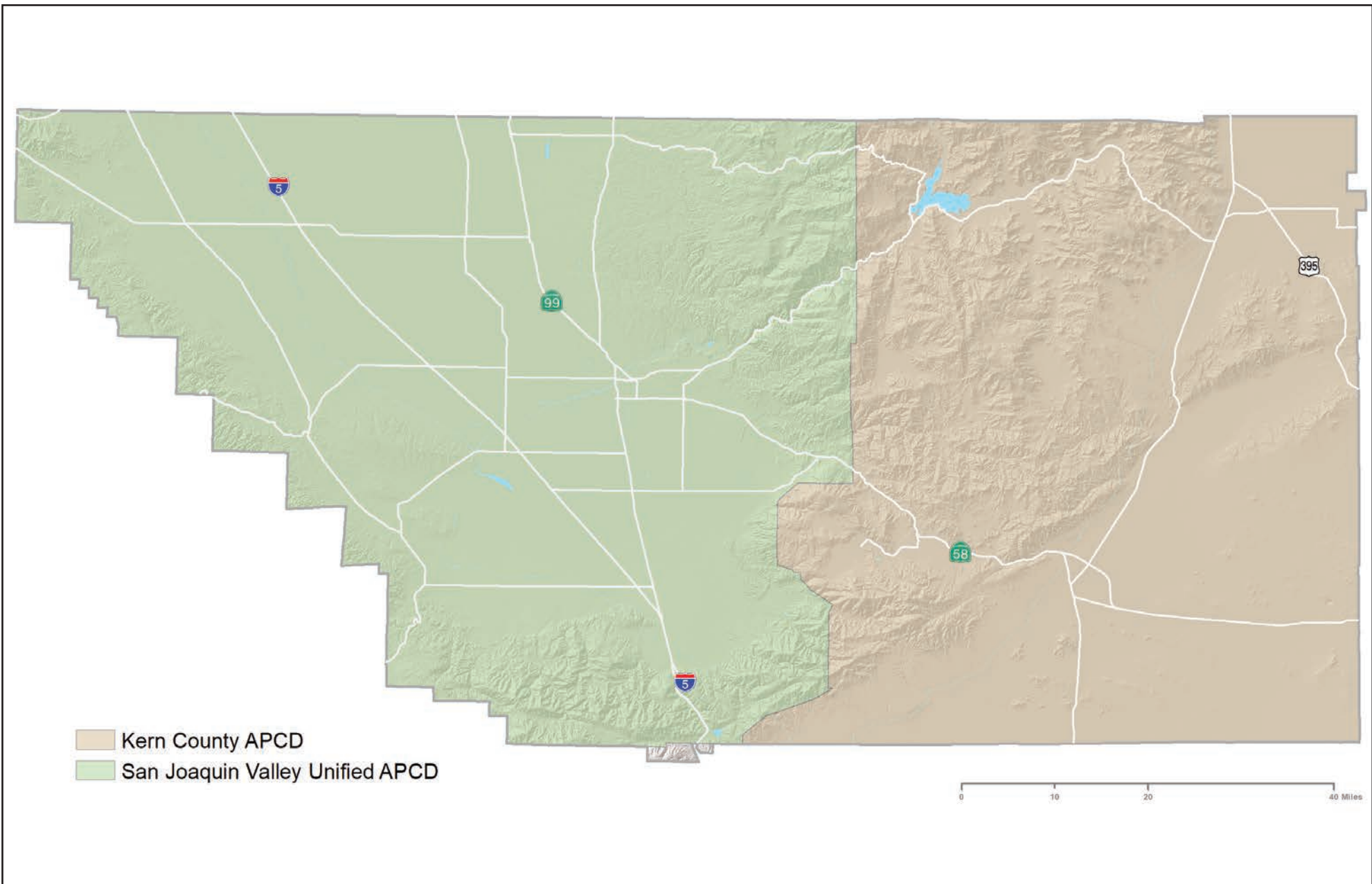
state designate air basins as in attainment or nonattainment for several pollutants including ozone. The separate designations reflect the fact that ozone precursor transport depends on daily meteorological conditions.

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 USEPA sets National Ambient Air Quality Standards for the following seven pollutants: carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), sulfur dioxide (SO<sub>2</sub>), respirable particulate matter (PM<sub>10</sub>), fine particulate matter (PM<sub>2.5</sub>), 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 are briefly described below.



SOURCE: California Air Resources Board, 2018

FIGURE 4.3-1

### Kern County Air Pollution Control Districts

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<sub>3</sub>; therefore, ROGs are also relevant to the proposed project and are of concern in the area.<sup>1</sup>

- Ozone (O<sub>3</sub>). O<sub>3</sub> is a gas that is formed when ROGs and oxides of nitrogen (NO<sub>x</sub>), 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<sub>3</sub>.
- Nitrogen Dioxide (NO<sub>2</sub>). NO<sub>2</sub> is a reddish-brown, highly reactive gas that is formed in the ambient air through the oxidation of nitric oxide (NO). NO<sub>2</sub> is also a byproduct of fuel combustion. The principal form of NO<sub>x</sub> produced by combustion is NO, but NO reacts quickly to form NO<sub>2</sub>, creating the mixture of NO and NO<sub>2</sub> referred to as NO<sub>x</sub>. NO<sub>2</sub> acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO<sub>x</sub> is only potentially irritating. NO<sub>2</sub> 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<sub>2</sub>). SO<sub>2</sub> 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<sub>2</sub> oxidizes in the atmosphere, it forms sulfates (SO<sub>4</sub>).
- Respirable Particulate Matter (PM<sub>10</sub>). PM<sub>10</sub> consists of suspended particles or droplets 10 micrometers or smaller in diameter. Some sources of PM<sub>10</sub>, like pollen and windstorms, are naturally occurring. However, in populated areas, most PM<sub>10</sub> is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities.
- Fine Particulate Matter (PM<sub>2.5</sub>). PM<sub>2.5</sub> is suspended particulate matter that is 2.5 micrometers or smaller in diameter. The sources of PM<sub>2.5</sub> 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<sub>x</sub>, and ROGs are transformed in the air by chemical reactions.

PM<sub>2.5</sub> and PM<sub>10</sub> 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. PM<sub>2.5</sub>

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<sup>1</sup> USEPA n.d.c

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 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 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		Most Relevant Health Effects
	State Standard (CAAQS)	Federal Primary Standard (NAAQS)	
Ozone <sup>1</sup>	0.09 ppm (180 µg/m <sup>3</sup> ), 1-hour. avg.  0.070 ppm (137 µg/m <sup>3</sup> ), 8-hour avg.	0.070 ppm (137 µg/m <sup>3</sup> ), 8-hour avg. (three-year average of annual 4 <sup>th</sup> - 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



Air Pollutant	Concentration/Averaging Time		Most Relevant Health Effects
	State Standard (CAAQS)	Federal Primary Standard (NAAQS)	
Nitrogen Dioxide <sup>2</sup>	0.18 ppm (339 µg/m <sup>3</sup> ), 1-hour avg. 0.030 ppm (57 µg/m <sup>3</sup> ), annual arithmetic mean	0.100 ppm (188 µg/m <sup>3</sup> ), 1-hour avg. (three-year avg. of the 98 <sup>th</sup> percentile of the daily maximum 1-hour avg.) 0.053 ppm (100 µg/m <sup>3</sup> ), 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/m <sup>3</sup> ), 1-hour avg. 9.0 ppm (20 µg/m <sup>3</sup> ), 8-hour avg.	35 ppm (40 µg/m <sup>3</sup> ), 1-hour avg. (not to be exceeded more than once per year) 9 ppm (10 µg/m <sup>3</sup> ), 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 <sup>3</sup>	0.25 ppm (655 µg/m <sup>3</sup> ), 1-hour. avg. 0.04 ppm (105 µg/m <sup>3</sup> ), 24-hour avg.	0.075 ppm (196 µg/m <sup>3</sup> ), 1-hour avg. (three-year avg. of the 99 <sup>th</sup> 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/m <sup>3</sup> , 24-hour avg. 20 µg/m <sup>3</sup> , annual arithmetic mean	150 µg/m <sup>3</sup> , 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/m <sup>3</sup> , annual arithmetic mean	35 µg/m <sup>3</sup> , 24-hour avg. (three-year average of 98 <sup>th</sup> percentile) 15 µg/m <sup>3</sup> , 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 <sup>4</sup>	1.5 µg/m <sup>3</sup> , 30-day avg.	1.5 µg/m <sup>3</sup> , calendar quarter 0.15 µg/m <sup>3</sup> , three-month rolling average	(a) Increased body burden; and (b) Impairment of blood formation and nerve conduction
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 <sup>3</sup> , 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

Air Pollutant	Concentration/Averaging Time		Most Relevant Health Effects
	State Standard (CAAQS)	Federal Primary Standard (NAAQS)	
Hydrogen Sulfide	0.03 ppm (42 µg/m <sup>3</sup> ), 1-hour avg.	None	Odor annoyance
Vinyl Chloride <sup>3</sup>	0.01 ppm (26 µg/m <sup>3</sup> ), 24-hour avg.	None	Highly toxic and a known carcinogen that causes a rare cancer of the liver.

Source: South Coast Air Quality Management District, Final Program Environmental Impact Report for the 2016 Air Quality Management Plan, Table 3.2-5, p. 3.2-30 and <https://www.epa.gov/criteria-air-pollutants/naaqs-table>.

µg/m<sup>3</sup> = microgram per cubic meter; ppm = parts per million by volume;

NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards

<sup>1</sup> Effective December 28, 2015, the USEPA issues a new 8-hour Ozone standard. The new 8-hour standard is 0.075 parts per million.

<sup>2</sup> On January 25, 2010, the USEPA promulgated a new 1-hour NO<sub>2</sub> standard. The new 1-hour standard is 0.100 parts per million (188 micrograms per cubic meter [µg/m<sup>3</sup>]) and became effective on April 12, 2010.

<sup>3</sup> On June 3, 2010, the USEPA issued a new 1-hour SO<sub>2</sub> standard. The new 1-hour standard is 0.075 parts per million (196 µg/m<sup>3</sup>). The USEPA 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.

<sup>4</sup> 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 USEPA 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<sub>3</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, 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<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> 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 USEPA as an O<sub>3</sub> extreme nonattainment area and ranging from attainment/unclassified, nonattainment, and attainment for the other criteria pollutants. The main source of CO and NO<sub>x</sub> 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 NO<sub>x</sub> 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.<sup>2,3</sup>

Ozone, classified as a “regional” pollutant, often occurs downwind of the original source of precursor emissions. Ozone can be easily transported by winds from a source area. Peak ozone levels tend to be higher in the southern portion of the Valley, as the prevailing summer winds sweep precursors downwind of northern source areas before concentrations peak. As described below, the USEPA and CARB designate air basins as in attainment or nonattainment for several pollutants, including ozone. The separate designations reflect the fact that the movement of ozone precursors depends on daily meteorological conditions.

The SJVAB has been ranked the 2nd worst in the United States for O<sub>3</sub> levels, even though data shows that overall O<sub>3</sub> has decreased between 1982 and 2001. Direct PM<sub>10</sub> emissions have decreased between the years 1975 and 1995 and have remained relatively constant since 2000. The main sources of PM<sub>10</sub> 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 (PM<sub>10</sub>) to comply with federal attainment planning requirements for PM<sub>10</sub>.<sup>4,5</sup>

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<sup>2</sup> Ibid.

<sup>3</sup> 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.

<sup>4</sup> Ibid.

The status of Kern County located with respect to attainment with 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 USEPA 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 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.

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<sup>5</sup> 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.

**Table 4.3-2  
National and California Ambient Air Quality Standard Designations for Kern County**

<b>Pollutant</b>	<b>National Ambient Air Quality Standard Designations San Joaquin Valley Air Basin (Western Kern County)</b>	<b>National Ambient Air Quality Standard Designations Mojave Desert Air Basin (Eastern Kern County)</b>	<b>California Ambient Air Quality Standard Designations San Joaquin Valley Air Basin (Western Kern County)</b>	<b>California Ambient Air Quality Standard Designations Mojave Desert Air Basin (Eastern Kern County)</b>
Ozone (O <sub>3</sub> ) – 1 hour	None	None	Nonattainment/Severe	Nonattainment/Moderate
Ozone (O <sub>3</sub> ) – 8 hour	Nonattainment/Extreme	Nonattainment/Marginal	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment/Unclassified	Attainment/Unclassified	Nonattainment	Unclassified
Nitrogen Dioxide (NO <sub>2</sub> )	Attainment/Unclassified	Attainment/Unclassified	Attainment	Attainment
Sulfur Dioxide (SO <sub>2</sub> )	Attainment	Unclassified	Attainment	Attainment
Respirable Particulate Matter (PM <sub>10</sub> )	Attainment	Attainment/Nonattainment (Serious)/Unclassified	Nonattainment	Nonattainment
Fine Particulate Matter (PM <sub>2.5</sub> )	Nonattainment	Attainment/Unclassified	Nonattainment	Unclassified
Lead (Pb)	Attainment/Unclassified	Attainment/Unclassified	Attainment	Attainment

Source: CARB. <http://www.arb.ca.gov/design/adm/adm.htm>. Accessed April 2018.

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.

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 (USEPA) 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. USEPA 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, USEPA stresses that the lists are subject to change and may be adjusted in future rules.<sup>6</sup> USEPA has issued a number of regulations that will dramatically decrease MSATs through cleaner fuels and cleaner engines. According to an FHWA analysis, even if the number of vehicle miles traveled increases by 64 percent, reductions of 57 percent to 87 percent in MSATs are projected from 2000 to 2020.

As noted in the definition above, all USEPA 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.<sup>7</sup> The ASPEN model is used in the USEPA's National Air Toxics Assessment study.<sup>8</sup> 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

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<sup>6</sup> FHWA, *Memorandum. Information: Interim Guidance Update on Air Toxic Analysis in NEPA Documents*, December 6, 2012.

<sup>7</sup> US Environmental Protection Agency (USEPA). n.d.a. "The ASPEN Model," <https://archive.epa.gov/airtoxics/nata/web/html/aspn.html>.

<sup>8</sup> US Environmental Protection Agency (USEPA). n.d.b. "National Air Toxics Assessments," <https://www.epa.gov/national-air-toxics-assessment>.

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 IV.<sup>9</sup>

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 84 percent of the total regional risk in the southern California.<sup>10</sup>

### ***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.<sup>11</sup>

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

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<sup>9</sup> South Coast Air Quality Management District (SMAQMD). 2015. "MATES IV: Multiple Air Toxics Exposure Study," <http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf>.

<sup>10</sup> Ibid.

<sup>11</sup> California Air Resources Board. *The California Almanac of Emissions and Air Quality 2013 Edition*. 2013.

persons. In addition to these general risks, DPM can also present elevated localized or near-source exposures. 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.<sup>12</sup>

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 PM<sub>2.5</sub>), 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 depends 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

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<sup>12</sup> California Air Resources Board and Office of Environmental Health Hazard Assessment. "Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values." <https://www.arb.ca.gov/toxics/healthval/healthval.htm>. 2017



carcinogen. Human epidemiological studies demonstrate an association between diesel exhaust exposure and increased lung cancer rates in occupational settings.<sup>13</sup>

USEPA'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 are used to establish selective protective health levels to compare to the modeled exposures levels. Unfortunately, the exposure response data in human studies are considered too uncertain to develop a carcinogenic unit risk for USEPA'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.<sup>3,14</sup> This value is similar to, but less than, the National Ambient Air Quality Standard established for fine particulate matter (PM<sub>2.5</sub>), which is 15 µg/m.<sup>3</sup>

Unlike other TACs, no ambient monitoring data are available for DPM because no routine measurement method currently exists. However, 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.<sup>15</sup>

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 are finding similar results.

*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 NO<sub>2</sub> and elemental carbon (or soot) is linked to a slowing of lung function

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<sup>13</sup> US OSHA, Diesel Exhaust/ Diesel Particulate Matter. Available at [https://www.osha.gov/dts/hazardalerts/diesel\\_exhaust\\_hazard\\_alert.html](https://www.osha.gov/dts/hazardalerts/diesel_exhaust_hazard_alert.html).

<sup>14</sup> Ibid.

<sup>15</sup> SCAQMD, *Traffic Pollutants and Health Effects*. May 20, 2005.

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.<sup>16</sup>

*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 3<sup>rd</sup> and 5<sup>th</sup> grades.<sup>17</sup> The study included ten neighborhoods with school sites located upwind and downwind from major roads. The San Francisco area has strong prevailing winds, and this study found that downwind direction and proximity to major roads was an important determinant of increased exposure to traffic pollutants. This study found higher concentrations of black carbon, oxides of nitrogen, and nitrogen oxide 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 the location is "downwind" of the road. ("Downwind" means that the wind generally blows from the road toward your location.)

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<sup>16</sup> *Ibid.*

<sup>17</sup> CARB, *The East Bay Children's Health Study; Traffic-Related Air Pollution Near Busy Roads*, June 7, 2004.

- 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*.<sup>18</sup> 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 of residence near a freeway and susceptibility to childhood asthma.<sup>19</sup> 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 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.

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<sup>18</sup> ARB, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005.

<sup>19</sup> 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.

*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.<sup>20</sup> 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.<sup>21</sup> 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 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.

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<sup>20</sup> 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.

<sup>21</sup> 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.

### 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** present the measured ambient pollutant concentrations and the exceedances of state and federal standards that have occurred at the above-mentioned monitoring stations from 2010 through 2012, 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 USEPA, 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 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 pollutants include particulate matter, ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. For each pollutant, the 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

**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)		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
<b>1-Hour Ozone</b>												
<i>Arvin-Di Giorgio</i>	15	16	21	0.109	0.124	0.108	0	0	0	0.109	0.124	0.108
<i>Bakersfield 5558 California Avenue</i>	3	6	0	0.102	0.104	0.092	0	0	0	0.102	0.104	0.092
<i>Bakersfield Municipal Airport</i>	10	23	8	0.108	0.118	0.102	0	0	0	0.108	0.118	0.102
<i>Edison</i>	15	17	14	0.107	0.112	0.109	0	0	0	0.107	0.112	0.109
<i>Maricopa Stanislaus Street</i>	0	0	0	0.090	0.094	0.092	0	0	0	0.190	0.094	0.092
<i>Mojave 923 Poole Street</i>	9	1	2	0.104	0.104	0.104	0	0	0	0.104	0.104	0.104
<i>Oildale 3311 Manor Street</i>	0	2	0	0.093	0.099	0.093	0	0	0	0.093	0.099	0.093
<i>Shafter Walker Street</i>	2	3	1	0.100	0.104	0.096	0	0	0	0.100	0.104	0.096
<b>8-Hour Ozone</b>												
<i>Arvin-Di Giorgio</i>	69	55	82	0.092	0.101	0.092	53	53	78	0.091	0.101	0.091
<i>Bakersfield 5558 California Avenue</i>	39	54	63	0.093	0.097	0.086	52	52	60	0.092	0.096	0.085
<i>Bakersfield Municipal Airport</i>	60	73	66	0.095	0.106	0.093	69	69	63	0.095	0.106	0.093
<i>Edison</i>	55	45	68	0.92	0.099	0.090	42	42	64	0.091	0.099	0.090
<i>Maricopa Stanislaus Street</i>	25	32	55	0.084	0.088	0.087	32	32	50	0.083	0.087	0.087
<i>Mojave 923 Poole Street</i>	95	33	60	0.096	0.085	0.093	31	31	52	0.095	0.084	0.093
<i>Oildale 3311 Manor Street</i>	25	33	7	0.085	0.092	0.084	33	33	7	0.085	0.092	0.084
<i>Shafter Walker Street</i>	28	34	50	0.087	0.091	0.087	34	34	49	0.087	0.090	0.087
<b>CO</b>												
<i>No data.</i>	*	*	*	*	*	*	*	*	*	*	*	*
<b>NOx</b>												
<i>No data.</i>	*	*	*	*	*	*	*	*	*	*	*	*
<b>SOx (sulfur oxides)</b>												
<i>No data.</i>	*	*	*	*	*	*	*	*	*	*	*	*
<b>PM2.5</b>												
<i>Bakersfield 410 E Planz Road</i>	*	18	*	91.0	83.2	51.4	*	38	*	91.0	83.2	51.4

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)		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
<i>Bakersfield 5558 California Avenue</i>	19	17	14.5	101.9	111.9	66.4	39	32	26	101.9	107.8	66.4
<i>Bakersfield-Golden State Highway</i>	*	17	14.8	107.2	91.1	53.9	*	31	22	107.2	91.91	53.9
<i>Lebec- Beartrap Road</i>	*	*	*	38.7	23.0	32.2	*	*	*	*	*	*
<i>Mojave 923 Poole Street</i>	6	*	*	36.5	42.2	25.7	1	2	0	36.5	42.2	25.7
<i>Ridgecrest 100 West California Avenue</i>	*	*	*	10.5	12.5	25.8	*	0	*	10.5	12.5	25.8
<b>PM10</b>												
<i>Bakersfield 5558 California Avenue</i>	*	121	121	419.5	103.6	92.2	*	0	0	430.1	104.7	90.9
<i>Bakersfield-Golden State Highway</i>	*	*	158	*	94.6	91.6	*	*	0	*	100.5	91.6
<i>Canebrake</i>	13	6	*	78.9	59.4	52.9	0	0	*	86.6	67.1	58.9
<i>Mojave 923 Poole Street</i>	13	5	19	171.0	74.9	130.3	1	0	0	184.2	80.4	139.2
<i>Oildale 3311 Manor Street</i>	*	*	*	335.6	104.4	88.4	*	*	0	336.4	98.5	89.1
<i>Ridgecrest 100 West California Avenue</i>	0	0	*	47.6	43.3	59.0	0	0	0	51.8	44.5	66.2

Source: CARB. Top 4 Measurements and Days Above the Standard. <http://www.arb.ca.gov/adam/index.html>. Accessed December 2017, \* Insufficient data.

implementation plans (SIPs), applicable to appropriate industrial sources in the state, in order to achieve these standards.

The USEPA is responsible for enforcing the federal Clean Air Act and the NAAQS. The USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The USEPA 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<sub>3</sub>, CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, 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 USEPA 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 lowering 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 USEPA 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<sub>x</sub>, 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 USEPA 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<sub>2</sub>, 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 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<sub>3</sub>, CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, sulfates, lead, hydrogen sulfide, and visibility-reducing particles.<sup>22</sup> Air quality of a region is considered to be in attainment of the state standards if the measured ambient air pollutant levels for O<sub>3</sub>, CO, NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> (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 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

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<sup>22</sup> 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.

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), who 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 (HRA) for carcinogenic and non-carcinogenic exposures to air toxics in accordance with the Air Toxics Hot Spots Information and Assessment Act.<sup>23</sup> 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

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<sup>23</sup> OEHHA, Guidance Manual for Preparation of Health Risk Assessments, February 2015.

formulate the recommended exposure estimation methodologies. The OEHHA guidance acknowledges that children are especially susceptible to the effects of toxic air contaminant exposure, and incorporated 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.

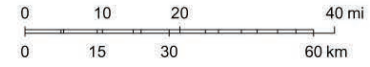
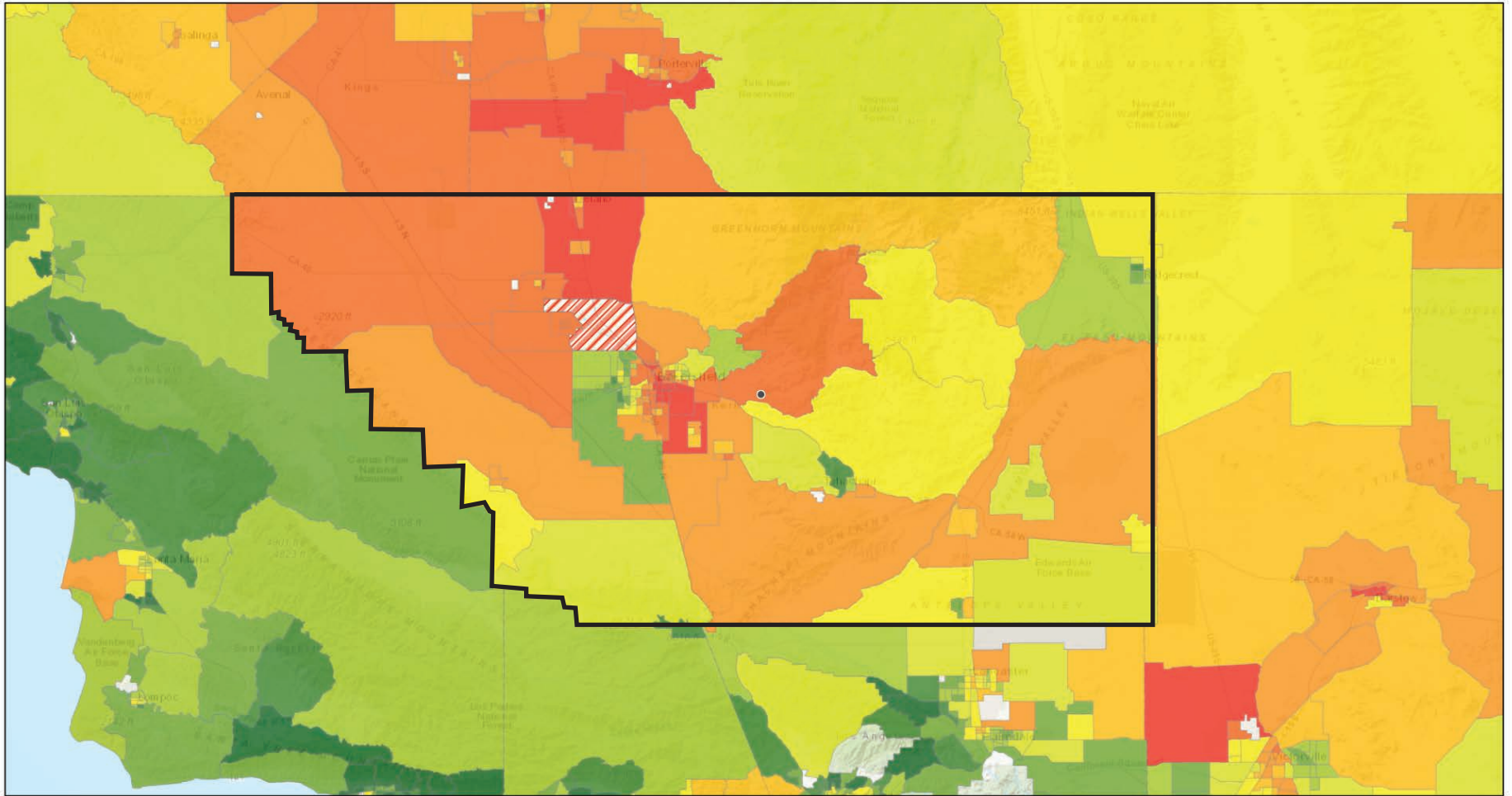
OEHHA has created a publicly available mapping tool called CalEnviroScreen, which helps identify California communities that are most affected by many sources of pollution, and where people are often especially vulnerable to pollution's effects. CalEnviroScreen uses environmental, health, and socioeconomic 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 3.0 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 and continue to be evaluated and developed. 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.



SOURCE: OEHHA, 2018

FIGURE 4.3-2

### 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.

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, PM<sub>10</sub> and PM<sub>2.5</sub>. The air district has developed a new plan for 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 June 16, 2016.<sup>24</sup> The plan addresses federal regulations about the 2008 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 PM<sub>10</sub>, but produced a maintenance plan in 2007 which remains in effect. On September 15, 2016, CARB approved the air district's 2016 Moderate Area Plan for the 2012 PM<sub>2.5</sub> Standard. The plan sets out the strategy to attain the federal 2012 PM<sub>2.5</sub> federal annual air quality standard of 12 µg/m<sup>3</sup> by 2021.

#### **Regulation VIII Fugitive PM<sub>10</sub> Prohibitions**

The SJVAPCD Rules and Regulations include Regulation VIII Fugitive PM<sub>10</sub> Prohibitions, which was developed to reduce ambient concentrations of fine particulate matter (PM<sub>10</sub>) by developing rules to control specified anthropogenic fugitive dust sources. The rules were developed pursuant to the USEPA guidance for Serious PM<sub>10</sub> Nonattainment Areas. Regulation VIII has seven rules aimed at controlling

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<sup>24</sup> [http://www.valleyair.org/Air\\_Quality\\_Plans/Ozone-Plan-2016/Adopted-Plan.pdf](http://www.valleyair.org/Air_Quality_Plans/Ozone-Plan-2016/Adopted-Plan.pdf)

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 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 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 January 9, 2003, EKAPCD adopted the East Kern Ozone Attainment Demonstration, Maintenance Plan and Redesignation Request for the East Kern County nonattainment area. On May 1, 2003, the EKAPCD Board adopted amendments to the January 2003 plan and on December 9, 2003, CARB adopted and submitted the amended plan to EPA. As a moderate ozone nonattainment area, EKAPCD is required to adopt retrofit Reasonably Available Control Technology rules for all sources of ozone precursor emissions. EKAPCD has fulfilled this mandate by adopting a number of rules between 1987 and 2005 which aim to reduce ozone precursor emissions.

### **2017 Ozone Attainment Plan**

The EKAPCD is located on the edge of the Mojave Desert, with geography, topography, and meteorology that make limiting ozone uniquely difficult. Not surprisingly, the EKAPCD has been, and currently is, non-attainment for the national and state 8-Hour ozone standard and the state 1-hour ozone standard. In

1993, the EKAPCD adopted an attainment plan to meet the national and state standards for ozone pursuant to existing mandates. The plan has since been revised many times, most recently in 2017, as standards are attained and new goals are set. While significant progress towards ozone reduction has been made within the district, the attainment status has yet to be reached. The 2017 plan identifies emissions control and reduction measures, aimed at demonstrating O<sub>3</sub> standard attainment by 2020.

General plans contain policies applicable to air quality; the following discusses applicable policies from the Kern County and Bakersfield General Plans as these two jurisdictions are the largest and would be most affected by the attainment plan. The General Plans of the smaller cities contain similar policies.

#### 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 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 PM<sub>10</sub> and PM<sub>2.5</sub> 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 which 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 increase 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 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 with 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 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

### 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 2018 RTP. Impacts related to air quality are considered significant if the proposed project would meet the following criteria:

- Projected long-term emissions from all sources (stationary and mobile) would be considered significant if they are not consistent with the applicable air quality management plans and state implementation plans.
- Projected long-term emissions of criteria pollutants are considered significant if they are substantially greater than current emission levels.
- Projected short-term emissions of criteria pollutants (construction of transportation projects and anticipated development) are considered significant if they would result in substantial criteria pollutant emissions.
- Projected long-term emissions of toxic air contaminants (diesel particulate matter from heavy-duty diesel trucks and other emissions from industrial activities) are considered significant if they would be greater than current emission levels.
- Localized concentrations of toxic air contaminants at sensitive receptors (short-term and/or long-term) are considered significant if they would exceed existing conditions.

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 2018 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/SCS, 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. The SJVAPCD GAMAQI contains a list of feasible control measures for construction-related PM10 emissions.

##### ***Long-Term Emissions Methodology***

The methodology for determining the significance of air quality impacts compares existing conditions to the 2018 RTP conditions in the year 2042, as required in CEQA Section 15126.2(a). The project's long-term impacts to 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 (NO<sub>x</sub> 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 EMFAC2014 emissions factors and multiplied by VMT. The projected VMT were 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 2042 under the 2018 RTP were compared with State Implementation Plan (SIP) emissions budgets. If countywide mobile source ROG or NO<sub>x</sub> 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 to air quality. Short-term air quality impacts would be generated during construction of the capital improvements listed in the 2018 RTP as well as future development facilitated by the SCS land use pattern. Long term emissions would be generated 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.

### *Determination of Significance*

The methodology for determining the significance of air quality impacts compares existing air quality to the expected future air quality with 2018 RTP. The criteria above were applied to compare criteria pollutant emissions generated by the expected future (2042) Plan conditions to the significance criteria.

Implementation of the 2018 RTP would generate criteria pollutant emissions in Kern. The analysis of these impacts is programmatic at the regional level. 2018 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.

#### **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**                    **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.**

### ***Regional Impacts***

The 2018 RTP would result in a less than significant impact to 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, found in the appendices to the 2018 RTP/SCS. 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 year. 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.

### ***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**                    **Projected long-term emissions of criteria pollutants are considered significant if they are substantially greater than current emission levels.**

### ***Regional Impacts***

Emissions of criteria pollutants from mobile sources would be affected by implementation of the 2018 RTP/SCS. In order to analyze the net impact of implementation, existing year (2017) emissions were compared to buildout year (2042) emissions for the 2018 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, Criteria Pollutant Emissions from Mobile Sources**. As shown, there are dramatic reductions of ROG, NO<sub>x</sub>, and CO. These would be considered beneficial impacts. Emissions of SO<sub>x</sub> increase slightly, but as Kern County is in attainment for both state and federal SO<sub>2</sub> and the increase would not cause non-attainment, this would not be considered a significant impact on its own. Emissions of PM<sub>10</sub> and PM<sub>2.5</sub> from mobile sources show a slight increase for both scenarios.

**Table 4.3-4  
Criteria Pollutant Emissions from Mobile Sources**

Scenario	Tons/Day					
	ROG	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>x</sub>
Existing 2017	6.51	29.70	44.60	1.74	0.84	0.15
2018 RTP 2042	3.14	11.60	19.80	2.20	0.89	0.15
<b>2018 RTP Net</b>	<b>-3.37</b>	<b>-18.10</b>	<b>-24.80</b>	<b>0.46</b>	<b>0.05</b>	<b>&lt;0.01</b>
No Project 2042	3.34	12.20	21.10	2.33	0.94	0.16
<b>No Project Net</b>	<b>-3.17</b>	<b>-17.5</b>	<b>-23.5</b>	<b>0.59</b>	<b>0.11</b>	<b>0.01</b>

*Source: Kern COG 2017*

The increase in PM<sub>10</sub> emissions is approximately 26 percent. As VMT increases so does entrained roadway PM<sub>10</sub> and PM<sub>2.5</sub> (e.g., dust from brake and tire wear). The 2018 RTP would increase VMT when compared to existing conditions and therefore entrained roadway PM<sub>10</sub> and PM<sub>2.5</sub> would increase. However, stringent emissions controls would substantially reduce exhaust emissions of PM<sub>10</sub>, PM<sub>2.5</sub> 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 2018 RTP that analyzes emissions of ozone precursors (ROG and NO<sub>x</sub>), CO, PM<sub>10</sub> and PM<sub>2.5</sub> 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 the **Subsection 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 PM<sub>10</sub> and PM<sub>2.5</sub>. In sum, while there is a small increase in PM<sub>10</sub> and PM<sub>2.5</sub> for the County, it is not a substantial increase and is not expected to inhibit the County's progress toward attainment status for PM<sub>10</sub> or PM<sub>2.5</sub>; 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                      Projected short-term emissions of criteria pollutants (construction of transportation projects and anticipated development) are considered to be significant if they would result in substantial criteria pollutant emissions.**

### ***Regional Impacts***

Implementation of the 2018 RTP would result in construction of roadways and other transportation projects as well as general construction as part of regional growth. These construction activities would result in short-term emissions of air pollutants including ROG, NO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> 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. 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 have numerical significance thresholds specific to 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 NO<sub>x</sub> 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 2018 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 emissions. However, given the unknown scale of construction over the period of the 2018 RTP it is possible that NO<sub>x</sub> emissions could exceed the annual threshold in the SJVAPCD jurisdiction. Consequently, it is conservatively assumed that short-term 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. See **Mitigation Measure MM AIR-1**.

### *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 NO<sub>x</sub> threshold, as discussed above for regional impacts. This impact is therefore considered to be significant. See **Mitigation Measure MM AIR-1**.

### *Level of Significance Before Mitigation*

Significant at the regional and TPA levels.

### *Mitigation Measure*

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 2018 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.

**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 NO<sub>x</sub> 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.

**Impact AIR-4**                    **Projected long-term emissions of toxic air contaminants (DPM from heavy-duty diesel trucks and other emissions from industrial activities) are considered significant if they would be greater than current emission levels.**

**Impact AIR-5**                    **Localized concentrations of toxic air contaminants at sensitive receptors (short-term and/or long-term) are considered significant if they would exceed existing conditions.**

### *Regional Impacts*

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 PM<sub>2.5</sub>, this means that over 90 percent of DPM is in the form of PM<sub>2.5</sub>, with less than 10 percent existing as PM<sub>10</sub>. PM<sub>10</sub> emissions from mobile sources mainly result from tire wear, brake dust, road dust being re-entrained rather than fuel combustion; therefore, PM<sub>2.5</sub> emissions will be used as a proxy for DPM emissions in this analysis. As shown in **Table 4.3-4** above, emissions of PM<sub>2.5</sub> for all mobile sources would increase slightly with the 2018 RTP.

In order to more closely evaluate DPM emissions, PM<sub>2.5</sub> emissions specifically from heavy duty diesel vehicles were estimated. These emissions under existing conditions as compared to the 2018 RTP Plan and No Project Alternatives is shown in **Table 4.3-5, PM<sub>2.5</sub> Emissions from Heavy Duty Diesel Vehicles.**

**Table 4.3-5**  
**PM<sub>2.5</sub> Emissions from Heavy Duty Diesel Vehicles (tons/day)**

Existing 2017	2042 RTP Plan	2042 No Project
0.386	0.259	0.273

*Source: Kern COG 2018*

PM<sub>2.5</sub> emissions from heavy-duty diesel vehicles in 2042 would be less than the emissions under existing conditions for the 2018 RTP. Further, 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 marine and off-road diesel vehicles. These programs and regulations would reduce DPM emissions over the period of the 2018 RTP. Consequently, it can be assumed that the reductions in PM<sub>10</sub> emissions include reductions in DPM emissions region-wide.

While in general DPM emissions in the future would be reduced, RTP improvements could bring sources of DPM closer to some sensitive receptors through construction of new facilities or widened roadways, 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.

The AQI for highways in Kern County for Existing, 2042 Plan and 2042 No Plan conditions are shown in **Figures 4.3-3 through 4.3-5 (Figure 4.3-3, Sensitive Receptors within 0.25 Mile of Highways Under Existing Conditions. Figure 4.3-4, Sensitive Receptors within 0.25 Mile of Highways Under the 2042 RTP Plan and Figure 4.3-5, Sensitive Receptors within 0.25 Mile of Highways Under the 2042 No Build Alternative)**. Sensitive receptors including the number of schools, hospitals, and households within a quarter mile of each highway, are listed and sorted by AQI. The figures show that in 2042 under the 2018 RTP, more highways are identified as having a higher AQI rank than under existing conditions.

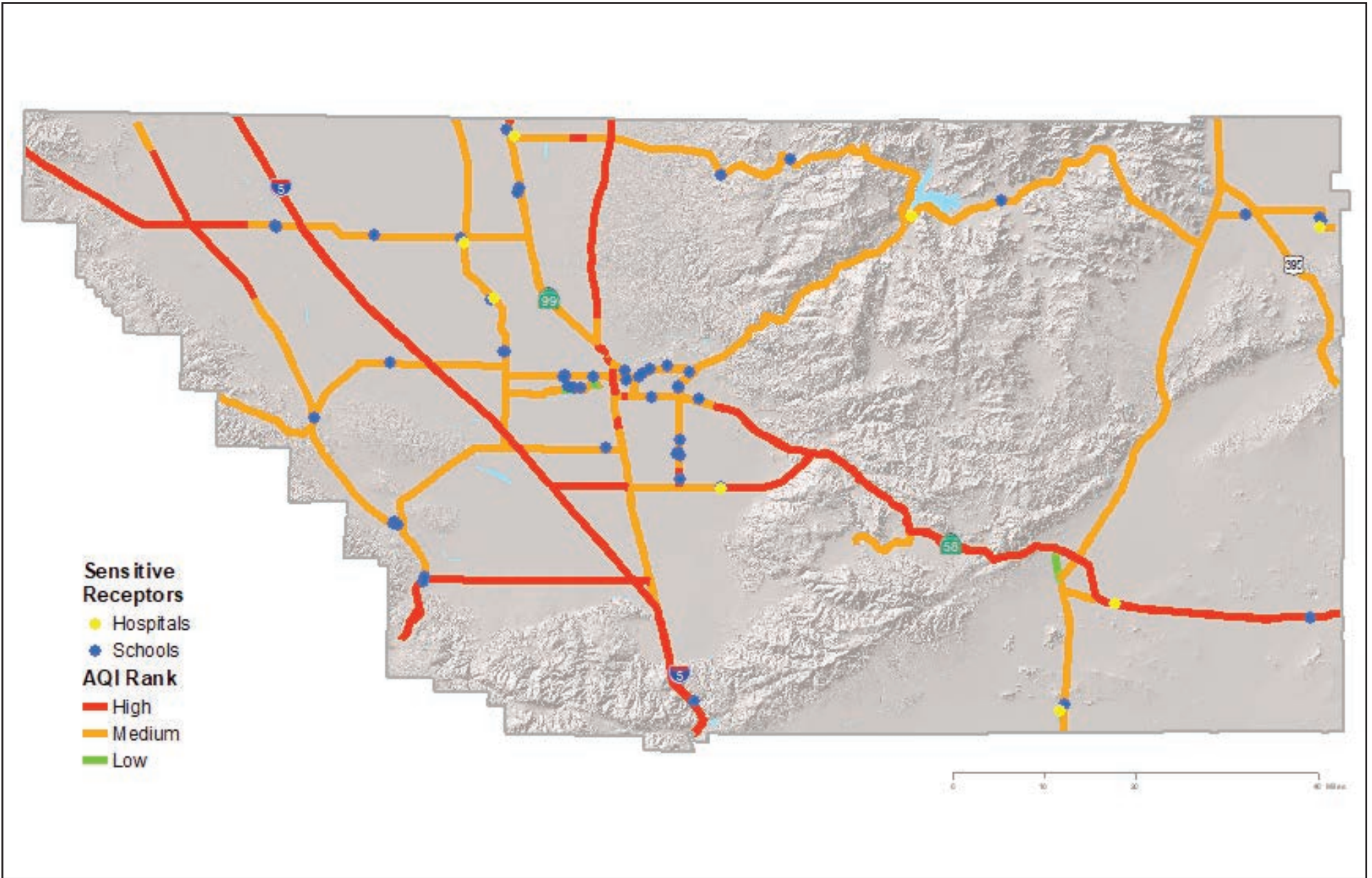
As shown in the figures, between 2017 and 2042 several segments would move from medium to high AQI ranking and other segments would move from high to medium AQI ranking. As a result, the 2018 RTP would not substantially increase or decrease the number of sensitive receptors including schools, households and hospitals that would be located within a quarter mile of highways. However, as noted above PM<sub>2.5</sub> 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, even if the number of vehicle miles traveled increases by 64 percent, reductions of 57 percent to 87 percent in toxic air contaminants are projected from 2000 to 2020. While more people may be located in proximity to heavily travelled roadways, the risks from most of these roadways would be reduced because of emissions controls.

The Southern California Association of Governments (SCAG) performed a screening risk assessment<sup>25</sup> of freeway corridors in the south coast region. The assessment analyzed traffic on freeway segments in each of the counties in the SCAG region, as well as two segments judged to be of “heightened’ interest,” for a total of eight freeway corridors. Each of these corridors was projected to see increased vehicle traffic in 2040 compared to 2016. Despite this, cancer risks were calculated to decrease between 2016 and 2040 substantially in all scenarios for residents and workers along the freeway corridors.

In the Kern COG region, a count of vehicle traffic along freeway segments in Kern County for 2017 and 2042 was performed. The highest segment was along SR99, where traffic volumes are projected to increase from 170,000 vehicles per day in 2017 to 207,997 vehicles per day in 2042, for an increase of 37,997 or 22 percent. The most similar segment in the SCAG study was Interstate 10 (I-10) in Riverside County, which was projected to increase from 155,691 vehicles per day in 2015 to 195,821 vehicles per day in 2040 (an increase of 40,130 vehicles, or 26 percent). The SCAG study found that residential cancer risk along I-10 would decrease from 152 additional cases in a million in 2015 to 15 additional cases in 2040. Workplace cancer risk along SR91 would decrease from 23 additional cases in 2015 to 2 cases in 2040.

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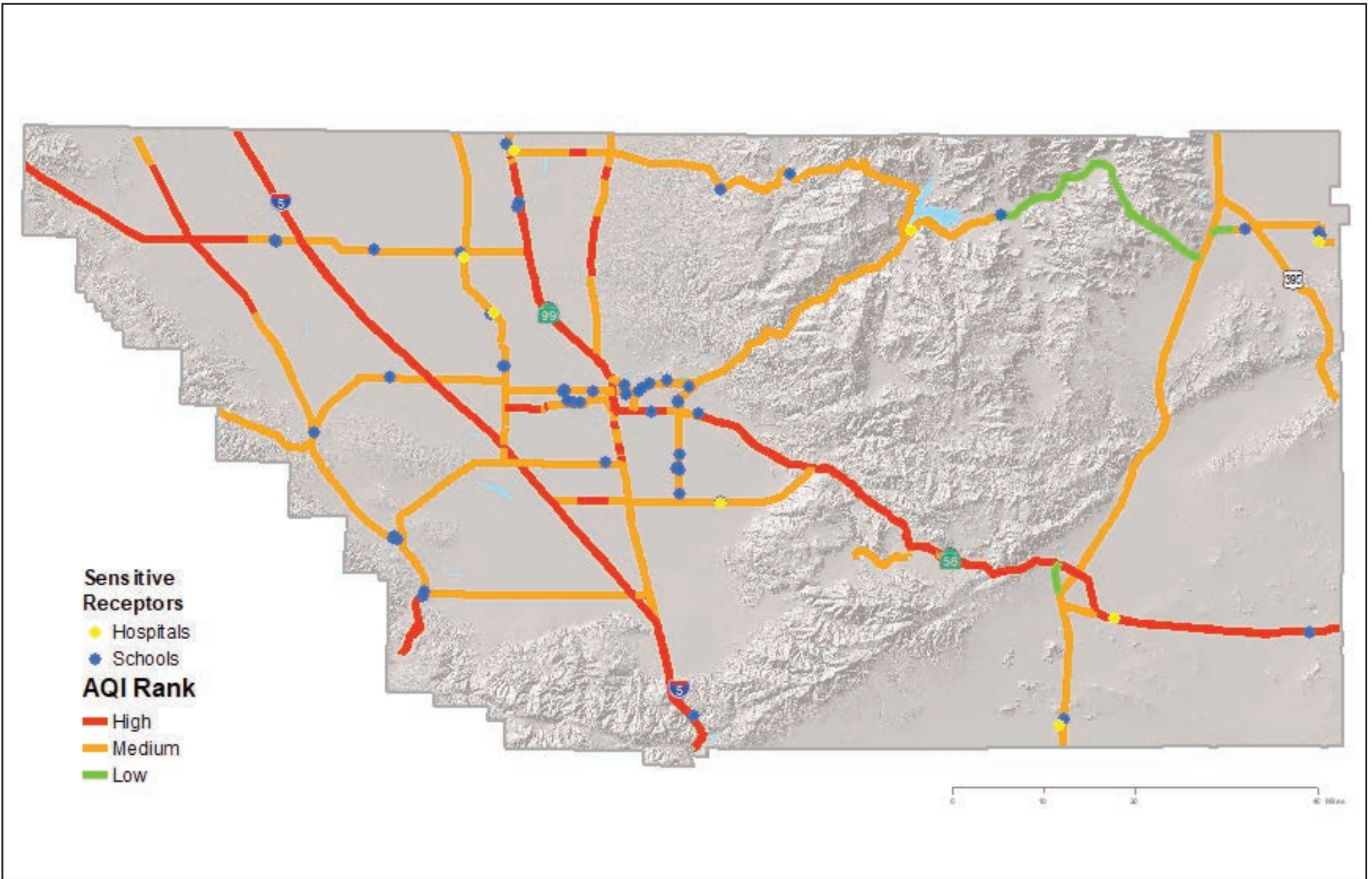
<sup>25</sup> Southern California Association of Governments, *Program Environmental Impact Report 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, Appendix D*.



SOURCE: Kern Council of Governments (AQI Ranking Method, SANDAG), 2018

FIGURE 4.3-3

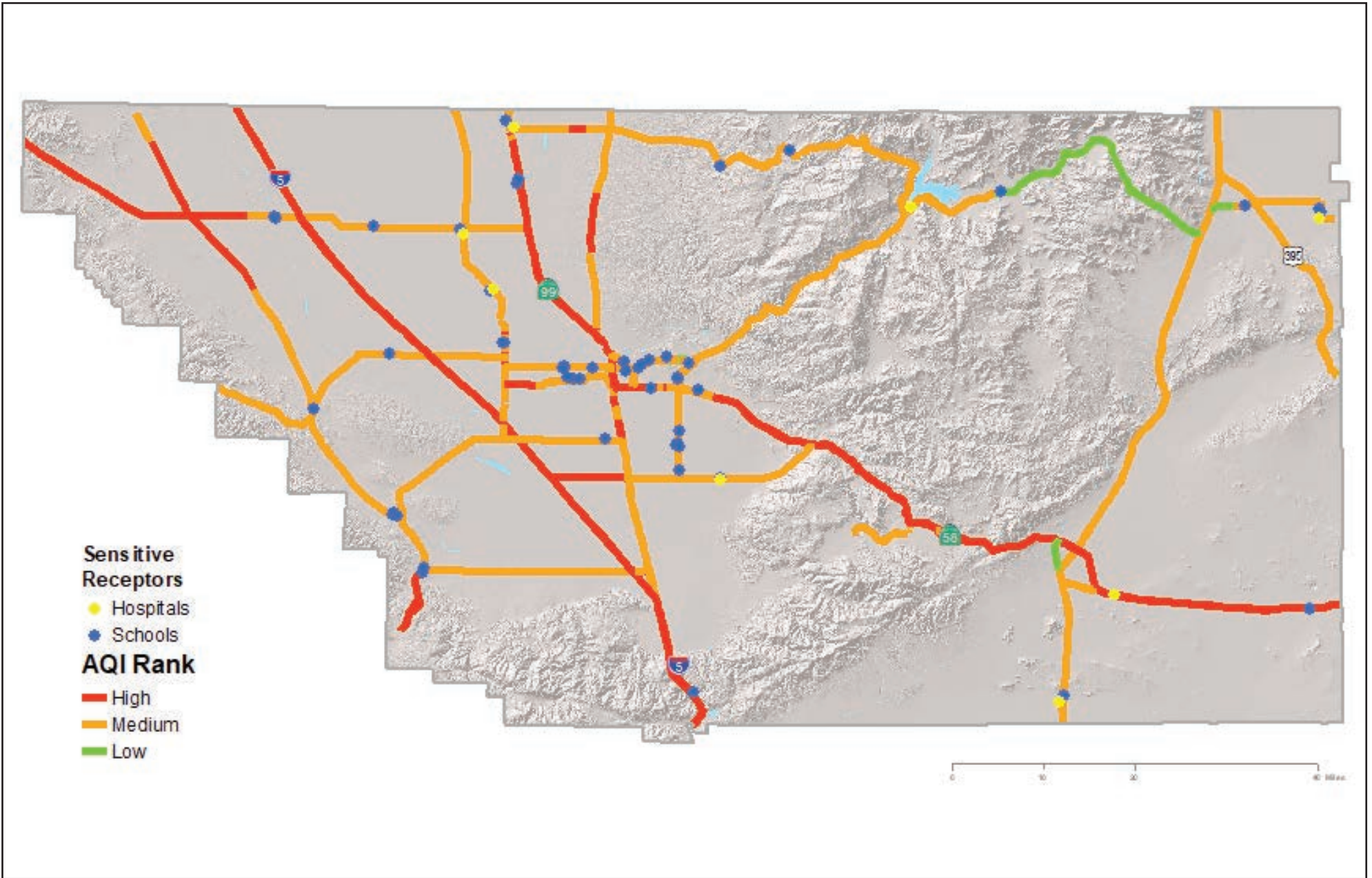
Sensitive Receptors within 0.25 Mile of Highways under Existing Conditions



SOURCE: Kern Council of Governments (AQI Ranking Method, SANDAG), 2018

FIGURE 4.3-4

Sensitive Receptors within 0.25 Mile of Highways under the 2018 RTP (2042)



SOURCE: Kern Council of Governments (AQI Ranking Method, SANDAG), 2018

FIGURE 4.3-5

Sensitive Receptors within 0.25 Mile of Highways under the No Project Alternative (2042)

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 2018 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 2042. As such, it is difficult to determine what contribution these sources would have to sensitive receptors, and how the 2018 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 2042 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 Nino 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 2018 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 2018 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 2018 RTP/SCS, which would 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 2018 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



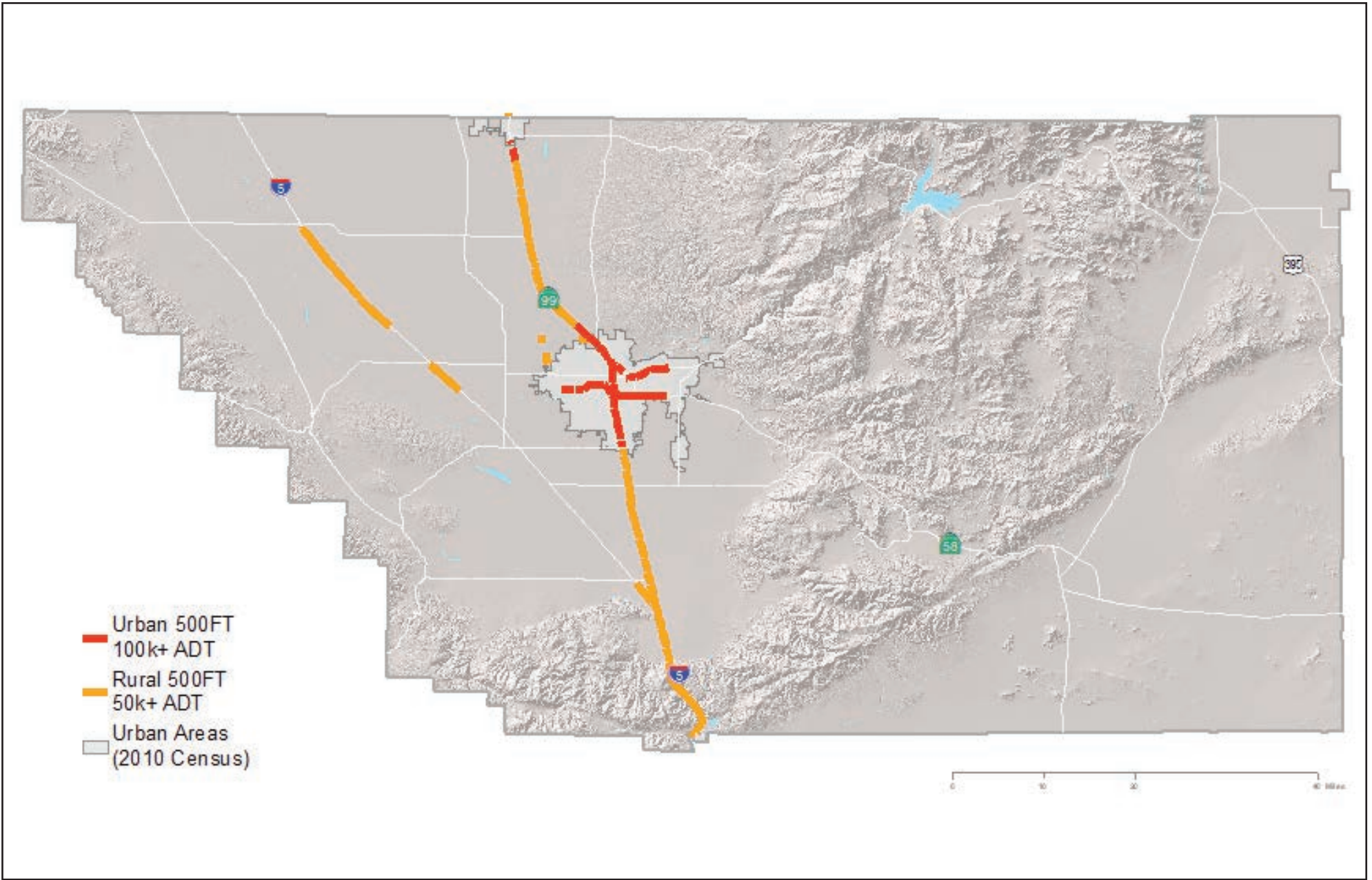
components of vehicle exhaust, though a small portion occur as fugitive emissions that are emitted during fueling or fuel transport. Fugitive emissions of TACs are relatively minor in amount, and would not be considered likely to affect the overall rate of TAC emissions. TAC emissions present in vehicle exhaust are typically ROG, 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 2018 RTP which would reflect a general reduction of TACs in vehicle exhausts as well as reductions in PM<sub>2.5</sub> from heavy duty vehicle exhausts (Table 4.3-5).

Freeways and other heavily travelled 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.<sup>26</sup> 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 **Figures 4.3-6** and **4.3-7**, the 2018 RTP would place more households and places of employment within 500 feet of high volume roadways than under the No Project Alternative. While the 2018 RTP would decrease emissions of 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. 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** and **Impact AIR-5**. See **Mitigation Measures MM AIR-2** through **MM AIR-7**.

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<sup>26</sup> California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005



SOURCE: Kern Council of Governments, 2018

FIGURE 4.3-6

Housing and Employment within 500 Feet of High-Volume Roadways under the 2018 RTP (2042)



SOURCE: Kern Council of Governments, 2018

FIGURE 4.3-7

Housing and Employment within 500 Feet of High-Volume Roadways under the No Project Alternative (2042)

### *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 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 travelled 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** and **Impact AIR-5** are considered significant at the TPA level. See **Mitigation Measures MM AIR 2** through **MM AIR 7**.

### *Level of Significance Before Mitigation*

Potentially significant at the regional and TPA levels.

### *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 USEPA to reduce emissions from federal and state sources; and
- Pursue long-term advanced technology measures.
- Proposed new transportation-related SIP measures include:<sup>27</sup>

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<sup>27</sup> ARB. April 26, 2007. Proposed New SIP Measures – Descriptions. <http://www.arb.ca.gov/planning/sip/2007sip/apr07draft/sipmeas.pdf>.

**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
- 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 pollutants 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 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.

### *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, impacts could remain significant and unavoidable.

#### **4.3.4 CUMULATIVE IMPACTS**

The 2018 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 2018 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 2018 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, implementation of the 2018 RTP combined with cumulative development outside Kern County would add to the significant air quality impacts of the 2018 RTP.

Implementation of **Mitigation Measures AIR-1** through **AIR-7** would reduce the 2018 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

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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 2018 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 (CNDDDB) and the California Department of Fish and Wildlife (CDFW).

### 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 were taken from the Kern County Revised General Plan Update Recirculated Draft Program EIR,<sup>1</sup> and include the most characteristic of the distinct ecological communities in the regions.

#### *Urban/Developed*

Urban or developed land is comprised of 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

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<sup>1</sup> Revised Update of the Kern County General Plan, Recirculated Draft EIR, January 2004  
[https://www.kerncounty.com/planning/pdfs/kcgp/KCGP\\_RPEIR\\_vol1.pdf](https://www.kerncounty.com/planning/pdfs/kcgp/KCGP_RPEIR_vol1.pdf)

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 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 minimally developed understory. Vegetation that does occur is usually low, grayish, microphyllous and succulent shrubs. Characteristic species include iodine bush (*Allenrolfea occidentalis*), 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 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 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. 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 shrub is the clustered-stemmed Joshua tree, *Yucca brevifolia*, which grows in most of the 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, rainfall is estimated between 12 to 13 inches annually. Chaparral in 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 wildflower. 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 are 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 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 to 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, 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 simulate the old wetland habitats, and have 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 the 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 Potrerros, 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-foot 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 probably not rare. Typical summer temperatures are about 85° F with extremes probably no more than 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*), buttonwillow (*Cephalanthus occidentalis* var. *californicus*) are common along Kern River and occasionally along the streams in the Greenhorn Range. Along 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 macrophyllum*) 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), that 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 recurvatum*), saltgrass (*Distichlis spicata*), and Mojave red sage (*Koeberlinia 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 Sierran 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 Emigdio-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**, show the location of each of 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 protection of outstanding scenic values and wildlife habitat. The park is comprised of 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***

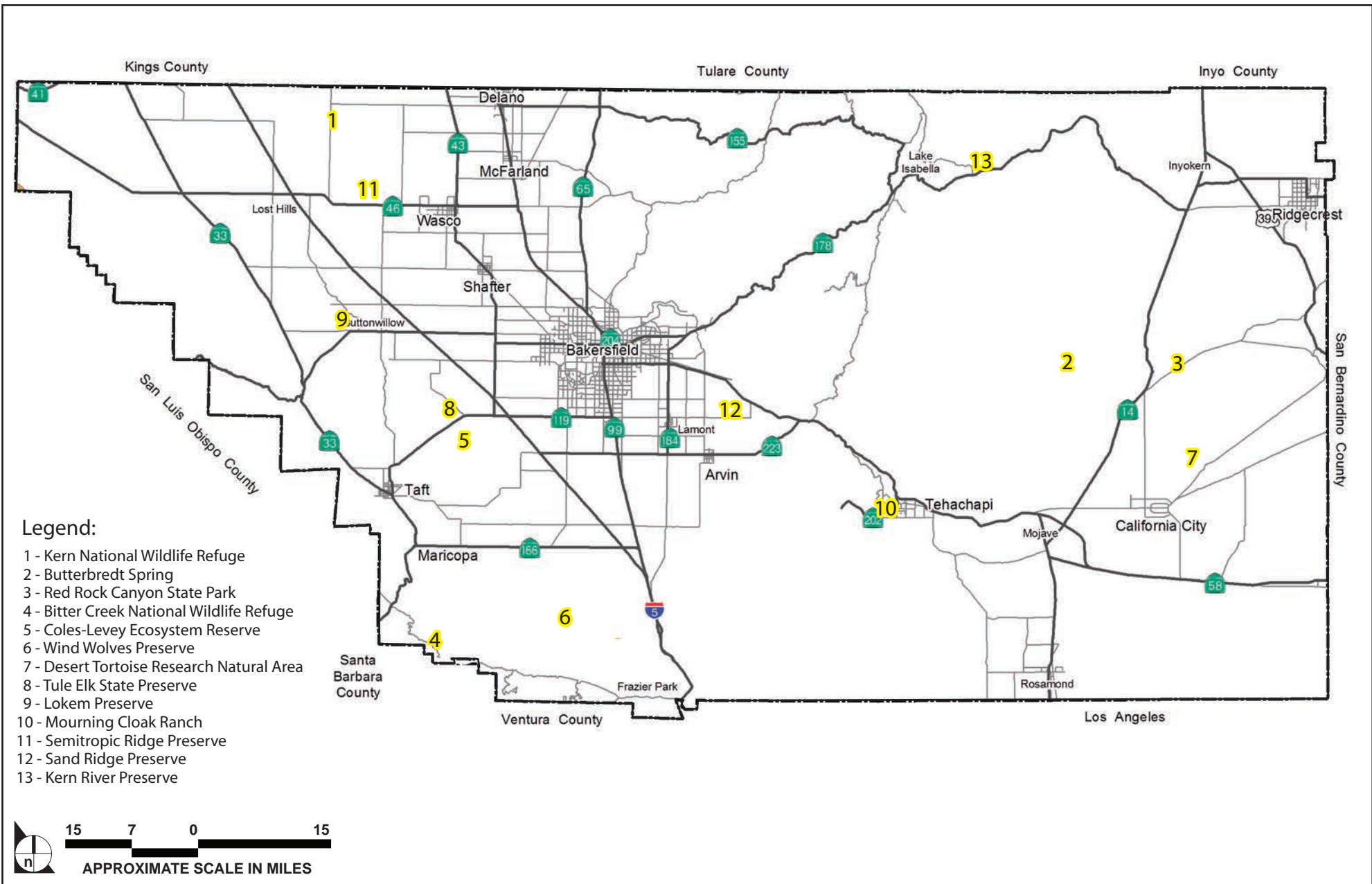
The 6,059 acre preserve was created in October 1992 and supports habitat for the Valley saltbrush scrub, Valley sink scrub, sancaton grassland, sloughs, Great Valley cottonwood riparian, vernal playas, San Joaquin kit fox, Tipton kangaroo rat, giant kangaroo rat, blunt-nosed leopard lizard, and the Swainson's 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 is comprised of 25,695 acres.



SOURCE: Kern Council of Governments, December 2013

FIGURE 4.4-1

### ***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 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. The preserve managers, the State Department of Parks and Recreation, are considering various solutions to providing suitable habitat for 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 relicts 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 8,131 total 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 & Butterbrecht 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. Butterbrecht 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 is restricted. The Audubon Society, in cooperation with the private landowner, has established the spring as a wildlife sanctuary.

### ***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 nonnatives 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, totaling 1,054,432 acres. Both agencies manage under the mandate of multiple use policies that permit certain activities on public lands, while managing for conservation and recovery of habitat and wildlife.

### ***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***

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. 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 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***

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 are

well established and is referred to as 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 is 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 preserve 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 (*Castilleja 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 a 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 CNDDDB, 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 287 special status species within the region: 180 plants and 108 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 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	CNPS
<i>Plagiobryoides vinosula</i>	wine-colored tufa moss	None	None	4.2
<i>Tortula californica</i>	California screw moss	None	None	1B.2
<i>Allium atrorubens</i> var. <i>cristatum</i>	Inyo onion	None	None	4.3
<i>Allium howellii</i> var. <i>clokeyi</i>	Mt. Pinos onion	None	None	1B.3
<i>Allium howellii</i> var. <i>howellii</i>	Howell's onion	None	None	4.3
<i>Allium shevockii</i>	Spanish Needle onion	None	None	1B.3
<i>Angelica callii</i>	Call's angelica	None	None	4.3
<i>Cymopterus deserticola</i>	desert cymopterus	None	None	1B.2
<i>Eryngium spinosepalum</i>	spiny-sepaled button-celery	None	None	1B.2
<i>Lomatium shevockii</i>	Owens Peak lomatium	None	None	1B.3
<i>Oreonana vestita</i>	woolly mountain-parsley	None	None	1B.3
<i>Perideridia bacigalupii</i>	Bacigalupi's yampah	None	None	4.2
<i>Perideridia gairdneri</i> ssp. <i>gairdneri</i>	California Gairdner's yampah	None	None	4.2
<i>Perideridia pringlei</i>	adobe yampah	None	None	4.3
<i>Almutaster pauciflorus</i>	alkali marsh aster	None	None	2B.2
<i>Carlquistia muirii</i>	Muir's tarplant	None	None	1B.3
<i>Cirsium crassicaule</i>	slough thistle	None	None	1B.1
<i>Deinandra arida</i>	Red Rock tarplant	None	Rare	1B.2
<i>Deinandra halliana</i>	Hall's tarplant	None	None	1B.1
<i>Deinandra mohavensis</i>	Mojave tarplant	None	Endangered	1B.3
<i>Deinandra paniculata</i>	paniculate tarplant	None	None	4.2
<i>Ericameria gilmanii</i>	Gilman's goldenbush	None	None	1B.3
<i>Erigeron aequifolius</i>	Hall's daisy	None	None	1B.3
<i>Erigeron multiceps</i>	Kern River daisy	None	None	1B.2
<i>Eriophyllum confertiflorum</i> var. <i>tanacetiflorum</i>	tansy-flowered woolly sunflower	None	None	4.3
<i>Eriophyllum lanatum</i> var. <i>hallii</i>	Fort Tejon woolly sunflower	None	None	1B.1
<i>Eriophyllum lanatum</i> var. <i>obovatum</i>	southern Sierra woolly sunflower	None	None	4.3
<i>Eriophyllum mohavense</i>	Barstow woolly sunflower	None	None	1B.2
<i>Hecastocleis shockleyi</i>	prickle-leaf	None	None	3
<i>Hesperovax caulescens</i>	hogwallow starfish	None	None	4.2
<i>Heterotheca shevockii</i>	Shevock's golden-aster	None	None	1B.3
<i>Lasthenia ferrisiae</i>	Ferris' goldfields	None	None	4.2
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	None	None	1B.1
<i>Layia heterotricha</i>	pale-yellow layia	None	None	1B.1
<i>Layia leucopappa</i>	Comanche Point layia	None	None	1B.1
<i>Layia munzii</i>	Munz's tidy-tips	None	None	1B.2
<i>Madia radiata</i>	showy golden madia	None	None	1B.1

Scientific Name	Common Name	Status		
		Federal	State	CNPS
<i>Microseris sylvatica</i>	sylvan microseris	None	None	4.2
<i>Monolopia congdonii</i>	San Joaquin woollythreads	Endangered	None	1B.2
<i>Pentachaeta fragilis</i>	fragile pentachaeta	None	None	4.3
<i>Pseudobahia peirsonii</i>	San Joaquin adobe sunburst	Threatened	Endangered	1B.1
<i>Stylocline citroleum</i>	oil neststraw	None	None	1B.1
<i>Stylocline masonii</i>	Mason's neststraw	None	None	1B.1
<i>Symphotrichum defoliatum</i>	San Bernardino aster	None	None	1B.2
<i>Syntrichopappus lemmonii</i>	Lemmon's syntrichopappus	None	None	4.3
<i>Azolla microphylla</i>	Mexican mosquito fern	None	None	4.2
<i>Amsinckia douglasiana</i>	Douglas' fiddleneck	None	None	4.2
<i>Amsinckia furcata</i>	forked fiddleneck	None	None	4.2
<i>Cryptantha clokeyi</i>	Clokey's cryptantha	None	None	1B.2
<i>Cryptantha incana</i>	Tulare cryptantha	None	None	1B.3
<i>Cryptantha tumulosa</i>	New York Mountains cryptantha	None	None	4.3
<i>Plagiobothrys torreyi</i> var. <i>perplexans</i>	chaparral popcornflower	None	None	4.3
<i>Caulanthus californicus</i>	California jewelflower	Endangered	Endangered	1B.1
<i>Caulanthus lemmonii</i>	Lemmon's jewelflower	None	None	1B.2
<i>Lepidium jaredii</i> ssp. <i>jaredii</i>	Jared's pepper-grass	None	None	1B.2
<i>Physaria ludoviciana</i>	silver bladderpod	None	None	2B.2
<i>Streptanthus cordatus</i> var. <i>piutensis</i>	Piute Mountains jewelflower	None	None	1B.2
<i>Tropidocarpum californicum</i>	Kings gold	None	None	1B.1
<i>Opuntia basilaris</i> var. <i>treleasei</i>	Bakersfield cactus	Endangered	Endangered	1B.1
<i>Sclerocactus polyancistrus</i>	Mojave fish-hook cactus	None	None	4.2
<i>Githopsis tenella</i>	delicate bluecup	None	None	1B.3
<i>Nemacladus calcaratus</i>	Chimney Creek nemacladus	None	None	1B.2
<i>Nemacladus gracilis</i>	graceful nemacladus	None	None	4.3
<i>Nemacladus secundiflorus</i> var. <i>secundiflorus</i>	large-flowered nemacladus	None	None	4.3
<i>Nemacladus twisselmannii</i>	Twisselmann's nemacladus	None	Rare	1B.2
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i>	sagebrush loeflingia	None	None	2B.2
<i>Atriplex cordulata</i> var. <i>cordulata</i>	heartscale	None	None	1B.2
<i>Atriplex cordulata</i> var. <i>erecticaulis</i>	Earlimart orache	None	None	1B.2
<i>Atriplex coronata</i> var. <i>coronata</i>	crownscale	None	None	4.2
<i>Atriplex coronata</i> var. <i>vallicola</i>	Lost Hills crownscale	None	None	1B.2
<i>Atriplex minuscula</i>	lesser saltscale	None	None	1B.1
<i>Atriplex subtilis</i>	subtle orache	None	None	1B.2
<i>Atriplex tularensis</i>	Bakersfield smallscale	None	Endangered	1A
<i>Calystegia malacophylla</i> var. <i>berryi</i>	Berry's morning-glory	None	None	3.3
<i>Calystegia peirsonii</i>	Peirson's morning-glory	None	None	4.2
<i>Convolvulus simulans</i>	small-flowered morning-glory	None	None	4.2
<i>Dudleya abramsii</i> ssp. <i>calcicola</i>	limestone dudleya	None	None	4.3
<i>Hesperocyparis nevadensis</i>	Piute cypress	None	None	1B.2
<i>Fimbristylis thermalis</i>	hot springs fimbristylis	None	None	2B.2
<i>Arctostaphylos glandulosa</i> ssp. <i>gabrielensis</i>	San Gabriel manzanita	None	None	1B.2
<i>Euphorbia vallis-mortae</i>	Death Valley sandmat	None	None	4.2

Scientific Name	Common Name	Status		
		Federal	State	CNPS
<i>Astragalus ertterae</i>	Walker Pass milk-vetch	None	None	1B.3
<i>Astragalus hornii</i> var. <i>hornii</i>	Horn's milk-vetch	None	None	1B.1
<i>Astragalus macrodon</i>	Salinas milk-vetch	None	None	4.3
<i>Astragalus preussii</i> var. <i>laxiflorus</i>	Lancaster milk-vetch	None	None	1B.1
<i>Astragalus subvestitus</i>	Kern County milk-vetch	None	None	4.3
<i>Lupinus elatus</i>	silky lupine	None	None	4.3
<i>Lupinus peirsonii</i>	Peirson's lupine	None	None	1B.3
<i>Senna covesii</i>	Cove's cassia	None	None	2B.2
<i>Thermopsis californica</i> var. <i>argentata</i>	silvery false lupine	None	None	4.3
<i>Trifolium dedeckerae</i>	Dedecker's clover	None	None	1B.3
<i>Frasera neglecta</i>	pine green-gentian	None	None	4.3
<i>Ribes menziesii</i> var. <i>ixoderme</i>	aromatic canyon gooseberry	None	None	1B.2
<i>Nemophila parviflora</i> var. <i>quercifolia</i>	oak-leaved nemophila	None	None	4.3
<i>Phacelia exilis</i>	Transverse Range phacelia	None	None	4.3
<i>Phacelia nashiana</i>	Charlotte's phacelia	None	None	1B.2
<i>Phacelia novemmillensis</i>	Nine Mile Canyon phacelia	None	None	1B.2
<i>Juglans californica</i>	southern California black walnut	None	None	4.2
<i>Monardella beneolens</i>	sweet-smelling monardella	None	None	1B.3
<i>Monardella linoides</i> ssp. <i>oblonga</i>	Tehachapi monardella	None	None	1B.3
<i>Trichostema ovatum</i>	San Joaquin bluecurls	None	None	4.2
<i>Calochortus palmeri</i> var. <i>palmeri</i>	Palmer's mariposa-lily	None	None	1B.2
<i>Calochortus striatus</i>	alkali mariposa-lily	None	None	1B.2
<i>Calochortus westonii</i>	Shirley Meadows star-tulip	None	None	1B.2
<i>Fritillaria agrestis</i>	stinkbells	None	None	4.2
<i>Fritillaria brandegeei</i>	Greenhorn fritillary	None	None	1B.3
<i>Fritillaria pinetorum</i>	pine fritillary	None	None	4.3
<i>Fritillaria striata</i>	striped adobe-lily	None	Threatened	1B.1
<i>Mentzelia eremophila</i>	solitary blazing star	None	None	4.2
<i>Mentzelia tridentata</i>	creamy blazing star	None	None	1B.3
<i>Eremalche parryi</i> ssp. <i>kernensis</i>	Kern mallow	Endangered	None	1B.2
<i>Malacothamnus davidsonii</i>	Davidson's bush-mallow	None	None	1B.2
<i>Sidalcea hickmanii</i> ssp. <i>parishii</i>	Parish's checkerbloom	None	Rare	1B.2
<i>Sidalcea neomexicana</i>	salt spring checkerbloom	None	None	2B.2
<i>Claytonia lanceolata</i> var. <i>peirsonii</i>	Peirson's spring beauty	None	None	3.1
<i>Claytonia parviflora</i> ssp. <i>grandiflora</i>	streambank spring beauty	None	None	4.2
<i>Lewisia disepala</i>	Yosemite lewisia	None	None	1B.2
<i>Camissonia integrifolia</i>	Kern River evening-primrose	None	None	1B.3
<i>Camissonia kernensis</i> ssp. <i>kernensis</i>	Kern County evening-primrose	None	None	4.3
<i>Clarkia exilis</i>	slender clarkia	None	None	4.3
<i>Clarkia tembloriensis</i> ssp. <i>calientensis</i>	Vasek's clarkia	None	None	1B.1
<i>Clarkia xantiana</i> ssp. <i>parviflora</i>	Kern Canyon clarkia	None	None	4.2
<i>Castilleja plagiotoma</i>	Mojave paintbrush	None	None	4.3
<i>Chloropyron molle</i> ssp. <i>hispidum</i>	hispid salty bird's-beak	None	None	1B.1
<i>Cordylanthus eremicus</i> ssp. <i>eremicus</i>	desert bird's-beak	None	None	4.3



Scientific Name	Common Name	Status		
		Federal	State	CNPS
<i>Cordylanthus eremicus ssp. kernensis</i>	Kern Plateau bird's-beak	None	None	1B.3
<i>Cordylanthus rigidus ssp. brevibracteatus</i>	short-bracted bird's-beak	None	None	4.3
<i>Canbya candida</i>	white pygmy-poppy	None	None	4.2
<i>Eschscholzia hypocoides</i>	San Benito poppy	None	None	4.3
<i>Eschscholzia lemmonii ssp. kernensis</i>	Tejon poppy	None	None	1B.1
<i>Eschscholzia minutiflora ssp. twisselmannii</i>	Red Rock poppy	None	None	1B.2
<i>Eschscholzia procera</i>	Kernville poppy	None	None	3
<i>Eschscholzia rhombipetala</i>	diamond-petaled California poppy	None	None	1B.1
<i>Diplacus pictus</i>	calico monkeyflower	None	None	1B.2
<i>Erythranthe inconspicua</i>	small-flowered monkeyflower	None	None	4.3
<i>Erythranthe rhodopetra</i>	Red Rock Canyon monkeyflower	None	None	1B.1
<i>Erythranthe shevockii</i>	Kelso Creek monkeyflower	None	None	1B.2
<i>Erythranthe sierrae</i>	Sierra Nevada monkeyflower	None	None	4.2
<i>Antirrhinum ovatum</i>	oval-leaved snapdragon	None	None	4.2
<i>Hordeum intercedens</i>	vernal barley	None	None	3.2
<i>Imperata brevifolia</i>	California satintail	None	None	2B.1
<i>Puccinellia simplex</i>	California alkali grass	None	None	1B.2
<i>Eriastrum hooveri</i>	Hoover's eriastrum	Delisted	None	4.2
<i>Eriastrum rosamondense</i>	Rosamond eriastrum	None	None	1B.1
<i>Eriastrum sparsiflorum</i>	few-flowered eriastrum	None	None	4.3
<i>Eriastrum tracyi</i>	Tracy's eriastrum	None	Rare	3.2
<i>Gilia interior</i>	inland gilia	None	None	4.3
<i>Gilia latiflora ssp. cuyamensis</i>	Cuyama gilia	None	None	4.3
<i>Gilia leptantha ssp. pinetorum</i>	pine gilia	None	None	4.3
<i>Leptosiphon acicularis</i>	bristly leptosiphon	None	None	4.2
<i>Leptosiphon serrulatus</i>	Madera leptosiphon	None	None	1B.2
<i>Navarretia peninsularis</i>	Baja navarretia	None	None	1B.2
<i>Navarretia setiloba</i>	Piute Mountains navarretia	None	None	1B.1
<i>Saltugilia latimeri</i>	Latimer's woodland-gilia	None	None	1B.2
<i>Chorizanthe leptotheca</i>	Peninsular spineflower	None	None	4.2
<i>Chorizanthe palmeri</i>	Palmer's spineflower	None	None	4.2
<i>Chorizanthe spinosa</i>	Mojave spineflower	None	None	4.2
<i>Eriogonum breedlovei var. breedlovei</i>	Breedlove's buckwheat	None	None	1B.2
<i>Eriogonum breedlovei var. shevockii</i>	The Needles buckwheat	None	None	4.3
<i>Eriogonum callistum</i>	Tehachapi buckwheat	None	None	1B.1
<i>Eriogonum crocatum</i>	conejo buckwheat	None	Rare	1B.2
<i>Eriogonum gossypinum</i>	cottony buckwheat	None	None	4.2
<i>Eriogonum kennedyi var. alpigenum</i>	southern alpine buckwheat	None	None	1B.3
<i>Eriogonum kennedyi var. pinicola</i>	Kern buckwheat	None	None	1B.1
<i>Eriogonum nudum var. indictum</i>	protruding buckwheat	None	None	4.2
<i>Eriogonum temblorense</i>	Temblor buckwheat	None	None	1B.2
<i>Goodmania luteola</i>	golden goodmania	None	None	4.2
<i>Androsace elongata ssp. acuta</i>	California androsace	None	None	4.2

Scientific Name	Common Name	Status		
		Federal	State	CNPS
<i>Delphinium gypsophilum</i> ssp. <i>parviflorum</i>	small-flowered gypsum-loving larkspur	None	None	3.2
<i>Delphinium inopinum</i>	unexpected larkspur	None	None	4.3
<i>Delphinium parryi</i> ssp. <i>purpureum</i>	Mt. Pinos larkspur	None	None	4.3
<i>Delphinium purpusii</i>	rose-flowered larkspur	None	None	1B.3
<i>Delphinium recurvatum</i>	recurved larkspur	None	None	1B.2
<i>Ceanothus pinetorum</i>	Kern ceanothus	None	None	4.3
<i>Galium angustifolium</i> ssp. <i>onycense</i>	Onyx Peak bedstraw	None	None	1B.3
<i>Heuchera caespitosa</i>	urn-flowered alumroot	None	None	4.3
<i>Selaginella asprella</i>	bluish spike-moss	None	None	4.3
<i>Muilla coronata</i>	crowned muilla	None	None	4.2
<i>Triteleia piutensis</i>	Piute Mountains triteleia	None	None	1B.1
<i>Viola pinetorum</i> ssp. <i>grisea</i>	grey-leaved violet	None	None	1B.3

Source: California Department of Fish and Wildlife, 2017

Notes: CNDDDB: California Natural Diversity Database

California Native Plant Society

1B = rare, threatened, or endangered in California and elsewhere.

2 = rare, threatened, or endangered in California, but more common elsewhere. 3 = a review list – plants about which more information is needed.

4 = plants of limited distribution – a watch list

.1 = seriously endangered in California (over 80% of occurrences threatened-high degree and immediacy of threat).

.2 = fairly endangered in California (20-80% occurrences threatened).

.3 = not very endangered in California (<20% of occurrences threatened).

**Table 4.2-2  
Special Status Wildlife and Fish Species that May Occur in the RTP Area**

Scientific Name	Common Name	Federal	Status	
			State	CFDW
<b>Amphibians</b>				
<i>Ambystoma californiense</i>	California tiger salamander	Threatened	Threatened	WL
<i>Anaxyrus californicus</i>	arroyo toad	Endangered	None	SSC
<i>Batrachoseps relictus</i>	relictual slender salamander	None	None	SSC
<i>Batrachoseps simatus</i>	Kern Canyon slender salamander	None	Threatened	-
<i>Batrachoseps stebbinsi</i>	Tehachapi slender salamander	None	Threatened	-
<i>Ensatina eschscholtzii</i> <i>croceator</i>	yellow-blotched salamander	None	None	WL
<i>Lithobates pipiens</i>	northern leopard frog	None	None	SSC
<i>Rana boylei</i>	foothill yellow-legged frog	None	Candidate Threatened	SSC
<i>Rana draytonii</i>	California red-legged frog	Threatened	None	SSC
<i>Rana muscosa</i>	southern mountain yellow-legged frog	Endangered	Endangered	WL
<i>Taricha torosa</i>	Coast Range newt	None	None	SSC

Scientific Name	Common Name	Federal	Status	
			State	CFDW
<b>Birds</b>				
<i>Spea hammondi</i>	western spadefoot	None	None	SSC
<i>Accipiter cooperii</i>	Cooper's hawk	None	None	WL
<i>Accipiter gentilis</i>	northern goshawk	None	None	SSC
<i>Accipiter striatus</i>	sharp-shinned hawk	None	None	WL
<i>Aquila chrysaetos</i>	golden eagle	None	None	FP ; WL
<i>Buteo regalis</i>	ferruginous hawk	None	None	WL
<i>Buteo swainsoni</i>	Swainson's hawk	None	Threatened	-
<i>Circus cyaneus</i>	northern harrier	None	None	SSC
<i>Elanus leucurus</i>	white-tailed kite	None	None	FP
<i>Haliaeetus leucocephalus</i>	bald eagle	Delisted	Endangered	FP
<i>Pandion haliaetus</i>	osprey	None	None	WL
<i>Eremophila alpestris actia</i>	California horned lark	None	None	WL
<i>Aythya americana</i>	redhead	None	None	SSC
<i>Dendrocygna bicolor</i>	fulvous whistling-duck	None	None	SSC
<i>Cypseloides niger</i>	black swift	None	None	SSC
<i>Ixobrychus exilis</i>	least bittern	None	None	SSC
<i>Piranga rubra</i>	summer tanager	None	None	SSC
<i>Gymnogyps californianus</i>	California condor	Endangered	Endangered	FP
<i>Charadrius alexandrinus nivosus</i>	western snowy plover	Threatened	None	SSC
<i>Charadrius montanus</i>	mountain plover	None	None	SSC
<i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo	Threatened	Endangered	-
<i>Aimophila ruficeps canescens</i>	southern California rufous-crowned sparrow	None	None	WL
<i>Artemisiospiza belli belli</i>	Bell's sage sparrow	None	None	WL
<i>Poocetes gramineus affinis</i>	Oregon vesper sparrow	None	None	SSC
<i>Falco columbarius</i>	merlin	None	None	WL
<i>Falco mexicanus</i>	prairie falcon	None	None	WL
<i>Falco peregrinus anatum</i>	American peregrine falcon	Delisted	Delisted	FP
<i>Progne subis</i>	purple martin	None	None	SSC
<i>Agelaius phoeniceus aciculatus</i>	Kern red-winged blackbird	None	None	SSC
<i>Agelaius tricolor</i>	tricolored blackbird	None	Candidate Endangered	SSC
<i>Xanthocephalus xanthocephalus</i>	yellow-headed blackbird	None	None	SSC
<i>Lanius ludovicianus</i>	loggerhead shrike	None	None	SSC
<i>Chlidonias niger</i>	black tern	None	None	SSC
<i>Toxostoma bendirei</i>	Bendire's thrasher	None	None	SSC
<i>Toxostoma crissale</i>	Crissal thrasher	None	None	SSC
<i>Toxostoma lecontei</i>	Le Conte's thrasher	None	None	SSC

Scientific Name	Common Name	Federal	Status		CFDW
			State		
<i>Icteria virens</i>	yellow-breasted chat	None	None		SSC
<i>Oreothlypis virginiae</i>	Virginia's warbler	None	None		WL
<i>Setophaga petechia</i>	yellow warbler	None	None		SSC
<i>Pelecanus erythrorhynchos</i>	American white pelican	None	None		SSC
<i>Phalacrocorax auritus</i>	double-crested cormorant	None	None		WL
<i>Dendragapus fuliginosus howardi</i>	Mount Pinos sooty grouse	None	None		SSC
<i>Numenius americanus</i>	long-billed curlew	None	None		WL
<i>Asio flammeus</i>	short-eared owl	None	None		SSC
<i>Asio otus</i>	long-eared owl	None	None		SSC
<i>Athene cunicularia</i>	burrowing owl	None	None		SSC
<i>Strix occidentalis caurina</i>	northern spotted owl	Threatened	Threatened		SSC
<i>Strix occidentalis occidentalis</i>	California spotted owl	None	None		SSC
<i>Polioptila melanura</i>	black-tailed gnatcatcher	None	None		WL
<i>Plegadis chihi</i>	white-faced ibis	None	None		WL
<i>Empidonax traillii</i>	willow flycatcher	None	Endangered		-
<i>Empidonax traillii extimus</i>	southwestern willow flycatcher	Endangered	Endangered		-
<i>Myiarchus tyrannulus</i>	brown-crested flycatcher	None	None		WL
<i>Vireo bellii pusillus</i>	least Bell's vireo	Endangered	Endangered		-
<i>Vireo huttoni unitti</i>	Catalina Hutton's vireo	None	None		SSC
<i>Vireo vicinior</i>	gray vireo	None	None		SSC
<b>Fish</b>					
<i>Siphateles bicolor mohavensis</i>	Mohave tui chub	Endangered	Endangered		FP
<i>Entosphenus hubbsi</i>	Kern brook lamprey	None	None		SSC
<b>Insects</b>					
<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	Threatened	None		-
<i>Euproserpinus euterpe</i>	Kern primrose sphinx moth	Threatened	None		-
<b>Mammals</b>					
<i>Aplodontia rufa californica</i>	Sierra Nevada mountain beaver	None	None		SSC
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	Endangered	Threatened		-
<i>Dipodomys ingens</i>	giant kangaroo rat	Endangered	Endangered		-
<i>Dipodomys nitratooides brevinasus</i>	short-nosed kangaroo rat	None	None		SSC
<i>Dipodomys nitratooides nitratooides</i>	Tipton kangaroo rat	Endangered	Endangered		-
<i>Perognathus alticolus inexpectatus</i>	Tehachapi pocket mouse	None	None		SSC
<i>Lepus townsendii townsendii</i>	western white-tailed jackrabbit	None	None		SSC

Scientific Name	Common Name	Federal	Status	
			State	CFDW
<i>Eumops perotis californicus</i>	western mastiff bat	None	None	SSC
<i>Onychomys torridus ramona</i>	southern grasshopper mouse	None	None	SSC
<i>Onychomys torridus tularensis</i>	Tulare grasshopper mouse	None	None	SSC
<i>Gulo gulo</i>	California wolverine	Proposed Threatened	Threatened	FP
<i>Pekania pennanti</i>	fisher - West Coast DPS	None	Candidate Threatened	SSC
<i>Taxidea taxus</i>	American badger	None	None	SSC
<i>Macrotus californicus</i>	California leaf-nosed bat	None	None	SSC
<i>Ammospermophilus nelsoni</i>	Nelson's antelope squirrel	None	Threatened	-
<i>Xerospermophilus mohavensis</i>	Mohave ground squirrel	None	Threatened	-
<i>Sorex ornatus relictus</i>	Buena Vista Lake ornate shrew	Endangered	None	SSC
<i>Antrozous pallidus</i>	pallid bat	None	None	SSC
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	SSC
<i>Euderma maculatum</i>	spotted bat	None	None	SSC
<i>Lasiurus blossevillii</i>	western red bat	None	None	SSC
<b>Reptiles</b>				
<i>Anniella alexanderae</i>	Temblor legless lizard	None	None	SSC
<i>Anniella campi</i>	southern Sierra legless lizard	None	None	SSC
<i>Anniella grinnelli</i>	Bakersfield legless lizard	None	None	SSC
<i>Anniella pulchra</i>	northern California legless lizard	None	None	SSC
<i>Anniella sp. 1</i>	California legless lizard	None	None	SSC
<i>Anniella stebbinsi</i>	southern California legless lizard	None	None	SSC
<i>Charina umbratica</i>	southern rubber boa	None	Threatened	-
<i>Arizona elegans occidentalis</i>	California glossy snake	None	None	SSC
<i>Masticophis flagellum ruddocki</i>	San Joaquin coachwhip	None	None	SSC
<i>Gambelia sila</i>	blunt-nosed leopard lizard	Endangered	Endangered	FP
<i>Emys marmorata</i>	western pond turtle	None	None	SSC
<i>Thamnophis gigas</i>	giant gartersnake	Threatened	Threatened	-
<i>Thamnophis hammondi</i>	two-striped gartersnake	None	None	SSC
<i>Phrynosoma blainvillii</i>	coast horned lizard	None	None	SSC
<i>Gopherus agassizii</i>	desert tortoise	Threatened	Threatened	-
<i>Xantusia sierrae</i>	Sierra night lizard	None	None	SSC

Source: California Department of Fish and Wildlife, CNDDDB 2017.

Notes:

Status Abbreviations:

SSC= species of special concern in California

FP= Fully Protected

WL = Watch List

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## 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, which 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 review of water quality and wetland issues, including 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 that are or may be used in interstate or foreign commerce (including sightseeing or hunting), including all waters subject to the ebb and flow of the tide; (2) wetlands; (3) all waters such as interstate lakes, rivers, 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 (see 33 C.F.R. 328.3).<sup>2</sup>

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 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.

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<sup>2</sup> 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, the effective date of the WOTUS Rule has been delayed to February 6, 2020 to allow the agencies to re-evaluate the definition. 83 Fed. Reg. 25 (February 6, 2018). Thus, the current regulations as discussed above remain in place.



### ***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) oversees NEPA, and the US Environmental Protection Agency (USEPA) carries out administrative aspects of the NEPA process. NEPA mandates that the federal government shall give appropriate consideration to potential adverse environmental impacts of their major 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's 2002 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).

### ***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.

### ***Metropolitan Bakersfield Habitat Conservation Plan***

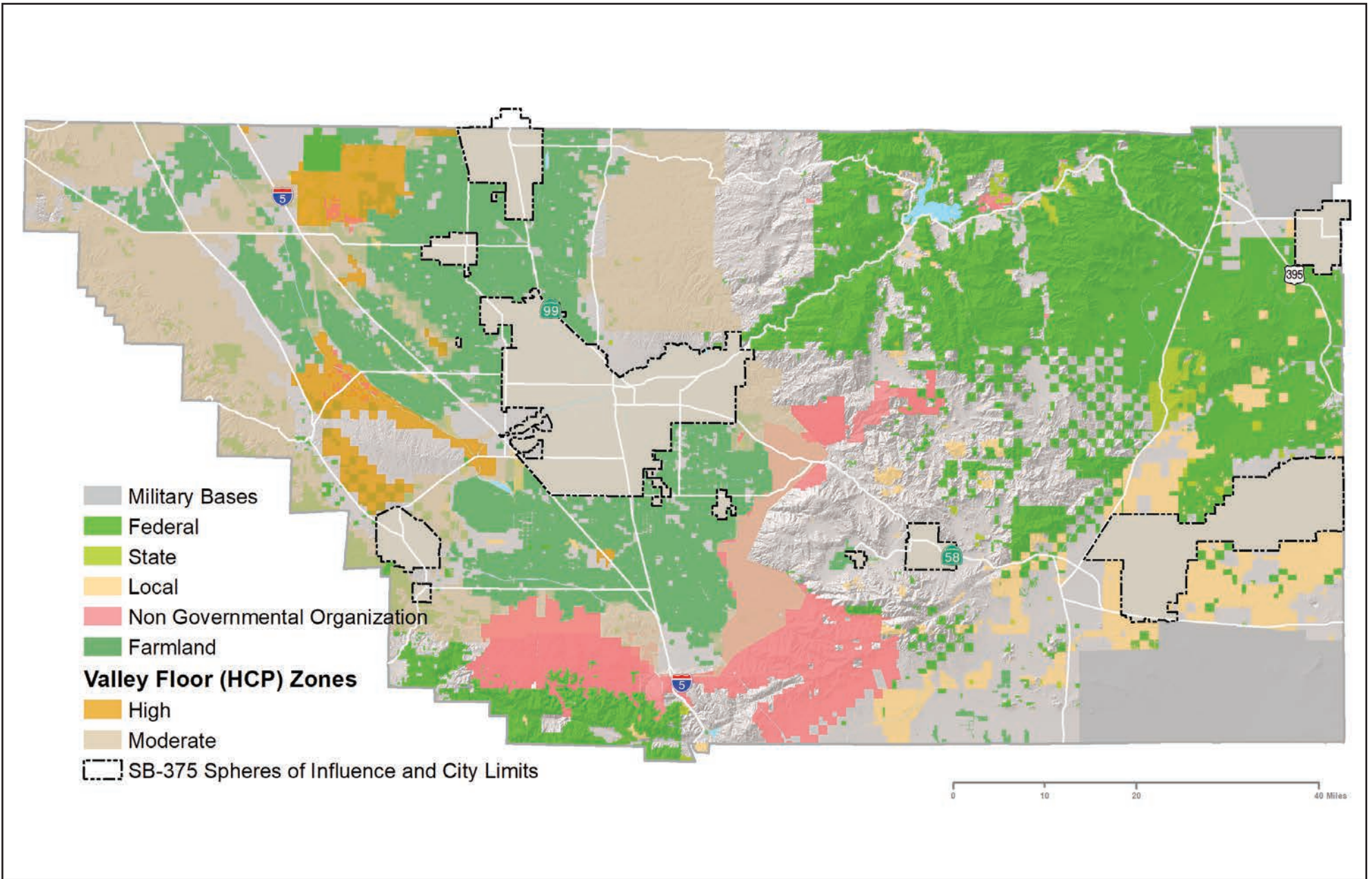
The Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) is a plan that addresses the effect of urban growth on federal and state protected plant and animal species within the 409 square mile area covered by the Metropolitan Bakersfield General Plan. The MBHCP is a joint program of the City of 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).<sup>3</sup> 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.

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<sup>3</sup> Kern County Valley Floor Habitat Conservation Plan, December 2006  
[https://www.kerncounty.com/planning/pdfs/vfhcp\\_dec06.pdf](https://www.kerncounty.com/planning/pdfs/vfhcp_dec06.pdf)



SOURCE: Kern County, FMMP, CA Protected Areas Database, Kern LAFCO, Bureau of Transportation Statistics National Transportation Atlas Database, 2018

FIGURE 4.4-2

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.

#### ***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 Olancho 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.



### 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 2018 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 2018 RTP on biological resources in Kern County. The 2018 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.

Since this document analyzes impacts to biological resources on a program level only, project-level analysis of impacts must be undertaken as appropriate.

#### 4.4.3.3 Impacts and Mitigation Measures

**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.

#### *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 CNDDDB. The CNDDDB 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 108 special-status wildlife species that have the potential to occur in the project area. Of these 108 species, 14 are classified as Endangered. These Endangered species include, the California Condor, the Giant Kangaroo Rat, and the San Joaquin Kit Fox. Of the 108 species, there are 11 amphibians, 56 birds, 2 fish, 2 insects, 16 are reptiles, and 21 are mammals.

**Plants.** There are 180 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 CNDDDB 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 2018 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 2018 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 2018 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 2018 RTP are considered potentially significant for **Impact BIO-1**. Mitigation is required. **Mitigation Measures BIO-1** through **BIO-4** are described below.

### ***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 are considered potentially significant for **Impact BIO-1**. Mitigation is required. **Mitigation Measures MM BIO-1** through **MM BIO-4** are described below.

### ***Level of Significance Before Mitigation***

Potentially significant at the regional and TPA levels.

### ***Mitigation Measures***

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 2018 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.

**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 a potential to occur in the specific project area. Sources of information consulted should include CDFW's CNDDDB, 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 CNDDDB, 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 CDFW or USFWS.**

### *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<sup>4</sup>. 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

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<sup>4</sup> US Fish and Wildlife Service, “Wetlands Mapper,” <https://www.fws.gov/wetlands/data/mapper.html>, accessed April 24, 2018.

would require that there be an equal amount of wetland created elsewhere to mitigate any loss of wetland.

Construction activities associated with 2018 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** are described below.

### ***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 at

the regional level are considered potentially significant for **Impact BIO-2**. Mitigation is required. **Mitigation Measures MM BIO-6** through **MM BIO-8** are described below.

### *Level of Significance Before Mitigation*

Potentially significant at 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-bearing 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 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.**

### *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 are considered potentially significant for **Impact BIO-3**. Mitigation is required. **Mitigation Measures MM BIO-9** through **MM BIO-11** are described below.

### *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<sup>l</sup>. 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, streams, 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.

Protected migratory species, including, but not limited to, salmon, the Kern Brook lamprey, and Mohave tui chub could be impacted through implementation of development and transportation projects occurring under the 2018 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** is described below.

### ***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 are considered potentially significant for **Impact BIO-4**. Mitigation is required. **Mitigation Measure MM BIO-12** is described below.

### ***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.
- Prohibit construction activities with 250 feet of occupied nest of birds afforded protection pursuant to the Migratory Bird Treaty Act, during the breeding season.
- Ensure that suitable nesting sites for migratory nongame native bird species protected under the Migratory Bird Treaty Act and/or trees with unoccupied raptor nests should only be removed prior to February 1, or following the nesting season.
- Pursue mitigation banking to preserve habitat linkages and corridors (opportunities to purchase, maintain, and/or restore offsite habitat).
- 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-11** 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 (HCP), natural communities conservation plan (NCCP), 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 2018 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, and the West Mojave Conservation Habitat Plan. Individual 2018 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 2018 RTP (see Chapter 5 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 2018 RTP, rather each individual jurisdiction would be responsible for approving land use and zoning changes.

2018 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.

To the extent possible, 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 2018 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 considered 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 being 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 Measure BIO-13** is described below.

### *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*

With implementation of **Mitigation Measures BIO-1** through **BIO-13**, impacts would be less than significant at the regional and TPA levels.

#### **4.4.4 CUMULATIVE IMPACTS**

Under the 2018 RTP impacts to sensitive species as well as habitat fragmentation and 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 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 2018 RTP would contribute to cumulative biological resources impacts statewide. (The 2018 RTP would not result in any impacts to biological resources that would be less than significant for the 2018 RTP alone but cumulatively considerable.)

## 4.5 CULTURAL RESOURCES

This section addresses the existing cultural resources within the region and evaluates the significance of the changes in cultural resources that could result from development of the 2018 RTP. In addition, as appropriate and feasible, mitigation measures are identified to reduce potentially significant adverse impacts.

### 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, also are 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
Fort Taft/P559			X	12/19/1980	Taft



Name (Landmark/Plaque Number)	National Register	California Historical Landmark	California Points of Historical Interest	Date Listed	City/Census Designated Place
Fort Tejon/129		X		1/31/1934	Lebec
The Fort/N963	X			7/22/1981	Taft
Freeman Junction/766		X		11/31/1961	Kern
Garces Baptismal Site/631		X		1/29/1958	Woody
Garces 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
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
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

Name (Landmark/Plaque Number)	National Register	California Historical Landmark	California Points of Historical Interest	Date Listed	City/Census Designated Place
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
Top of Grapevine Pass, Where Don Pedro Fages Passed in 1772/283		X		1/8/1938	Lebec
Tulamni 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

Source: California Historical Resources Office of Historic Preservation, 2018

Notes:

- <sup>1</sup> 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.
- <sup>2</sup> 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.
- <sup>3</sup> 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.
- <sup>3</sup> Currently there are no sites or structures listed on the California Register of Historic Resources within Kern County.

### 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 18<sup>th</sup> 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. 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.

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.

### *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.

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 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.

### *Archaeology and Historic Sites*

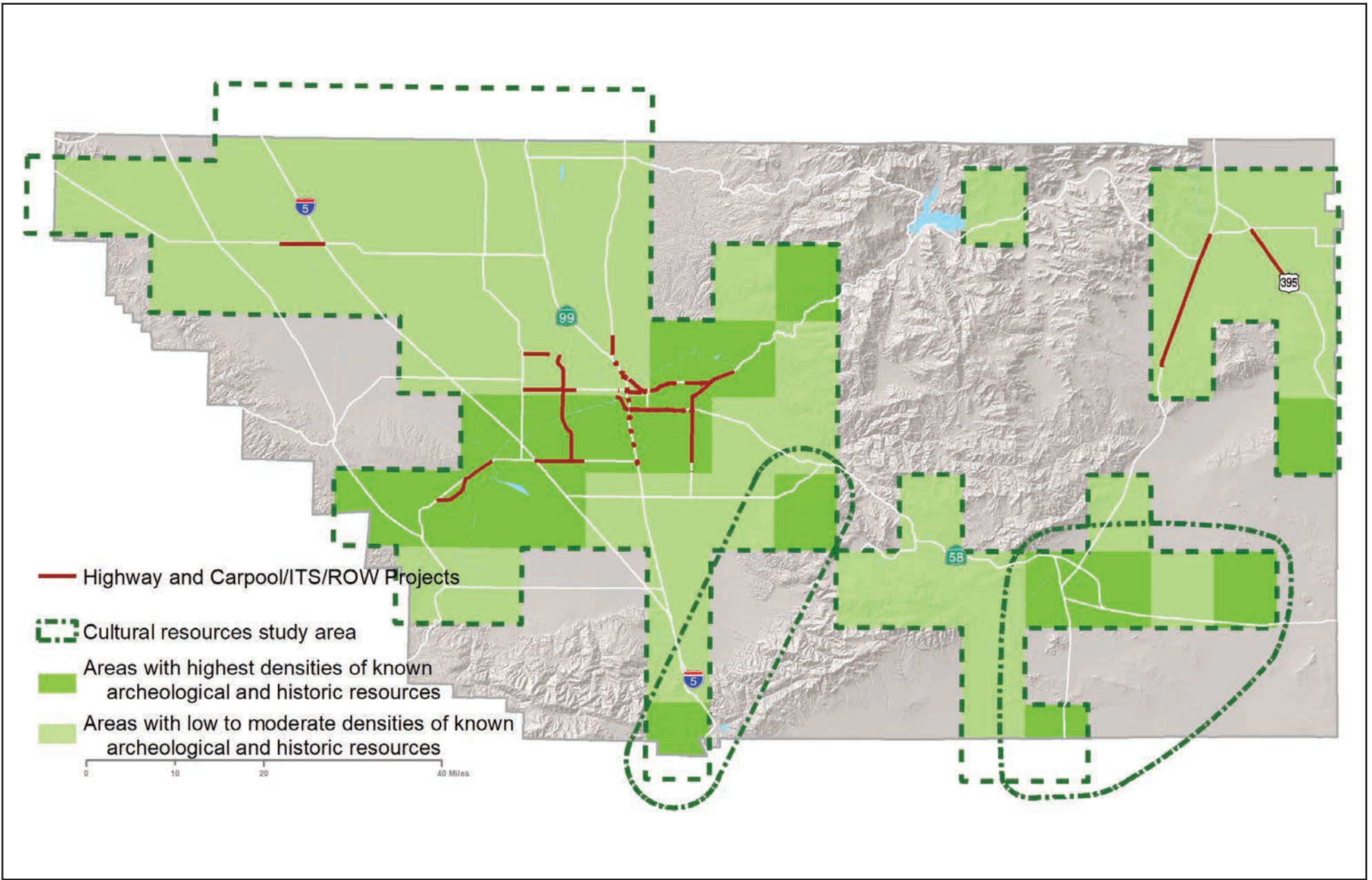
Records of archaeological and historical sites and investigations in Kern County repose at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System (CHRIS) at California State University, Bakersfield. A review of Kern County data on file at the Information 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 by the 2018 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.



SOURCE: Kern COG, 2018

FIGURE 4.5-1

Kern County Cultural Resources

### *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 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. Particularly high-densities of prehistoric resources are found in the Rosamond Hills.

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).

#### **4.5.1.5 Paleontological Resources**

Generally, scientifically significant paleontological resources are identified sites or 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 evolution, paleoclimatology, the relationships between aquatic and terrestrial species, and evolution in general.

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 flashflood 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.<sup>1</sup> 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.<sup>2</sup>

## 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) 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. 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 of findings may be submitted to the State Historic Preservation Office (SHPO) for further consultation. While NEPA

<sup>1</sup> Barstow J. A., *Geologic maps of the Knob Hill, Pine Mountain, Oil Center and Bena quadrangles, California*. USGS Open File Report 86-188. 1986.

<sup>2</sup> 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.



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 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 established 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 the 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.”<sup>3</sup> 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:<sup>4</sup>

- 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 or identified as significant in a historical resource survey meeting the requirements in Section 5024.1(g) of the Public Resources Code, 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

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<sup>3</sup> Public Resources Code Section 21084.1

<sup>4</sup> *State CEQA Guidelines* Section 15064.f (e).

- 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 Public Resources Code), or identified in a historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be a historical resource as defined in Public Resources Code Sections 5020.1(j) or 5024.1.

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.”<sup>5</sup> 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.<sup>6</sup>

### ***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 Public Resources Code 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.”<sup>7</sup> The criteria for eligibility for the California Register are based upon 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;

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<sup>5</sup> *State CEQA Guidelines* Section 15064.5 (b)(1)

<sup>6</sup> *State CEQA Guidelines* Section 15064.5 (b)(2)(A-C)

<sup>7</sup> 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 Public Resources Code 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.

Public Resources Code Section 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 Public Resources Code and Section 7050 of the Health and Safety Code 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.

Public Resources Code 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 Public Records Code (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.

### 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 which 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 which 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 which 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 included for development projects.
- Development on land containing known archaeological resources (i.e., high sensitivity areas) shall utilize methodology set forth, as described 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 placing of landmark plaques throughout the County and has worked with the State Division of Parks and Recreation in the restoration of Fort Tejon.

## **4.5.3 ENVIRONMENTAL IMPACTS**

### **4.5.3.1 Thresholds of Significance**

For the purposes of this EIR, Kern COG has determined that adoption and/or implementation of the proposed 2018 RTP could result in significant adverse impacts to archaeological, historical, and/or paleontological resources, if any of the following could occur:

- Cause a substantial adverse change in the significance of a historical structure as defined in *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.
- Directly or indirectly destroy a unique paleontological resource or site.
- Disturb any human remains, including those interred outside of formal cemeteries.

With regard to Tribal Cultural Resources an impact would occur if the project could:

- Cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape sacred place, or object with cultural value to a California Native American tribe, and that is:
  - 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
  - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

#### 4.5.3.1 Methodology

The analysis assesses the potential impacts to cultural resources that could result from implementation of the proposed 2018 RTP. Impacts are assessed in terms of both land use and transportation impacts. By 2042, implementation of the proposed 2018 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 2042 under the 2018 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 to buildings or through indirect effects to the area surrounding a resource through the creation of one or more visually incompatible structures adjacent to a historic structure.

Impacts to 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.

#### 4.5.3.2 Impact Analysis

**Impact CR-1                      Cause a substantial adverse change in the significance of a historical structure as defined in *State CEQA Guidelines* Section 15064.5.**

#### *Regional Impacts*

The bulk of potential impacts to historic structures would occur during the construction of new land uses and new transportation improvements.

In general, 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 listed in and eligible for the National Register of Historic Places (NRHP) and/or the California Register of Historic Resources (CRHR), as well as recognized as locally significant under local governments. A number of properties containing 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 2018 RTP plan area contains significant historic structures for the purposes of CEQA.

Construction due to land use and transportation changes may result in construction impacts to historical resources. 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 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 2018 RTP (through 2042), land use changes and transportation improvements resulting from implementation of the proposed 2018 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 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 entire removal of the historic structure and/or loss of the character-defining features, this impact would 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 building. 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 historic structures to excessive groundborne vibrations. Operations, land use and transportation changes could result in new vibration sources that could significantly affect historic buildings. **Table 4.5-2, 2018 RTP Freight Rail Projects**, provides the rail type, location, and general description of rail projects located in the RTP.

**Table 4.5-2  
2018 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

*Source: Kern COG RTP 2018.*

Over the lifespan of the proposed 2018 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.

### ***Transit Priority Areas***

The majority of TPAs are located within the Metro Bakersfield area. The 2018 RTP includes transportation investments and land use policies that would focus development in TPAs. Many TPAs are located in older urban centers where structures of architectural or historical significance are likely to be located. This could result in a significant impact to historical resources. Many of the planned transportation projects include the construction of additional lanes and highway arterials; see **Section 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.

Impacts on historical resources related to land use and transportation changes from construction projects and ongoing operations resulting from implementation of the proposed 2018 RTP are considered

potentially significant for **Impact CR-1**. Mitigation is required. **Mitigation Measure MM CR-1** is described below.

### *Level of Significance Before Mitigation*

Potentially significant at the regional and TPA levels.

### *Mitigation Measure*

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 2018 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.

**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 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 for 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 2018 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 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 investigation and recovering resources and data about the resources when the resource is not avoidable.

Impacts from land use and transportation changes as a result of the proposed 2018 RTP could result from ground disturbance associated with grading and excavation in previously undisturbed soils.

Improvements, and modifications to existing rights-of-way, such as HOV lanes, high-occupancy/toll (HOT) lanes, bus-ways and capacity enhancement facilities, mixed flow 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. 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 Public Resources Code (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 2018 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 2018 RTP have the potential to cause significant impacts on archaeological resources.

Implementation of most of the 2018 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 potential to adversely affect archaeological resources, either directly or

indirectly. As 2018 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. Only a small number of 2018 RTP transportation projects would be constructed in previously undisturbed areas.

### ***Transit Priority Areas***

The 2018 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. Nonetheless, development associated with the 2018 RTP would also occur on previously undisturbed sites or in previously undisturbed soils.

Development of detailed, site-specific analysis of archaeological impacts at the programmatic level is not feasible. However, in general damage to or destruction of archaeological resources could occur as a result of 2018 RTP transportation projects or increased development. Thus, impacts on archaeological resources related to land use and transportation changes from implementation of the proposed 2018 RTP is considered potentially significant for **Impact CR-2**. Mitigation is required. See **Mitigation Measure MM CR-2**.

### ***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                      Directly or indirectly destroy a unique paleontological resource or site.*****Regional Impacts***

Excavation related to construction of transportation projects included in the 2018 RTP, as well as anticipated development undertaken consistent with the Plan could cause unearthing of buried paleontological resources or other impacts to paleontological resources. Construction occurring in previously undisturbed areas and deep excavation activities would have the greatest likelihood to affect paleontological resources. Excavation and soil removal of any kind, irrespective of depth, has the potential to impact resources of paleontological significance. The extensive distribution of resources makes it difficult to predict where impacts could occur. Construction and excavation activities relating to the RTP pose a potentially significant impact to paleontological resources.

The 2018 RTP encourages development in urbanized areas. Because urbanized areas have existing transportation and commercial infrastructure, and are highly disturbed, the likelihood of disturbing paleontological resources or a unique geologic feature during construction activities is low in these areas. Nevertheless, excavation and soil removal of any kind, irrespective of depth, has the potential to encounter paleontological resources.

Most of the RTP transportation improvements would be constructed within the existing rights-of-way, which is generally considered to have less potential to encounter previously unknown paleontological resources relative to projects in undisturbed/undeveloped areas. However, improvements and modifications within existing rights-of-way still have the potential to damage or destroy undiscovered paleontological resources especially during deeper excavations. Impacts on paleontological resources from the proposed 2018 RTP are considered potentially significant for **Impact CR-3**. Mitigation is required; see **Mitigation Measures CR-2** and **CR-3**.

***Transit Priority Areas***

Many of the projects proposed in the 2018 RTP would occur in urbanized portions of the County, particularly in TPAs. Because the TPAs have existing transportation and commercial infrastructure, and are highly disturbed, the likelihood of disturbing any paleontological resources or a unique geologic feature during construction activities is low. Nevertheless, excavation and soil removal of any kind, irrespective of depth, has the potential to encounter paleontological resources. Thus, construction impacts on paleontological resources and unique geologic features related to land use and transportation changes from ongoing construction resulting from implementation of the proposed 2018 RTP are considered significant for **Impact CR-3**. Mitigation is required; see **Mitigation Measures CR-2** and **CR-4**.

### *Level of Significance Before Mitigation*

Potentially significant at the regional and TPA levels.

### *Mitigation Measures*

**MM CR-3:** Kern COG, through its Environmental Review Program/Intergovernmental Review process will facilitate and encourage implementing and local agencies to identify, survey, and evaluate paleontological resources to avoid potential impacts.

During environmental review implementing and local agencies should retain a qualified paleontologist to identify, survey, and evaluate paleontological resources where potential impacts are considered high. All construction activities should avoid known paleontological resources, if feasible, especially if the resources in a particular lithologic unit formation have been determined to be unique or likely to contain paleontological resources. If avoidance is not feasible, paleontological resources should be excavated by a qualified paleontologist and given to a local agency, State University, or other applicable institution, where they could be curated and displayed for public education purposes.

### *Level of Significance After Mitigation*

**Mitigation Measures MM CR-2 and MM CR-3** would reduce impacts on paleontological 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-4**                    **Disturb any human remains, including those interred outside of formal cemeteries.**

### *Regional 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.

2018 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 2018 RTP at the regional level are considered potentially significant for **Impact CR-4**. Mitigation is required; see **Mitigation Measures CR-2** and **CR-4**.

### *Transit Priority Areas*

The regional impact section above describes the conditions that may result in a potentially significant impact to human remains. Operational impacts on human remains related to land use and transportation changes from ongoing operations resulting from implementation of the proposed 2014 RTP are considered less than significant for **Impact CR-4**.

Because TPAs have a significant amount of existing transportation and commercial infrastructure, and much of the area has been disturbed, the likelihood of discovering human remains during construction activities is low. Nevertheless, excavation and soil removal of any kind, irrespective of depth, has the potential to encounter human remains. Thus, construction impacts on human remains related to land use and transportation changes from ongoing construction resulting from implementation of the proposed 2014 RTP are considered significant for **Impact CR-4**. Mitigation is required; see **Mitigation Measures CR-2** and **CR-5**.

### *Level of Significance Before Mitigation*

Potentially significant at the regional and TPA levels.

### *Mitigation Measures*

See **MM CR-2**.

**MM CR-4:** 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.

### *Level of Significance After Mitigation*

**Mitigation Measures MM CR-2 and MM CR 4** 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 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 Public Resources Code section 5020.1(k).**

### *Regional and Transit Priority Area Impacts*

In general, the potential to impact tribal cultural resources listed or eligible for listing in the California Register of Historical Resources or in a local register would vary by location and type of project. As mentioned previously, consultation and compliance with AB 52 through the Native American Heritage Commission will provide guidance for eligibility and analysis on a project-specific level. Through the consultation process, California Native American Tribes will have the opportunity to respond and identify potential significant impacts to tribal cultural resources, as defined in PRC Section 21074.

Construction due to land use and transportation changes of the 2018 RTP could result in construction impacts to tribal cultural resources. Ground-disturbing and other activities associated with construction can result in damage, physical demolition, destruction, relocation, or alteration of tribal cultural resources. Such alterations could result in substantial adverse changes to tribal cultural resources. If tribal cultural resources cannot be completely avoided by project designs, impacts would be significant.

When land use or transportation improvements require modification or removal of a tribal cultural structure, significant impacts occur. In many cases, these impacts can be reduced to a less than significant level by avoiding the resource, minimizing alterations, among others. In cases involving entire removal of a tribal cultural resource, this impact is significant and unavoidable. Similar to impacts to archaeological and paleontological resources, impacts to known or unknown tribal cultural resources a survey will need to be conducted to determine significance.

Impacts to tribal cultural resources due to operations can result from increased vibration. 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 culturally significant structures to excessive groundborne vibrations.

Over the lifespan of the proposed 2018 RTP, some land use changes and transportation improvements that are located in proximity to one another could be developed concurrently, which could increase the potential for damage, destruction, or alteration of tribal cultural resources. Impacts to tribal cultural resources related to land use and transportation changes from construction projects and ongoing

operations resulting from implementation of the proposed 2018 RTP are considered potentially significant for **Impact TCR-1**. Mitigation is required. Mitigation Measures at the regional and project level would reduce this impact; see **Mitigation Measures MM-CR-2** and **MM-CR-4** previously described above.

### *Level of Significance Before Mitigation*

Potentially significant at the regional and TPA levels.

### *Mitigation Measure*

See **MM-CR-2** and **MM-CR-4**.

### *Level of Significance After Mitigation*

**Mitigation Measures MM CR-2** and **MM CR 4** 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.

### **Impact TCR-2**

**Cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Cod section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe**

### *Regional and Transit Priority Area Impacts*

The significance of a tribal cultural resource can be determined at the discretion of the lead agency. The 2018 RTP serves as a programmatic document for future proposed project, most of which will need project-specific analysis. The process of determining the significance of a tribal cultural resource is outlined by AB 52 and facilitated through the Native American Heritage Commission. Where the significance of a site is unknown, it is presumed to be significant for the purpose of this PEIR. A finding

of tribal cultural significance follows the criteria established in the *State CEQA Guidelines* and more specifically, PRC Section 5024.1.

Due to the large amount of vacant lands, there are expected to be numerous tribal cultural resources in the region that have not been located, recorded, or evaluated which may have the potential for tribal cultural significance. There are large areas of the County that have not been subjected to survey that may contain tribal cultural resources. Additionally, there are likely a large number of 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.

Tribal cultural 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.

The nature of potential impacts to tribal cultural resources cannot be fully evaluated at a regional level without project details since a specific “Area of Potential Effect” for each improvement project cannot be defined. However, many of the projects included in the 2018 RTP will require an independent review at which time the significance of the impact can be precisely determined. As discussed above, the proposed transportation improvements and the land use plan envisioned by the 2018 RTP may impact known and/or unknown cultural resources. Impacts to tribal cultural resources would be potentially significant.

Development of detailed, site-specific analysis of tribal cultural impacts at the programmatic level is not feasible. However, in general damage to or destruction of tribal cultural resources could occur as a result of 2018 RTP transportation projects or increased development. Thus, impacts on tribal cultural resources related to implementation of the proposed 2018 RTP is considered potentially significant for **Impact TCR-2**. Mitigation is required but only identified at the project level. See **Mitigation Measure MM-CR-2 and MM-CR-4**.

### *Level of Significance Before Mitigation*

Potentially significant at the regional and TPA levels.

### *Mitigation Measure*

See MM-CR-2 and MM CR-4.

### *Level of Significance After Mitigation*

**Mitigation Measures MM CR-2 and MM CR 4** 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 2018 RTP includes transportation projects and land use strategies that will shape the region over the next 24 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 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 2018 RTP impacts would add to cultural resource impacts of cumulative projects (transportation projects and development in accordance with RTP plans of adjacent jurisdictions). As discussed above, implementation of the 2018 RTP would result in significant impacts to historical resources, archaeological resources, paleontological 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 land is disturbed.

## 4.6 GREENHOUSE GASES

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This section discusses the existing conditions related to greenhouse gases (GHG) and global climate change and evaluates the potential impacts from implementation of the 2018 Regional Transportation Plan (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.

### 4.6.1 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).<sup>1</sup> 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 global climate. The primary manifestation of global climate change has been a rise in the average global tropospheric temperature of 0.2 degree Celsius (°C) per decade, determined from meteorological measurements worldwide between 1990 and 2005.

The natural process through which heat is retained in the troposphere<sup>2</sup> 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 re-emit it back towards the Earth and into space. This third process is the focus of current climate

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<sup>1</sup> US Environmental Protection Agency, "Glossary of Climate Change Terms," [http://www.epa.gov/climatechange/glossary.html#Climate\\_change](http://www.epa.gov/climatechange/glossary.html#Climate_change). 2010.

<sup>2</sup> The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface from 6 to 7 miles.

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<sub>2</sub>) 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<sub>2</sub> as the reference gas, which has a GWP of 1 over 100 years.<sup>3</sup> For example, a gas with a GWP of 10 is 10 times more potent than CO<sub>2</sub> over 100 years. The use of GWP allows GHG emissions to be reported using CO<sub>2</sub> as a baseline. The sum of each GHG multiplied by its associated GWP is referred to as "carbon dioxide equivalents" (CO<sub>2</sub>e). 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<sub>2</sub>.

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:<sup>4,5</sup>

- 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 wildfire and heat waves.
- A reduction in spring runoff volumes, as a result of declining snowpack.
- A decrease in winter chill hours, 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 recent 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.<sup>6</sup> An analysis of water usage between 1990 and 2012 showed that while California's energy policies have supported climate mitigation efforts, the performance of these policies have increased vulnerability to climate impacts.<sup>7</sup>

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<sup>3</sup> 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

<sup>4</sup> OEHHA, *Indicators of Climate Change in California*. <https://oehha.ca.gov/climate-change/document/indicators-climate-change-california>

<sup>5</sup> California Air Resources Board, *California's 2017 Climate Change Scoping Plan*. November 2017.

<sup>6</sup> Howitt, R., Medellin-Azuara, J., MacEwan, D., Lund, J., and Summer, D. *Economic Analysis of 2014 Drought for California Agriculture*. 2014.

<sup>7</sup> Fulton, J., and Cooley, H., *The Water Footprint of California's Energy System, 1990-2012*. 2015.

According to the U.S. Forest Service National Insect and Disease Forest Risk Assessment,<sup>8</sup> 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 current 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 mountain pine beetle. A recent aerial survey by the U.S. Forest Service identified more than 100 million dead trees in California.<sup>9</sup>

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.<sup>10</sup>

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.<sup>11</sup> 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 temperature, leading to more frequent flooding.<sup>12,13</sup>

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

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<sup>8</sup> U.S. Forest Service, *2013-2027 National Insect and Disease Forest Risk Assessment*. January 2014.

<sup>9</sup> U.S. Department of Agriculture, *New Aerial Survey Identifies More Than 100 Million Dead Trees in California*. November 2016.

<sup>10</sup> California Air Resources Board, *California's 2017 Climate Change Scoping Plan*. November 2017.

<sup>11</sup> American Meteorological Society, *Atmospheric Rivers as Drought Busters on the U.S. West Coast*, April 2013.

<sup>12</sup> Hagos, S., Leung, L.R., Yoon, J.H., 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.

<sup>13</sup> Payne, Ashley and Magnúsdóttir, Guðrún, *An Evaluation of Atmospheric Rivers over the North Pacific in CMIP5 and their response to warming under RCP 8.5*. November 2015.

ocean regions.<sup>14,15</sup> 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.<sup>16,17</sup> 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.<sup>18</sup>

California is committed to further supporting new research on ways to mitigate climate change and how to understand its ongoing and projected impacts. California's Fourth Climate Change Assessment and Indicators of Change Report will further update our understanding of the many impacts from climate change in a way that directly informs State agencies' efforts to safeguard the State's people, economy, and environment.<sup>19,20</sup>

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

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<sup>14</sup> Easterling, D.R., Kunkel, K.E., Wehner, M.F., and Sun, L., *Detection and Attribution of Climate Extremes in the Observed Record*. March 2016.

<sup>15</sup> National Academies of Sciences, Engineering, and Medicine, *Attribution of Extreme Weather Events in the Context of Climate Change*. 2016.

<sup>16</sup> Sobel, A.H., Camargo, S.J., Hall, T.M., Lee, C-Y., Tippet, M.K., and Wing, A.A., *Human Influence on Tropical Cyclone Intensity*. 2016.

<sup>17</sup> Kossin, James P., NOAA/National Centers for Environmental Information, *Past and Projected Changes in Western North Pacific Tropical Cyclone Exposure*. July 2016.

<sup>18</sup> California Air Resources Board, *California's 2017 Climate Change Scoping Plan*. November 2017.

<sup>19</sup> California's Fourth Climate Change Assessment. <http://resources.ca.gov/climate/safeguarding/research/>

<sup>20</sup> OEHHA, *Indicators of Climate Change in California*. <https://oehha.ca.gov/climate-change/document/indicators-climate-change-california>



resilient to ongoing and projected climate impacts as laid out by the Safeguarding California Plan.<sup>21</sup> The Safeguarding California Plan is being updated in 2017 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 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.<sup>22</sup>

#### 4.6.1.1 Greenhouse Gases

GHGs of most concern include the following compounds:

- Carbon Dioxide (CO<sub>2</sub>). Anthropogenic CO<sub>2</sub> 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.<sup>23</sup> 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<sub>4</sub>). 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 top three sources of CH<sub>4</sub> are landfills, natural gas systems, and enteric fermentation.<sup>24</sup> 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<sub>4</sub> is 21.
- Nitrous Oxide (N<sub>2</sub>O). 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<sub>2</sub>O is 310.
- 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) and hydrochlorofluorocarbons (HCFCs) gains momentum. The GWP of HFCs ranges from 140 for HFC-152a to 6,300 for HFC-236fa.
- 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

<sup>21</sup> California Natural Resources Agency, *Safeguarding California and Climate Change Adaption Policy*, <http://resources.ca.gov/climate/safeguarding/>

<sup>22</sup> California Air Resources Board, *California's 2017 Climate Change Scoping Plan*. November 2017.

<sup>23</sup> US Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2016*. 2018.

<sup>24</sup> USEPA n.d.[a]

lifetime of up to 50,000 years.<sup>25</sup> The global warming potentials (GWPs) of PFCs range from 5,700 to 11,900.

- Sulfur Hexafluoride (SF<sub>6</sub>). 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. However, its global warming contribution is not as high as the GWP would indicate due to its low mixing ratio, as compared to CO<sub>2</sub> (4 parts per trillion [ppt] in 1990 versus 365 parts per million [ppm] of CO<sub>2</sub>).<sup>26</sup>

#### 4.6.1.2 Global Ambient CO<sub>2</sub> Concentrations

To determine the global atmospheric variation of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O from before the start of industrialization, air trapped by ice has been extracted from core samples taken from polar ice sheets. For the period from around 1750 to the present, global CO<sub>2</sub> concentrations increased from a pre-industrialization period concentration to 391 ppm in 2011, which represents an exceedance of 1750 levels by approximately 40 percent.<sup>27</sup> Global CH<sub>4</sub> and N<sub>2</sub>O concentrations show similar increases for the same period (see **Table 4.6-1, Comparison of Global Pre-Industrial and 2011 GHG Concentrations**).

**Table 4.6-1**  
**Comparison of Global Pre-Industrial and 2011 GHG Concentrations**

Greenhouse Gas	Early Industrial Period Concentrations <sup>1</sup>	Natural Range for Last 650,000 Years <sup>1</sup>	2011 Concentrations <sup>2</sup>
Carbon Dioxide (CO <sub>2</sub> )	280 ppm	180 to 300 ppm	391 ppm
Methane (CH <sub>4</sub> )	715 ppb	320 to 790 ppb	1,803 ppb
Nitrous Oxide (N <sub>2</sub> O)	270 ppb	NA	324 ppb

Source: <sup>1</sup> Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: The Physical Science Basis, Summary for Policymakers 2007*. <sup>2</sup> IPCC, *Climate Change 2013 The Physical Science Basis*. 2013.  
ppm=parts per million; ppb=parts per billion.

<sup>25</sup> US Department of Energy, Energy Information Administration, "Other Gases: Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride," [http://www.eia.doe.gov/oiaf/1605/gg00rpt/other\\_gases.html](http://www.eia.doe.gov/oiaf/1605/gg00rpt/other_gases.html). n.d.

<sup>26</sup> US Environmental Protection Agency (US EPA), "High GWP Gases and Climate Change," <http://www.epa.gov/highgwp/scientific.html#sf6>. n.d.

<sup>27</sup> IPCC, *Climate Change 2013 The Physical Science Basis*. 2013.

### 4.6.1.3 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 2014. The sum of the top five GHG producing nations (plus the European Union) totaled approximately 29,600 million metric tons of CO<sub>2</sub> equivalents (MMTCO<sub>2</sub>e).<sup>28,29</sup> It should be noted that global emissions inventory data are not all from the same year and may vary depending on the source of the emissions inventory data.<sup>30</sup> The top five countries and the European Union accounted for approximately 55 percent of the total global GHG emissions according to the most recently available data (see **Table 4.6-2, 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 4.6-2**; however, the data is representative of currently available global inventory data.

#### *United States*

As noted in **Table 4.6-2**, the US was the number two producer of global GHG emissions in 2014. The primary GHG emitted by human activities in the US was CO<sub>2</sub>, representing approximately 82 percent of total GHG emissions.<sup>31</sup> Carbon dioxide from fossil fuel combustion, the largest source of GHG emissions, accounted for approximately 76 percent of US GHG emissions.<sup>32</sup>

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<sup>28</sup> World Resources Institute, "Climate Analysis Indicators Tool (CAIT)," <https://www.climatewatchdata.org/ghg-emissions?breakBy=location&source=31&version=1>

<sup>29</sup> The CO<sub>2</sub> equivalent emissions commonly are expressed as "million metric tons of carbon dioxide equivalent (MMTCO<sub>2</sub>E)." The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP, such that MMTCO<sub>2</sub>E = (million metric tons of a GHG) × (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<sub>2</sub>.

<sup>30</sup> The global emissions are the sum of Annex I and non-Annex I countries, without counting Land-Use, Land-Use Change and Forestry (LULUCF). For countries without 2005 data, the United Nations Framework Convention on Climate Change (UNFCCC) data for the most recent year were used. United Nations Framework Convention on Climate Change, "Annex I Parties – GHG total without LULUCF," [http://unfccc.int/ghg\\_emissions\\_data/ghg\\_data\\_from\\_unfccc/time\\_series\\_annex\\_i/items/3841.php](http://unfccc.int/ghg_emissions_data/ghg_data_from_unfccc/time_series_annex_i/items/3841.php) and "Flexible GHG Data Queries" with selections for total GHG emissions excluding LULUCF/LUCF, all years, and non-Annex I countries, <http://unfccc.int/di/FlexibleQueries/Event.do?event=showProjection>. n.d.

<sup>31</sup> Ibid.

<sup>32</sup> Ibid.

**Table 4.6-2**  
**Top Five GHG Producer Countries and the European Union (Annual)**

Top Emitting Countries	2014 GHG Emissions (MMTCO <sub>2</sub> e)
China	12,000
United States	6,300
European Union (EU), 27 Member States	3,600
India	3,200
Indonesia	2,500
Russia	2,000

Source: World Resources Institute, "Climate Analysis Indicators Tool (CAIT)," <http://cait.wri.org/>. 2017  
 Excludes emissions and removals from land use, land-use change, and forestry (LULUCF).  
 Note: Emissions are based on 2014 data.

### *State of California*

The California Air Resources Board (CARB) compiles GHG inventories for the State of California. Based on the 2017 GHG inventory data (i.e., the latest year for which data are available), California emitted 440 MMTCO<sub>2</sub>e including emissions resulting from imported electrical power in 2015.<sup>33</sup> Based on the GHG inventories compiled by the World Resources Institute,<sup>34</sup> California's total statewide GHG emissions rank second in the US (Texas is number one with 874 MMTCO<sub>2</sub>e) with emissions of 455 MMTCO<sub>2</sub>e in 2017.<sup>35</sup>

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 4.6-3, GHG Emissions in California**, provides a summary of GHG emissions reported in California in 2000 and 2015 separated by categories defined by the United Nations Intergovernmental Panel on Climate Change (IPCC).

<sup>33</sup> California Air Resources Board, "California Greenhouse Gas 2000-2015 Inventory by IPCC Category - Summary," 2017. [https://www.arb.ca.gov/cc/inventory/data/tables/ghg\\_inventory\\_ipcc\\_sum\\_2000-15.pdf](https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_ipcc_sum_2000-15.pdf).

<sup>34</sup> World Resources Institute, *U.S. State Emissions Explorer Tool*, 2017. <http://cait.wri.org/>

<sup>35</sup> Ibid.

**Table 4.6-3  
GHG Emissions in California**

Source Category	2000 (MMTCO <sub>2</sub> e )	Percent of Total	2015 (MMTCO <sub>2</sub> e )	Percent of Total
<b>ENERGY</b>	<b>408.90</b>	<b>87.52%</b>	<b>365.6</b>	<b>83.02%</b>
Energy Industries	159.12	--	132.93	--
Manufacturing Industries & Construction	22.75	--	19.98	--
Transport	175.29	--	163.64	--
Other Sectors (Residential/Commercial/Institutional)	44.67	--	40.33	--
Solid Fuels	0.04	--	0.01	--
Fugitive Emissions from Oil & Natural Gas	5.78	--	7.51	--
Fugitive Emissions from Geothermal Energy Production	1.13	--	1.15	--
Pollution Control Devices	0.11	--	0.00	--
<b>INDUSTRIAL PROCESSES &amp; PRODUCT USE</b>	<b>19.60</b>	<b>4.20%</b>	<b>32.5</b>	<b>7.38%</b>
Mineral Industry	5.60	--	5.23	--
Chemical Industry	0.06	--	0.03	--
Non-Energy Products from Fuels & Solvent Use	2.46	--	1.90	--
Electronics Industry	0.52	--	0.26	--
Substitutes for Ozone Depleting Substances	6.10	--	18.37	--
Other Product Manufacture and Use	1.52	--	1.39	--
Other	3.31	--	5.26	--
<b>AGRICULTURE, FORESTRY, &amp; OTHER LAND USE</b>	<b>29.40</b>	<b>6.29%</b>	<b>31.70</b>	<b>7.20%</b>
Livestock	19.62	--	23.25	--
Aggregate Sources & Non-CO <sub>2</sub> Sources on Land	9.76	--	8.42	--
<b>WASTE</b>	<b>9.30</b>	<b>1.99%</b>	<b>10.60</b>	<b>2.41%</b>
Solid Waste Disposal and Biological Treatment	7.22	--	8.40	--
Biological Treatment of Solid Waste	0.13	--	0.33	--
Wastewater Treatment & Discharge	1.93	--	1.90	--
<b>EMISSIONS SUMMARY</b>				
Gross California Emissions	467.19		440.36	

Sources:

- <sup>1</sup> California Air Resources Board, "California Greenhouse Gas 2000-2015 Inventory by IPCC Category - Summary," [https://www.arb.ca.gov/cc/inventory/data/tables/ghg\\_inventory\\_ipcc\\_sum\\_2000-15.pdf](https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_ipcc_sum_2000-15.pdf), 2016.

Between 2000 and 2015, the population of California grew by approximately 4.5 million, from 33.9 to 38.4 million.<sup>36</sup> This represents an increase of approximately 13 percent from 2000 population levels.

<sup>36</sup> US Census Bureau, "American Fact Finder," <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>, accessed 2017;

In addition, the California economy, measured as gross state product, grew from \$1.4 trillion in 2000 to \$2.5 trillion in 2015, nearly doubling the 2000 gross state product.<sup>37</sup> Despite the population and economic growth, California's net GHG emissions only grew by approximately 2 percent. The California Energy Commission (CEC) attributes the slow rate of growth 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*<sup>38</sup> 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<sub>2</sub> equivalent (CO<sub>2</sub>e) 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<sub>2</sub>e of which the Electricity Consumption sector represents 31 percent followed by the Fossil Fuel Industry sector at 26 percent.

The 2020 CO<sub>2</sub>e emission inventory is projected to be similar, primarily due to a projected decrease in heavy oil production between years 2005 and 2020 resulting in a GHG emissions reduction that offsets the projected increase of GHG emissions related to the County's population growth. If emissions from petroleum production are excluded from the inventory, the remaining sectors would show a 27 percent increase in emissions from 2005 (16,117,791 metric tons CO<sub>2</sub>e) to 2020 (20,473,713 metric tons CO<sub>2</sub>e).

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<sup>37</sup> California Department of Finance, "Financial & Economic Data: Gross Domestic Product, California," [http://www.dof.ca.gov/Forecasting/Economics/Indicators/Gross\\_State\\_Product/](http://www.dof.ca.gov/Forecasting/Economics/Indicators/Gross_State_Product/), accessed 2017. Amounts are based on current dollars as of the data of the report (April 2018).

<sup>38</sup> See [https://www.co.kern.ca.us/planning/pdfs/kc\\_ghg\\_final\\_report.pdf](https://www.co.kern.ca.us/planning/pdfs/kc_ghg_final_report.pdf)

## 4.6.2 REGULATORY FRAMEWORK

### 4.6.2.1 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 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., Fifth Assessment Report, consisting of three working group reports and a synthesis report based on the first three reports) was published in 2013. In its 2013 report, the IPCC stated that global temperature increases since 1951 were extremely likely attributable to man-made activities (greater than 95 percent certainty).<sup>39</sup>

#### *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”).<sup>40</sup> 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.

However, in June 2017, the U.S. announced its intent to withdraw from the Accord.<sup>41</sup> The earliest effective date of a withdrawal by the U.S. is November 2020.

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<sup>39</sup> IPCC, *Climate Change 2013 The Physical Science Basis*. 2013.

<sup>40</sup> United Nations, Paris Agreement, 2015. Available: [http://unfccc.int/files/essential\\_background/convention/application/pdf/english\\_paris\\_agreement.pdf](http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf), accessed April 17, 2018

<sup>41</sup> <https://www.whitehouse.gov/briefings-statements/statement-president-trump-paris-climate-accord/>, accessed April 17, 2018.

## 4.6.2.2 Federal

### *Supreme Court Ruling*

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 the US Environmental Protection Agency (USEPA) must regulate if it determines they pose an endangerment to public health or welfare.

### *US EPA Endangerment Finding*

On December 7, 2009, the US 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

### *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 (USEPA) 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 USEPA beginning in 2011 (covering the



2010 calendar year emission). Vehicle and engine manufacturers were required to begin reporting GHG emissions for model year 2011.

### ***National Fuel Efficiency Policy***

In addition, on May 19, 2009, President Barack Obama announced a new National Fuel Efficiency Policy aimed at increasing fuel economy and reducing greenhouse gas pollution.<sup>42</sup> The new National Fuel Efficiency Policy is expected to increase fuel economy by more than 5 percent by requiring a fleet-wide average of 35.5 miles per gallon by 2016 starting with model years 2012.

### ***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 reductions 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.

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<sup>42</sup> The White House, Office of the Press Secretary, <https://obamawhitehouse.archives.gov/the-press-office/president-obama-announces-national-fuel-efficiency-policy>, accessed 2018.

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.

### ***Heavy-Duty Vehicle Program***

In May 2010, President Barack Obama issued a Presidential Memorandum Regarding Fuel Efficiency Standards requesting that USEPA and National Highway Traffic Safety Administration (NHTSA) take additional coordinated steps to produce a new generation of clean vehicles. In response, USEPA and 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 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, US EPA and NHTSA adopted Phase 2 GHG and fuel efficiency standards for medium- and heavy-duty engines and vehicles.<sup>43</sup>

### ***Clean Power Plan***

In 2015, US EPA published the Clean Power Plan (80 Fed. Reg. 64661, October 23, 2015). The Clean Power Plan sets achievable standards to reduce CO<sub>2</sub> 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, US EPA is establishing: (1) CO<sub>2</sub> 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<sub>2</sub> goals reflecting the CO<sub>2</sub> 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<sub>2</sub> emission performance rates, which may be accomplished by meeting the state goals. This final rule would continue progress already under way in the United States to reduce CO<sub>2</sub> 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

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<sup>43</sup> U.S. Environmental Protection Agency, Final Rule for Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2. Available: <https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-greenhouse-gas-emissions-and-fuel-efficiency#rule-history>, accessed March 1, 2018.

review. In addition, US EPA is currently proposing to repeal the Clean Power Plan after completing a thorough review as directed by the Executive Order on Energy Independence (as discussed below). In sum, the Clean Power Plan continues to face multiple legal challenges and its future is uncertain.

### ***Executive Order on Energy Independence***

On March 28, 2017, President Donald Trump signed Executive Order 13783, “Promoting Energy Independence and Economic Growth,” which calls 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

#### **4.6.2.3 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.

### ***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.

### ***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.<sup>44</sup> 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 Report was published in December 2010. The CAT Report discusses mitigation and adaptation strategies, state research programs, policy development, and future efforts.

### ***Assembly Bill 32 (AB 32) and CARB Scoping Plan***

The State of California has implemented numerous laws targeting GHG emissions. Chief among these is the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) (Health & Safety Code Section 38500 et seq.). AB 32 represents the first enforceable statewide program to limit GHG emissions from all major sectors with penalties for noncompliance. Like EO S-3-05, AB 32 requires the State of California to reduce its emissions to 1990 levels by 2020. The Act establishes key deadlines for certain actions the state must take in order to achieve the reduction target. The first action under AB 32 resulted in California Air Resources Board's (CARB) adoption of a report listing three specific early action GHG reduction measures on June 21, 2007. On October 25, 2007, CARB approved an additional six early action GHG reduction measures under AB 32.<sup>45</sup>

As required under AB 32, on December 6, 2007, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 MMTCO<sub>2e</sub>, since

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<sup>44</sup> 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.

<sup>45</sup> <https://www.arb.ca.gov/cc/ccea/ccea.htm>, accessed April 17, 2018.

updated to 431 MMTCO<sub>2</sub>e.<sup>46</sup> The inventory indicated that in 1990, transportation, with 35 percent of the state's total emissions, was the largest single sector generating carbon dioxide; followed by industrial emissions, 24 percent; imported electricity, 14 percent; in-state electricity generation, 11 percent; residential use, 7 percent; agriculture, 5 percent; and commercial uses, 3 percent (figures are based on the 1990 inventory). AB 32 does not require individual sectors to meet their individual 1990 GHG emissions inventory; the total statewide emissions are required to meet the 1990 target by 2020.

In addition to the 1990 emissions inventory, CARB also adopted regulations requiring the mandatory reporting of GHG emissions for large facilities on December 6, 2007 (17 Cal. Code Regs. Section 95100 *et seq.*). The mandatory reporting regulations require annual reporting from the largest facilities in the state, which account for approximately 94 percent of GHG emissions from industrial and commercial stationary sources in California. About 800 separate sources fall under the new reporting rules and include electricity generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 tons of CO<sub>2</sub> each year from on-site stationary combustion sources. Affected facilities began tracking their emissions in 2008, and reported them beginning in 2009, with a phase-in process to allowed facilities to develop reporting systems and train personnel in data collection. Emissions for 2008 could be based on best available emission data. Beginning in 2010, however, emissions reporting requirements became more rigorous and are subject to third-party verification. Verification will take place annually or every three years, depending on the type of facility.

In December 2008, CARB adopted a *Climate Change Scoping Plan*<sup>47</sup> indicating how emission reductions will be achieved from significant sources of GHGs via regulations, market mechanism, and other actions. The *Climate Change Scoping Plan* identifies 18 recommended strategies the state should implement to achieve AB 32.

CARB's initial Scoping Plan contains the main strategies California would implement to reduce the projected 2020 Business-as-Usual (BAU) emissions to 1990 levels, as required by AB 32. These strategies are intended to reduce CO<sub>2</sub>e<sup>48</sup> emissions by 174 million metric tons (MT), or approximately 30 percent,

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<sup>46</sup> <https://www.arb.ca.gov/cc/inventory/1990level/1990level.htm>, accessed April 18, 2017.

<sup>47</sup> <https://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>, accessed April 17, 2018.

<sup>48</sup> Carbon dioxide equivalent (CO<sub>2</sub>e) – A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

from the State’s projected 2020 emissions level of 596 million MTCO<sub>2e</sub> (MMTCO<sub>2e</sub>) under a BAU<sup>49</sup> scenario. This reduction of 42 million MTCO<sub>2e</sub>, or almost 10 percent from 2002 to 2004 average emissions, would be required despite the population and economic growth forecast through 2020.

CARB’s initial Scoping Plan calculates 2020 BAU emissions as those expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors (e.g., transportation, electrical power, commercial and residential, industrial). CARB used 3-year average emissions, by sector, for 2009 to 2011 to forecast emissions to 2020. The measures described in CARB’s Scoping Plan are intended to reduce the projected 2020 BAU to 1990 levels, as required by AB 32.

The First Update to California’s Climate Change Scoping Plan (2014 Scoping Plan Update<sup>50</sup>) was developed by the CARB in collaboration with the CAT and reflects the input and expertise of a range of state and local government agencies. The 2014 Scoping Plan Update lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050.

On December 14, 2017, CARB approved the final version of *California’s 2017 Climate Change Scoping Plan* (2017 Scoping Plan Update), which outlines the proposed framework of action for achieving the SB 32 2030 GHG target of 40 percent reduction in GHG emissions relative to 1990 levels (CARB 2017a). See further discussion below.

### ***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).

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<sup>49</sup> “Business-as-Usual” refers to emissions expected to occur in the absence of any GHG reduction measure (California Environmental Protection Agency Air Resources Board Website, <http://www.arb.ca.gov/cc/inventory/data/bau.htm>, Accessed June 1, 2016). Note that there is significant controversy as to what BAU means. In determining the GHG 2020 limit, CARB used the above as the “definition.”

<sup>50</sup> <https://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm>, accessed April 17, 2018.

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, for 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 the particular set of facilities. The emissions allowances can be traded amongst 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<sub>2</sub>e 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***

In 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 government 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) and AB 197***

On September 8, 2016, California signed into law Senate Bill 32 (SB 32), which adds Section 38566 to the Health and Safety Code and requires a commitment to reducing statewide GHG emissions by 2020 to 1990 levels and by 2030 to 40 percent less than 1990 levels. SB 32 was passed with companion legislation

AB 197 Chapter 250, Statutes of 2016), which provides greater legislative oversight of CARB's GHG regulatory programs, requires CARB to account for the social costs of GHG emissions, and establishes a legislative preference for direct reductions of GHG emissions.

In November 2017, CARB adopted California's 2017 Climate Change Scoping Plan (2017 Update), which outlines the proposed framework of action for achieving California's SB 32 2030 GHG target: a 40 percent reduction in GHG emissions by 2030 relative to 1990 levels.<sup>51</sup> The 2030 target is intended to ensure that California remains on track to achieve the goal set forth by E.O. B-30-15 to reduce statewide GHG emissions by 2050 to 80 percent below 1990 levels.

The 2017 Update identifies key sectors of the implementation strategy, which includes improvements in low carbon energy, industry, transportation sustainability, natural and working lands, waste management, and water. Through a combination of data synthesis and modeling, CARB determined that the target statewide 2030 emissions limit is 260 MMTCO<sub>2e</sub>, and that further commitments will need to be made to achieve an additional reduction of 50 MMTCO<sub>2e</sub> beyond current policies and programs. Key elements of the 2017 Update include a proposed 20 percent reduction in GHG emissions from refineries and an expansion of the Cap-and-Trade program to meet the aggressive 2030 GHG emissions goal and ensure achievement of the 2050 limit set forth by E.O. B-30-15. For the transportation sector, the 2017 Update indicates that while most of the GHG reductions will come from technologies and low carbon fuels, a reduction in the growth of vehicle miles traveled (VMT) is also needed. The 2017 Update indicates that stronger SB 375 GHG reduction targets will enable the State to make significant progress toward this goal, but alone will not provide all of the VMT growth reductions that will be needed. 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 2017 Update recommends that local governments consider policies to 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.

### ***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 are specifically addressed in

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<sup>51</sup> CARB, *California's 2017 Climate Change Scoping Plan*, November 2017.



*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, 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 which, in combination with transportation policies and programs, strives to reduce emissions and helps 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. For the 2018 RTP/SCS cycle, CARB set reduction targets for Tulare County at 5 percent for 2020 and 10 percent for 2035.

***Senate Bill 1078, Senate Bill 107, Executive Order S-14-08, and Executive Order S-21-09 (Renewables Portfolio Standard)***

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.

***Executive Order (EO) S-1-07, the Low Carbon Fuel Standard***

On January 18, 2007, EO S-1-07 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 (ARB). The Low Carbon Fuel Standard has been identified by ARB as a discrete early action item in the *Climate Change Scoping Plan*.<sup>52</sup> CARB expects the Low Carbon Fuel Standard to achieve the minimum 10 percent reduction goal; however, many of the early action items outlined in the *Climate Change Scoping Plan* work in tandem with one another. To avoid the potential for double-counting emission reductions associated with AB 1493 (see previous discussion), the *Climate Change Scoping Plan* has modified the aggregate reduction expected from the Low Carbon Fuel Standard to 9.1 percent.

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<sup>52</sup> CARB, *Climate Change Scoping Plan: a framework for change*. December 2008.

### ***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*<sup>53,54</sup>, summarizes the best-known science to assess the vulnerability of the state to climate change impacts, and outlines possible solutions that can be 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 and 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

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<sup>53</sup> California Natural Resources Agency, *2009 California Climate Adaption Strategy*. 2009.

<sup>54</sup> This report has been updated twice, once in 2014, and once in 2018 to reflect current adaption strategies and incorporate a “Climate Justice” chapter highlighting how equity is woven throughout the entire plan.

Efficiency Standards were adopted in November 2003, took effect 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, effecting 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 2016 Standards, effective January 1, 2017, 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.

### ***Senate Bill 1 (SB 1)***

SB 1 (2006) (Chapter 598, 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.

### ***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.

### ***Executive Order S-13-08***

On April 29, 2015, Governor Brown issued Executive Order B-30-15. Therein, the governor directed the following:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 (subsequently codified in SB 32).
- Ordered all state agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of CO<sub>2</sub> equivalent.

### ***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.

#### **4.6.2.4 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 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 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 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 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 in chapter 5 of the 2014 RTP and provided significant updates in the 2011 RTP to reflect the 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***

In 2016, Kern COG updated the Performance Based Project Delivery Policy and Procedures reflecting SB 375 related outcomes.<sup>55</sup> 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.

### ***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 Government's 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 are 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.

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<sup>55</sup> Kern Council of Governments Project Delivery Policies and Procedures, Updated November 2016  
[http://www.kerncog.org/wp-content/uploads/2012/12/project\\_selection\\_policy\\_20161117.pdf](http://www.kerncog.org/wp-content/uploads/2012/12/project_selection_policy_20161117.pdf)



- 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<sup>56</sup> 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.

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<sup>56</sup> City of Taft, *2017 Climate Action Plan*. March 2017.

- 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 safety of users is top priority.
- Encourage mixed-used 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%.
- 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 need 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 that 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 investor-owned utility.
- Older homes, especially those built before 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%.

- 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 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% to 50%. 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 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 recycling 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 business 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 vehicle miles traveled reduction 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.

Table 4.6-4 shows the potential estimated emission reductions associated with the Taft CAP policies.

**Table 4.6-4  
Taft Climate Action Plan  
GHG Emissions Reductions and Reductions Targets (2030 and 2050)**

	2030		2050	
	With CCE	Without CCE	With CCE	Without CCE
Reduction target (MTCO <sub>2e</sub> per capita)	6.00	6.00	2.00	2.00
Emissions with CAP (MTCO <sub>2e</sub> per capita)	1.77	1.78	0.65	0.66

	2030		2050	
	With CCE	Without CCE	With CCE	Without CCE
Absolute emissions level with CAP (MTCO <sub>2e</sub> )	72,320	72,810	57,860	58,130
Reach goals (percent below 2020 goal)	40%	40%	80%	80%
Reach goals (MTCO <sub>2e</sub> )	45,610	45,610	15,200	15,200
Gap between CAP and reach goals (MTCO <sub>2e</sub> )	26,710	27,200	42,660	42,930

Source: City of Taft, 2017 Climate Action Plan. March 2017.

Note: Community Choice Energy (CCE) is a proposed GHG reduction strategy in the City of Taft CAP that will enable the City to exert more local control over electricity sources, including allowing the City to use a larger proportion of electricity from renewable sources. Due to uncertainty as to whether CCE will be implemented, all reductions from existing and proposed local actions are shown both with and without CCE in place.

### 4.6.3 ENVIRONMENTAL IMPACTS

#### 4.6.3.1 Thresholds of Significance

The following thresholds for determining the significance of impacts related to greenhouse gas emissions (GHG) have been modified to address an RTP based on the environmental checklist form contained in Appendix G of the most recent update of the *CEQA Guidelines*. Impacts related to GHG are considered significant if the proposed Project would:

- increase GHG emissions compared to existing conditions (2017);
- conflict with an applicable plan, policy or regulation adopted for the purpose of reducing emissions of greenhouse gases; or
- conflict with SB 375 GHG emission reduction targets.

*CEQA Guidelines* Section 15064.4(a) confirms that lead agencies retain the discretion to determine the significance of GHG emissions. The guidelines advise lead agencies to consider the following factors in determining the significance of GHG emissions: whether the project increases or reduces GHG emissions compared to the existing environmental setting, whether project emissions exceed a threshold of significance identified by the lead agency as appropriate to the project, and the extent to which the project complies with regulations or requirements of certain adopted GHG reduction plans. (*CEQA Guidelines* Section 15064.4(b).) However, fundamentally, the courts recognize that lead agencies are allowed to decide what threshold of significance they will apply to a project. (See *Citizens for Responsible Equitable Development v. City of Chula Vista* (2011) 197 Cal.App. 4th 327, upholding an AB 32-based approach to setting significance thresholds.)

This PEIR uses three thresholds of significance: increase in GHG emissions compared to existing conditions, conflict with an applicable plan, policy or regulation adopted for the purpose of reducing

emissions of greenhouse gases, and conflict with SB 375 GHG emission reduction targets. Kern Council of Governments (COG) selected the SB 375-based threshold, because complying with SB 375 is the responsibility of this Plan. The other two thresholds are consistent with *CEQA Guidelines* Appendix G.

#### 4.6.3.2 Methodology

The following section summarizes the methodology used to evaluate the expected impacts of implementation of the Plan on GHG emissions.

##### *Cumulative Analysis*

The 2018 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 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 2018 RTP, the 2018 RTP would influence growth, including distribution patterns, throughout Kern County. The analysis in this PEIR addresses overall impacts of all transportation projects and land development anticipated to occur under the 2018 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.

##### *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 beyond the scope of this document 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 in to 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 2018 RTP using Kern COG's UPlan Model outputs and ARB's EMFAC2014 emissions model. In the analysis below, future year emissions are compared to 1990, 2005, and 2017 (using 15 percent below 2005 emissions as a proxy).

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.

#### 4.6.3.3 Impacts and Mitigation Measures

**Impact GHG-1            Increase GHG emissions compared to existing conditions (2017).**

##### *Regional and Transit Priority Area Impacts*

CEQA requires that impacts associated with a proposed Project be compared to existing conditions. This differs from the requirements of other GHG reduction plans such as AB 32 and SB 375 in that they mandate a reduction from a specific baseline year, in this case 1990 and 2005 respectively. As neither 1990 nor 2005 can be reasonably said to reflect existing conditions, this threshold is used to address CEQA.

In addition to transportation improvements, the Plan identifies projected growth for the Kern COG region in accordance with policies identified to reduce vehicle trips and vehicle trip length. Between 2017 and 2042 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 development in a compact pattern, which reduces per capita GHG emissions as compared to the No Project. 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 U.S.<sup>57</sup>

### ***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.

The 2017 Scoping Plan indicates 2015 emissions Statewide (440.4 MMTCO<sub>2</sub>e) by sector as follows: 37 percent transportation, 21 percent industrial, 11 percent electricity generation in state, 8 percent electricity generation imports, 8 percent agriculture, 9 percent commercial and residential, 4 percent high GWP, 2 percent recycling and waste.

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<sup>57</sup> U.S. EPA, *Potential for Reducing Greenhouse Gas Emissions in the Construction Sector*. February 2009.

The 2012 Kern County Greenhouse Gas Inventory indicates 2005 emissions (12.04 MMTCO<sub>2</sub>e) 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 2012 Kern County Greenhouse Gas Inventory indicates 2020 emissions (12.27 MMTCO<sub>2</sub>e) by sector as follows: 31 percent electricity consumption, 26 percent fossil fuels industry, 18 percent transportation, 10 percent agriculture, 9 percent industrial processes, 6 percent residential/commercial/industrial combustion, < 1 percent for forestry and land use, < 1 percent for waste management and < 1 percent for other sources.

Between 2005 and 2020 Countywide emissions were anticipated to increase by 0.8%; the major change in GHG emissions is anticipated to be from the fossil fuels industry with emissions decreasing from 40 percent of the total to 26 percent of the total in 15 years (and decreasing in absolute amount by about 36%). All other sectors increased in total emissions and relative percentage of the total. Between 2005 and 2020 GHG emissions by sector increased as follows: electricity increased by 42 percent, residential/commercial/industrial increased by 32 percent, transportation by 5.6 percent, industrial processes by 26.8 percent, agriculture by 31 percent, waste management by 21.8 percent, forestry and land use by 33 percent and other sources by 3 percent.

The number of residential units as well as area of commercial and industrial uses is anticipated to increase under the 2018 RTP (see **Section 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 area 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 (although CARB is confident that the State as a whole is on track to meet AB 32 emission reduction goals).

The 2018 RTP and Kern COG have little to no influence on emissions from the majority of stationary/area sources.

The 2018 RTP/SCS 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. It is not possible to estimate the energy and water efficiencies that would result from the 2018 RTP and the associated emissions reductions because to estimate such emissions detailed information regarding existing emissions, existing emissions to be eliminated, and design of future development would be needed.

Although Kern COG develops the SCS in the 2018 RTP to meet the GHG targets for the region, Kern COG does not have any actual authority over whether or how land is developed in Kern County. Consequently, the 2018 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 2018 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. Vehicle emissions were modeled by Kern COG using a methodology agreed upon by CARB (EMFAC2014). Results for mobile source emissions are presented in **Table 4.6-5, Annual Total Mobile Source GHG Emissions – 2017 Compared to 2042**.

**Table 4.6-5  
Annual Total Mobile Source GHG Emissions – 2017 Compared to 2042**

Source	2017 (MTCO <sub>2</sub> e/Year)	2042 Plan (MTCO <sub>2</sub> e/Year)	2042 No Build (MTCO <sub>2</sub> e/Year)
Mobile	5,658,265	5,787,333	6,138,966

*Sources: Kern COG 2018.*

As shown in **Table 4.6-5**, growth in Kern County would result in an increase of mobile-source GHG emissions in 2042 as compared to 2017 under the 2018 RTP/SCS (but less than would occur under the No Project Alternative). This increase is approximately two percent from 2017 to 2042. Under the No Project Alternative, emissions would increase by approximately eight percent.

With regard to this threshold, the project would have a significant impact as a result of both stationary/area source increases in emissions and mobile source emissions as compared to existing conditions.

### ***Level of Significance Before Mitigation***

Significant at the regional and TPA levels.

### ***Mitigation Measures***

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 2018 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.

See also mitigation measures to reduce VMT in **Section 4.11, Transportation and Traffic (MM TR-3, through MM-TR-5)**, 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 2018 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<sup>58</sup> 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.<sup>59</sup>
- 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

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<sup>58</sup> [http://www.kerncog.org/images/agendas/COG/TPPC\\_agenda\\_20140116.pdf](http://www.kerncog.org/images/agendas/COG/TPPC_agenda_20140116.pdf) p. 84

<sup>59</sup> <http://www.valleyblueprint.org/planners-toolkit.html>

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.

CAPs should, when appropriate, incorporate planning and land use measures from the California Attorney General's latest list of example policies to address climate change at both the plan and project level. Specifically, at the plan level, land use plans can and should, when appropriate and feasible, incorporate planning and land use measures from the California Attorney General's latest list of example policies to address climate change ([http://ag.ca.gov/globalwarming/pdf/GP\\_policies.pdf](http://ag.ca.gov/globalwarming/pdf/GP_policies.pdf)), including, but not limited to policies from that web page such as:

- Smart growth, jobs/housing balance, transit-oriented development, and infill development through land use designations, incentives and fees, zoning, and public private partnerships
- Create transit, bicycle, and pedestrian connections through planning, funding, development requirements, incentives and regional cooperation, and create disincentives for auto use
- Energy and water-efficient buildings and landscaping through ordinances, development fees, incentives, project timing, prioritization, and other implementing tools

In addition, implementing and local agencies should incorporate, as appropriate, policies to encourage implementation of the Attorney General's list of project-specific mitigation measures available at the following web site: [http://ag.ca.gov/globalwarming/pdf/GW\\_mitigation\\_measures.pdf](http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf), including, but not limited to measures from the web page, such as:

- Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation
- Build or fund a major transit stop within or near development
- Provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers
- Incorporate bicycle lanes, routes and facilities into street systems, new subdivisions, and large developments
- Require amenities for non-motorized transportation, such as secure and convenient bicycle parking

They should also incorporate, when appropriate, planning and land use measures from additional resources listed by the California Attorney General at the following webpage: <http://ag.ca.gov/globalwarming/ceqa/resources.php>.

In addition, CAPs should also incorporate analysis of climate change adaptation, in recognition of the likely and potential effects of climate change in the future regardless of the level of mitigation and in conjunction with Executive Order S-13-08, which seeks to enhance the state's management of climate impacts including sea level rise, increased temperatures, shifting precipitation, and extreme weather events by facilitating the development of state's first climate adaptation strategy.

### *Level of Significance After Mitigation*

Mitigation Measures MM TR-3, through MM-TR-5, MM AIR-1 and MM AIR-2, and MM GHG-1 through MM GHG-6 would reduce GHG emissions. 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 GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing emissions of greenhouse gases.**

### *Regional and Transit Priority Area Impacts*

#### *AB 32 and SB 32*

SB 375 was adopted in order to assist the state in meeting AB 32 targets. By meeting SB 375 targets as discussed below, the RTP has successfully fulfilled its responsibilities with regard to AB 32. Furthermore,



California's 2017 Climate Change Scoping Plan (Scoping Plan)<sup>60</sup> indicates that the state as a whole is on course to reach the 2020 and 2030 emissions target and CARB is confident that it will. 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 2018 RTP does not block or otherwise hinder any of the regulations or programs described by CARB as central to the success of AB 32. To the contrary, by surpassing the reductions required by SB 375, the 2018 RTP has exceeded its responsibilities under AB 32, and consequently from this perspective the impact is less than significant.

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 proportionate to increase developed area. However, increasingly stringent regulations, as discussed above would reduce emissions associated with stationary and area sources.

Mobile emissions for 2020 were modeled in EMFAC2014 and provided by Kern COG. Mobile emissions for 2005 were taken from the Kern County GHG inventory.<sup>61</sup> Results are provided below in **Table 4.6-6**.

**Table 4.6-6**  
**Annual Total Mobile Source GHG Emissions – 1990 Compared to 2020**

Source	1990 (2005 minus 15%) (MTCO <sub>2e</sub> /Year)	2020 Plan (MTCO <sub>2e</sub> /Year)	2020 No Project Alternative (MTCO <sub>2e</sub> /Year)
Mobile Sources	3,723,439	4,363,348	5,494,878

Source: 2012 Kern County Inventory, Kern COG 2018 and Impact Sciences 2018

The results above show that there will be a net increase in mobile source emissions between 1990 and 2020, rather than a reduction. Under the 2018 RTP, the increase is estimated to be 639,909 MTCO<sub>2e</sub>, or approximately 17 percent (the 2012 Kern County Inventory anticipated mobile source emissions of 4,584,736 MTCO<sub>2e</sub> in 2020 excluding airplanes, rail and marine vessels, an increase of 1,008,930 MTCO<sub>2e</sub>, which would represent an increase of 23 percent). Under the No Build alternative, the increase would be greater.

<sup>60</sup> California Air Resources Board, *California's 2017 Climate Change Scoping Plan*. November 2017.

<sup>61</sup> San Joaquin Valley Air Pollution Control District, *Communitywide Greenhouse Gas Emission Inventory 2005 Baseline Year – 2020 Forecast*. May 2012.

*California's 2017 Climate Change Scoping Plan* provides recommended targets for local plan-level greenhouse gas emissions reductions of no more than 6 MTCO<sub>2e</sub> per capita by 2030, and no more than 2 MTCO<sub>2e</sub> per capita by 2050 to achieve targets under SB 32 and the longer-term State emissions reduction goal of 80 percent below 1990 levels by 2050.<sup>62</sup> To remain on target to achieve these reductions a value of approximately 3.6 MTCO<sub>2e</sub> per capita (all sources of CO<sub>2e</sub>) for the year 2042 would be needed.

The 2017 Scoping Plan recognizes that SB 375 GHG reductions may not be sufficient and indicates, “[t]hrough developing the Scoping Plan, CARB staff is more convinced than ever that, in addition to achieving GHG reductions from cleaner fuels and vehicles, California must also reduce VMT. Stronger SB 375 GHG reduction targets will enable the State to make significant progress toward needed reductions, but alone will not provide the VMT growth reductions needed; there is a gap between what SB 375 can provide and what is needed to meet the State’s 2030 and 2050 goals. In its evaluation of the role of the transportation system in meeting the statewide emissions targets, CARB determined that VMT reductions of 7 percent below projected VMT levels in 2030 (which includes currently adopted SB 375 SCSs) are necessary. In 2050, reductions of 15 percent below projected VMT levels are needed. A 7 percent VMT reduction translates to a reduction, on average, of 1.5 miles/person/day from projected levels in 2030.” (Emphasis added.)

As shown in **Table 4.6-5**, the 2018 RTP would result in approximately 5,787,333 MTCO<sub>2e</sub> from mobile sources in 2042. According to **Table 4.9-2, Population and Housing for Kern County and Cities**, the forecasted population for 2042 is approximately 1,469,500. This results in approximately 3.9 MTCO<sub>2e</sub> per capita by 2042 for mobile sources alone.

According to the 2017 Scoping Plan, in 2015 transportation sources represented 37% of all GHG emissions in the State. The 2012 Kern Countywide Greenhouse Gas Emissions Inventory indicated that transportation comprised 17% of GHG emissions in Kern County in 2005 and forecast that it would comprise 18% in 2020. However, relative percentages of each sector that comprise the total are changing and as discussed throughout this section regulations are being imposed on every sector to reduce emissions considerably (including on the transportation sector).

As discussed above, the 2018 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 2017 Climate Change Scoping Plan*, and if 2018 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

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<sup>62</sup> CARB, *California's 2017 Climate Change Scoping Plan*. Page 99. November 2017.

quantified analysis of the impact of the 2018 RTP/SCS (as well as the impact of other regulations on other sectors) with respect to consistency with AB 32, the Scoping Plan and SB 32 is not available, the increase in per capita GHG emissions is considered to be significant.

### *Other Plans*

The 2018 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 2018 RTP includes densifying development, as well as providing alternative transportation projects. The Taft Climate Action Plan includes emissions reduction targets that are consistent with 2017 Scoping Plan. As discussed above, mobile sources alone could equal approximately 3.9 MTCO<sub>2e</sub> per capita by 2042 without further emission controls. This would exceed the 2030 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 2018 RTP/SCS on the Taft Climate Action Plan with regards to land uses in Kern County is not available, the increase in per capita GHG emissions is considered to be potentially significant.

### *Level of Significance Before Mitigation*

As stated above, the Plan alone is not intended to meet the AB 32 or SB 32 targets. By meeting the SB 375 targets, the Plan has successfully contributed its share of meeting the objectives of AB 32 and SB 32. However, given the unknowns associated with demand for and emissions associated with other sectors, such as demand for and emissions associated with energy and water use, estimated total emissions could exceed AB 32, SB 32, and the Taft Climate Action Plan, targets resulting in a significant impact at the regional and TPA levels without assuming that the strategies in the AB 32 Scoping Plan or *California's 2017 Climate Change Scoping Plan* are implemented.

### *Mitigation Measures*

See **Mitigation Measures MM TR-3 through MM-TR-5, MM AIR-1 and MM AIR-2, and MM-GHG-1 through MM-GHG-4**, above.

### *Level of Significance After Mitigation*

Implementation of **Mitigation Measures MM TR-3 through MM-TR-5, MM AIR-1 and MM AIR-2, and MM GHG-1 through MM GHG-4** would reduce GHG emissions.

Increases in GHG emissions from existing conditions to 2042 would primarily be due to changes in regional growth/land use. While the mitigation measures listed would encourage reduction in GHG emissions, they do not provide a mechanism that guarantees GHG emission reductions.

Implementation of the Plan would result in an increase in GHG emissions as a result of the estimated mobile source emissions (other than light duty vehicles which would meet the applicable target: see SB 375 discussion) and emissions associated with residential, commercial agricultural and industrial uses. Reductions in emissions to meet AB 32, Scoping Plan, SB 32 and Taft Climate Action Plan targets cannot be demonstrated with available data and therefore, **Impact GHG-2** would remain significant at the regional and TPA level.

**Impact GHG-3: Conflict with SB 375 GHG emission reduction targets.**

### *Regional and Transit Priority Area Impacts*

SB 375 requires that local MPOs provide plans to reduce GHG emissions from cars and light trucks compared to 2005 levels. The specific reduction targets are determined by CARB. For Kern County, CARB determined that the 2020 target is a 5 percent reduction from 2005 emissions levels, and the 2035 target is a 10 percent reduction. The 2018 RTP exceeds these targets, providing reductions of almost 13 percent in both 2020 and 2035. Results are shown in the 2018 RTP table reproduced below.

The 2018 RTP achieves the reductions by a mix of land use strategies, transportation management, economic factors, and road projects. The 2018 RTP also notes state and regional programs that assist in reaching the reductions 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. For example, High Speed Rail (HSR) is included in calculations for meeting AB 32 targets. To avoid double-counting reductions associated with HSR, HSR was not included in calculations of SB 375 emissions for Kern County.

As shown in **Table 4.6-7, Results of Greenhouse Gas Emissions and Vehicle Trips Reductions**, per capita GHG emissions from cars and light duty trucks are calculated to be 15.49 pounds per day in 2020 with the 2018 RTP/SCS. The result of the 2018 RTP/SCS is a 14.06% decrease in per capita GHG emissions from 2005 to 2020. This decrease would more than achieve the five percent emissions reduction target by 2020 for the region set by SB 375. By 2035, the 2018 RTP/SCS estimates 15.48 pounds per day for per capita GHG emissions from cars and light duty trucks. This represents a 14.15% decrease in per capita GHG emissions from 2005 to 2035. This decrease would meet and exceed the 10% emissions reduction target set by CARB for 2035. By meeting and exceeding the SB 375 targets for 2020 and 2035, the 2018

RTP/SCS is expected to fulfill and exceed its portion of SB 375 compliance with respect to meeting the State's GHG emission reduction goals. Therefore, the 2018 RTP/SCS would meet SB 375 GHG emission reduction targets and would result in a less than significant impact.

### *Level of Significance Before Mitigation*

Less than significant at the regional and TPA level.

### *Mitigation Measures*

None required.

### *Level of Significance After Mitigation*

Less than significant at the regional and TPA level.

**Table 4.6-7  
Results of Greenhouse Gas Emissions and Vehicle Trips Reductions**

<b>Indicators &amp; Measures</b>	<b>2017</b>	<b>2020</b>	<b>2035</b>	<b>2042</b>
Total Population	898,825	988,900	1,313,100	1,469,500
<b>Vehicle Miles Traveled (VMT)</b>				
VMT per Weekday (Miles, in Thousands)	22,933.84	25,111.83	32,770.28	35,299.39
VMT by Passenger Vehicles per Weekday (-XX, Miles, in Thousands)	14,775.00	16,434.54	22,472.37	25,021.00
Per Capita VMT (All Travel)	25.52	25.39	24.96	24.02
Per Capita VMT SB 375	16.44	16.62	17.11	17.03
Difference between 2005 Base Per Capita VMT (24.22 miles)	-32.13%	-31.38%	-29.34%	-29.70%
<b>SB 375 CO<sub>2</sub> Emissions</b>				
Total SB 375 CO <sub>2</sub> Emissions (tons/day)	7,025	7,661	10,162	11,323
Per Capita SB 375 CO <sub>2</sub> Emissions by Passenger Vehicles per Weekday (lbs)	15.63	15.49	15.48	15.41
Difference between 2005 Base Per Capita CO <sub>2</sub> (18.03 lbs Emfac2014) *	-13.30%	-14.06%	-14.15%	-14.53%
Adjusted CO <sub>2</sub> e Pounds Per Capita Reduction For Comparison with EMFAC11**	NA	-12.54%	-12.73%	-13.58%
SB 375 Targets (9/23/10)	NA	-5%	-10%	NA

Source: Kern COG, 2018 RTP

Notes:

\*Modeling for 2018 RTP uses Emfac2014. Results for 2005 differ between Emfac2011 and Emfac 2014.

\*\* Targets were developed using Emfac2011, adjustment base on difference between Emfac2011 and Emfac2014 for the same model runs.

#### 4.6.4 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. Consequently, the analysis above is a cumulative analysis, and no separate assessment of cumulative effects is needed.

## 4.7 LAND USE AND PLANNING

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This section addresses the current land uses in Kern County and evaluates the potential impacts of the 2018 RTP on existing land use and plans, identifies regional-scale mitigation measures and evaluates the residual impacts.

### 4.7.1 ENVIRONMENTAL SETTING

#### 4.7.1.1 Regional Setting

Kern County is comprised of 11 cities and unincorporated areas that total approximately 8,171 square miles. The County straddles 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 103.3 persons per square mile, compared to California as a whole, with 239.1 persons per square mile.<sup>1</sup> The County is comprised predominately 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 4.7-1, Kern County Land Uses**, shows the existing General Plan land use designations and **Table 4.7-1, Kern COG Land Uses**, summarizes the approximate percentages of each existing land use type. Each land use type is discussed in further detail below.

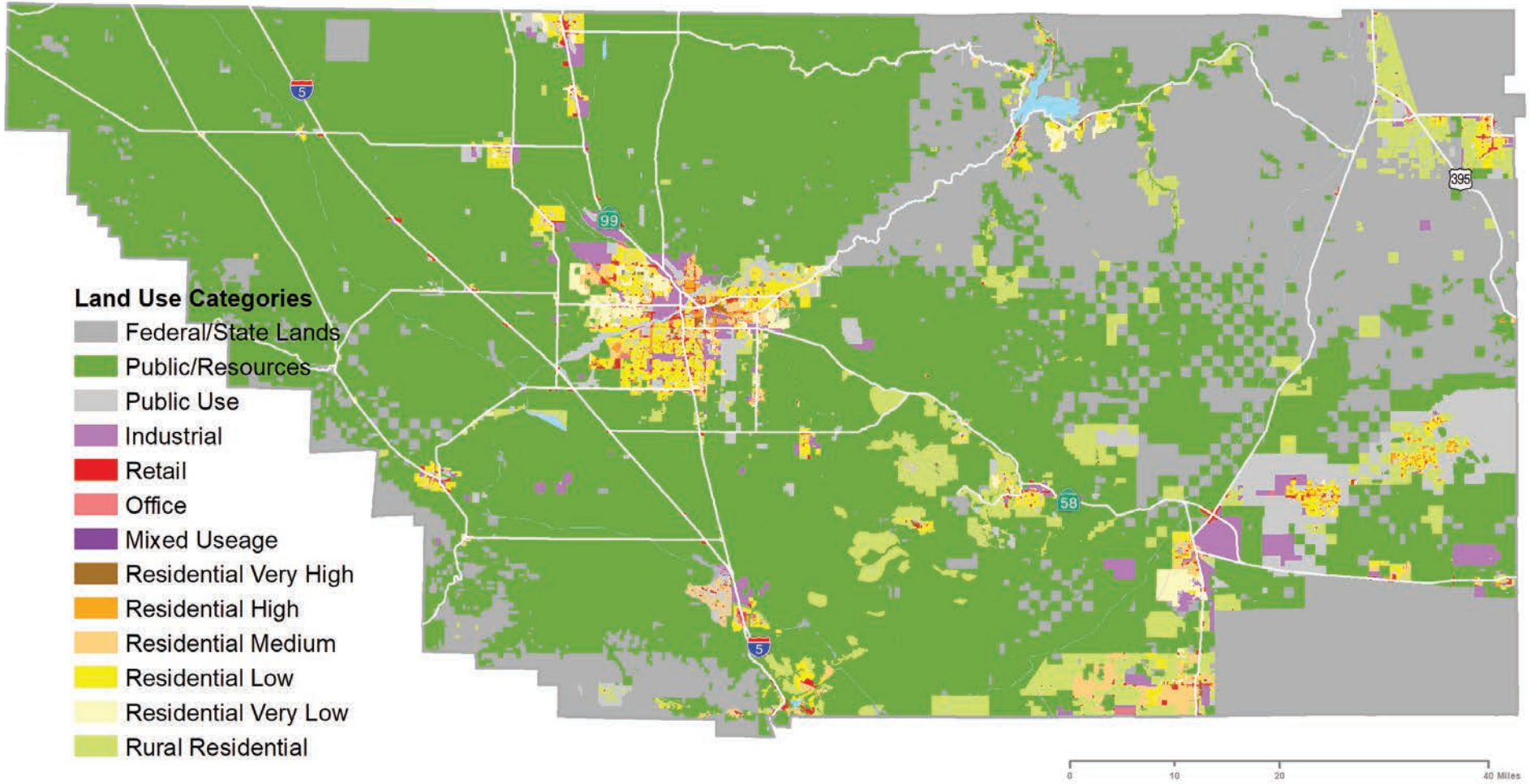
#### 4.7.1.2 Kern County Regions

##### *Kern Valley Region*

The Kern Valley Region, also known as the southern San Joaquin Valley area, includes a 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.

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<sup>1</sup> 2010 US Census, *State and County Quickfacts*, <https://www.census.gov/quickfacts/fact/table/US/PST045217>, accessed 2018.



SOURCE: Kern Council of Governments, 2018

FIGURE 4.7-1

Kern COG Land Uses



**Table 4.7-1  
Kern COG Land Uses**

<b>Land Use</b>	<b>Existing (acres)</b>
Federal and State	1,403,059.27
Industrial	81,652.64
Office	4,603.38
Public	163,956.53
Residential Very High	3,541.99
Residential High	14,580.43
Residential Medium	42,441.94
Residential Low	518,625.71
Residential Very Low	33,627.08
Rural Residential	246,335.78
Retail	26,818.70
Resource	3,118,946.49

*Source: Kern COG 2018 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.

#### **4.7.1.3 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 570,675 people over the lifetime of the Plan. As shown in **Table 4.7-1**, above, approximately 612,816 acres of land in Kern County is dedicated to non-rural 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)***

Residential rural areas of Kern County include approximately 246,336 acres. In 2016, land uses related to agriculture comprised over half of the approximately 5,224,314 acres of total land inventoried in Kern County. 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; the combination of these lands exceeds 880,100 acres. Additionally, Kern has more than 1.8 million acres of designated grazing land. From these lands, Kern County's agricultural revenues topped \$7 billion in 2016.<sup>2</sup> 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 in 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 connects 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 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 city streets.<sup>3</sup> 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.

#### **Rail**

Two major rail companies, Union Pacific (UP) and Burlington Northern Santa Fe (BNSF), 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. UP and CSX Transportation have teamed up to provide a food train service called UP Cold Connect, a refrigerated railcar and warehousing service, to

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<sup>2</sup> Kern County, *Annual Crop Report 2016*. 2017.

<sup>3</sup> Kern County General Plan 2040, Circulation Element.

offer perishable goods transportation from the San Joaquin Valley to New York. 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.<sup>4</sup>

### 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. In 2017–2018, public transit services carried more than 7.3 million passengers in Kern County.<sup>5</sup> 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—for good reason. Four of the five largest oil fields in California are located in Kern County and jobs in oil and gas extraction accounting for 3.1% of total employment.<sup>6</sup> **Figure 4.7-2, 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. However, Kern County still produced an estimated 134,114,693 barrels in 2016, representing more than 70 percent of statewide production. 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.

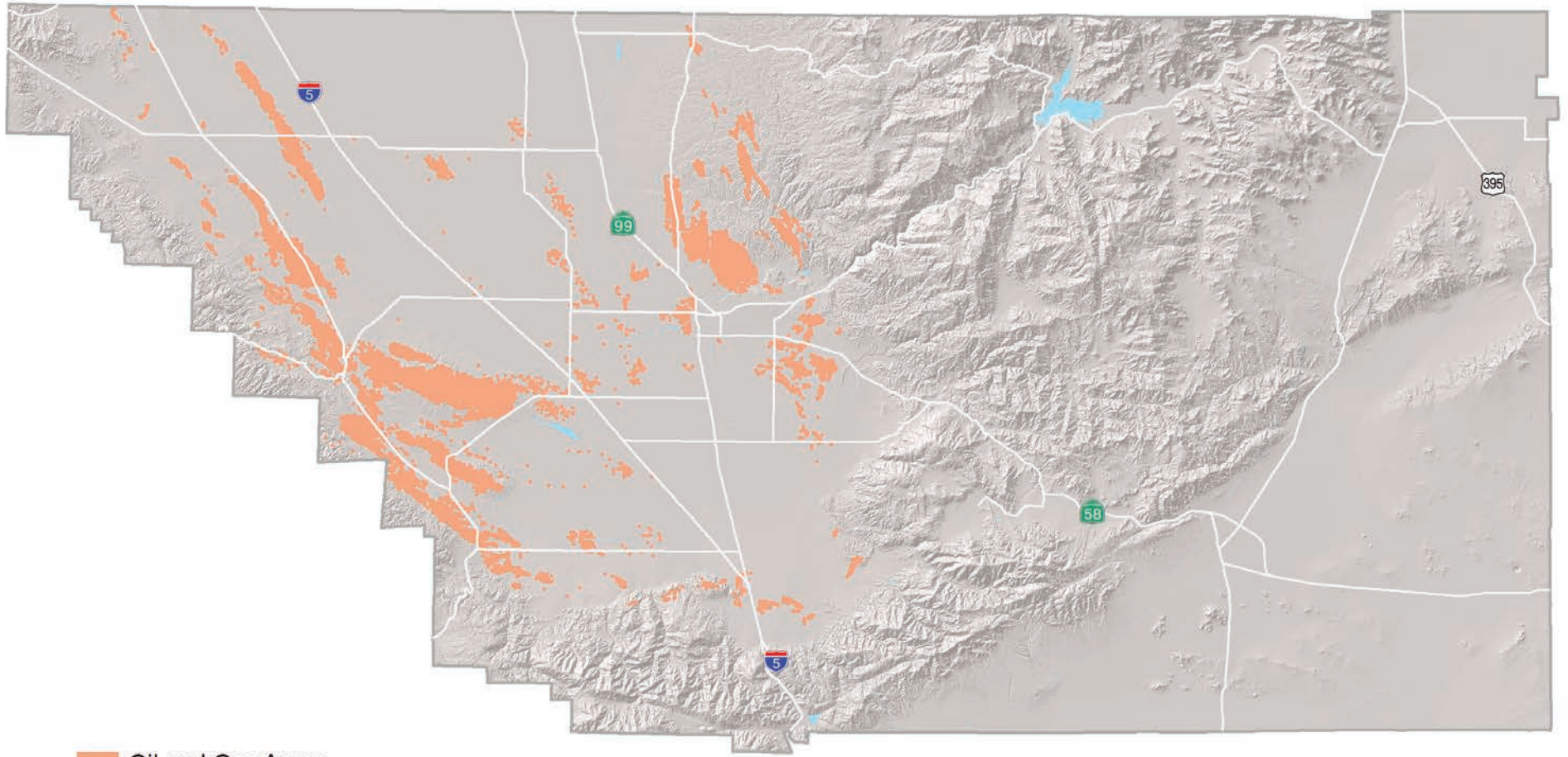
Various pipelines carry natural gas, crude oil, and other petroleum products throughout Kern County. Storage, pumping, and branch lines are used to distribute those products. Southern California Edison (SCE) and Pacific Gas and Electric Company (PG&E) are responsible for the maintenance and operation 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.

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<sup>4</sup> Genesee & Wyoming Inc., *San Joaquin Valley Railroad*, [https://www.gwrr.com/railroads/north\\_america/san\\_joaquin\\_valley\\_railroad#m\\_tab-one-panel](https://www.gwrr.com/railroads/north_america/san_joaquin_valley_railroad#m_tab-one-panel), accessed 2018.

<sup>5</sup> Kern COG 2018 RTP

<sup>6</sup> U.S. Department of the Interior (DOI). *Natural Resources Revenue Data*. 2017.



Oil and Gas Areas

0 10 20 40 Miles

SOURCE: California Department of Conservation, Division of Oil, Gas, & Geothermal Resources, 2018

FIGURE 4.7-2

# Oil and Gas Resources

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 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. The largest borax mining operation in the world is located at the east edge of the County next to Boron, employing 600 people in three shifts per day, seven days per week. An average of five trains per week transport the mineral to a bulk facility at the Port of Long Beach.<sup>7</sup>

### *Alternative Energy*

Kern's energy resources extend beyond the traditional—it also produces more renewable energy than any other county in the state and hosts one of the first wind farms. 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. As of November 1, 2017, Kern County had 49 wholesale wind facilities generating approximately 3,281 megawatts of power. **Figure 4.7-3, Kern County Wind Farms**, provides the location of wind farms in the County. More recently, Kern County has become a center for solar power, operating 88 solar PV projects, which generate a combined 2,395 megawatts of power. Additionally, there is a solar energy project, set to begin in 2019, that is anticipated to be California's largest and to provide 650 jobs to the region. Belridge Solar Thermal Power Plant is expected to produce 850 megawatts thermal of solar thermal generated by steam and 26.5 megawatts of electricity from a solar electric plant.<sup>8</sup>

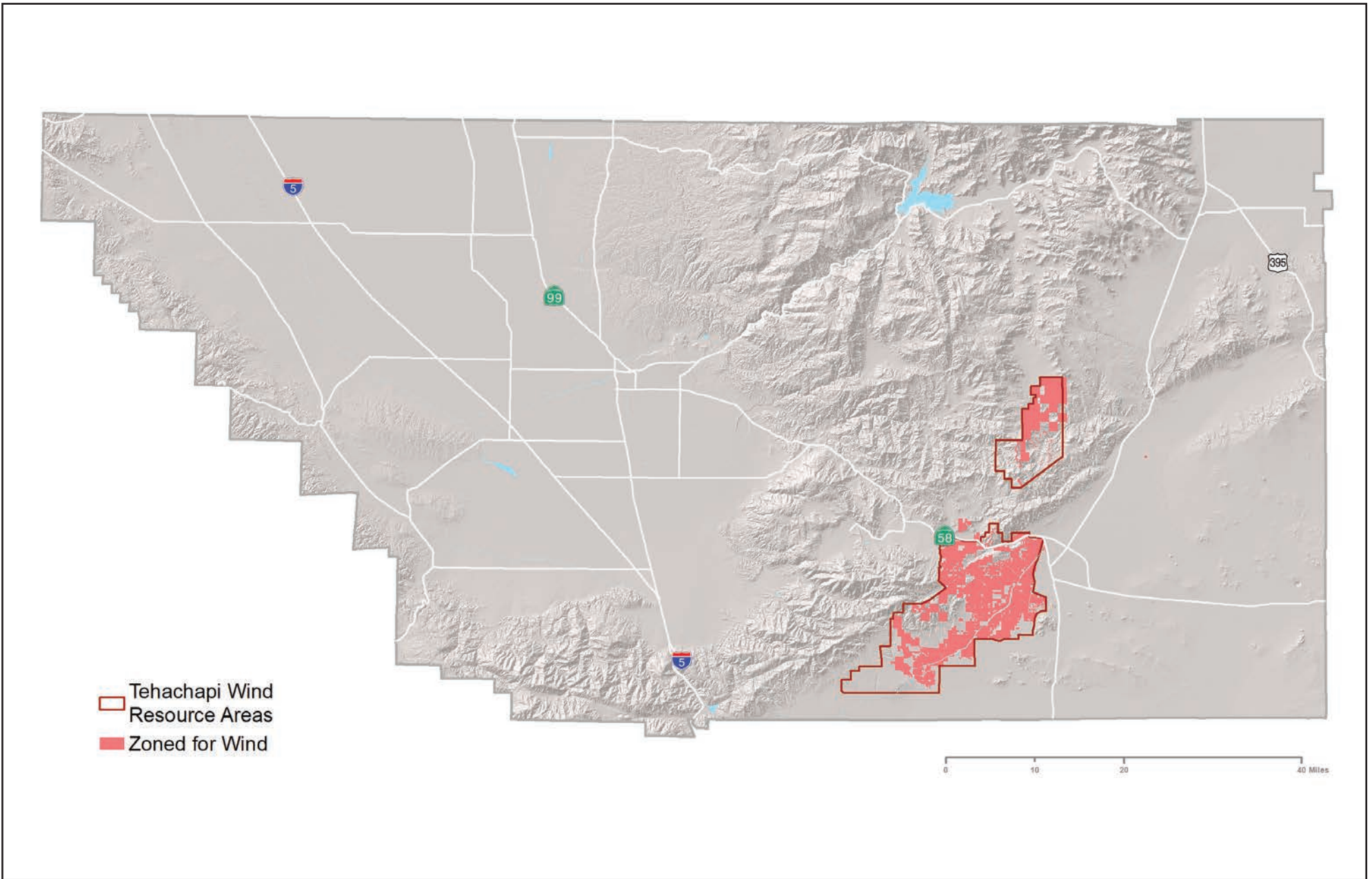
### *Military/Civilian Aerospace Testing Complex*

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.

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<sup>7</sup> Kern Council of Governments 2018 SCS

<sup>8</sup> California Energy Commission, *Tracking Progress*. 2018.



SOURCE: Kern County, 2018

FIGURE 4.7-3

## Kern County Wind Farms

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 more than 20,000 federal, state, and local inmates. There are a number of low and medium "community" correctional institutions located in urban areas. To manage these facilities, Kern County has almost 5,000 correctional officers and first-line supervisors who commute by auto and vanpool for each shift.

### ***Recreation/Tourism***

Kern County's diverse mix of mountains, lakes, valleys and deserts make it a significant destination for tourism. The desert areas attract over 10,000 off road vehicle enthusiasts each year. 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.

## **4.7.2 REGULATORY FRAMEWORK**

### **4.7.2.1 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 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 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.

***National Environmental Policy Act (42 U.S.C. § 4321 et seq.)***

The United States Environmental Protection Agency (USEPA) implements the National Environmental Policy Act (NEPA). NEPA provides information on expected environmental effects of federally funded projects. Impacts on land uses and conflicts with state, regional, or local plans and policies are among the considerations included in the regulations. The regulations also require that projects requiring NEPA review seek to avoid or minimize adverse effects of proposed actions and restore and enhance environmental quality as much as possible.

***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 right-of-ways 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 the 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 US 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***

The 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. 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.”<sup>9</sup>

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.

#### 4.7.2.2 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.*).

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.

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<sup>9</sup> 7 USC 4201-4209 & 7 USC 658

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 that MPOs 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.”

### ***Senate Bill 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.

Senate Bill 743 requires Office of Planning and Research (OPR) to develop revisions to the *State CEQA Guidelines* establishing criteria for determining the significance of transportation impacts of projects within transit priority areas that promote the “reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.” It also allows OPR to develop alternative metrics outside of transit priority areas. The statute provides that, upon certification and adoption of the revised *State CEQA Guidelines* by the Secretary of the Natural Resources Agency, “automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant” to CEQA. In other words, LOS generally shall not be used as a significance threshold under CEQA. Senate Bill 743 states that in developing alternative CEQA significance criteria for transportation, OPR can recommend potential metrics that include, but are not limited to, vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated. Senate Bill 743 requires OPR to circulate a draft of such criteria on or before July 1, 2014. These changes would need to be adopted by the Secretary of the Natural Resources Agency and are anticipated to be effective sometime in 2015.

### 4.7.2.3 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 **Section 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 creation of spheres of influence for cities, adjustments to boundaries of special districts, annexations, incorporations, detachments of areas from cities, and dissolutions of cities. The definition of a city’s sphere of influence is frequently an indication of the city’s ultimate boundaries. Since 1992, state law requires that incorporation of a new city must not financially harm the county and must result in a positive cash flow for the new city, a requirement that has slowed the rate of new city incorporation.

While planning documents of each of the cities in Kern County is 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, growth, and their associated 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, which the jurisdiction may have chosen to include. Required topics are land use, circulation, housing, conservation, open space, noise, and safety. Local governments frequently choose to address other topics, including public facilities, parks and recreation, community design, and growth management, among others. City and county general plans must be consistent with each other and County general plans must cover 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 for focused guidance for developing a specific area and contain development standards tailored to the area, as well as systematic implementation of the general plan.

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

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,

### **Metropolitan Bakersfield General Plan**

Jointly adopted the City of Bakersfield and the County of Kern, policies within the Metropolitan Bakersfield General Plan that are relevant to the 2018 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 which 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:
  - a) Downtown
  - b) California State University, Bakersfield
  - c) Bakersfield Airpark/Casa Loma
  - d) Meadows Field
  - e) Highway 58/Weedpatch Highway
  - f) Lamont
  - g) Greenfield
  - h) McAllister Ranch
  - i) Northwest Bakersfield
  - j) 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:



- a) Encourage focus on an open space amenity such as a park or water body;
  - b) Provide opportunity for the development of residential units above ground floor commercial;
  - c) Encourage land use link with the Kern River and promote pedestrian activity within 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:
    - a) Attempt to focus on open space amenities;
    - b) 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:
    - a) Attempt to focus on open space amenities;
    - b) Cluster development to take advantage of views;
    - c) Encourage development to preserve public views of foothill topography and sensitive habitats;
    - d) Provide the opportunity for the development of residential units above ground floor commercial;
    - e) 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:
    - a) Downtown
    - b) Baker Street
    - c) Southwest Center
    - d) Northwest Centers
    - e) Northeast Center
  - Provide for a mix of land uses which meets the diverse needs of residents; offers a variety of employment opportunities; capitalizes, enhances, and expands upon existing physical and economic assets; and allows for the capture of regional growth.
  - Accommodate new projects which 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:
  - a) The overall density and distribution of land uses is maintained;
  - b) 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;
  - c) Uses are sited to take advantage of pedestrian greenbelts, recreational amenities, and natural environmental resources;
  - d) 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 which involves in-fill of the urban area as opposed to development on the urban fringes shall be encouraged.

### ***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 operation 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 for 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 Council of Governments' (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 mile 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 in-filling 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.

## **4.7.3 ENVIRONMENTAL IMPACTS**

### **4.7.3.1 Thresholds of Significance**

For the purposes of this EIR, Kern COG has determined that adoption and/or implementation of the proposed 2018 RTP would result in significant impacts to the land use, if any of the following would occur:

- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- Physically divide an established community.

- Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan. (See **Impact BIO-6**)

### 4.7.3.3 Methodology

#### *Determination of Significance*

The methodology for determining the significance of land use impacts compares the existing conditions to future (2042) conditions, as required in CEQA Section 15126.2(a).

The 2018 RTP consists of a combination of transportation policies, objectives, investments, and, in accordance with the requirements of SB 375, an SCS, see **Section 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 **Section 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 2018 RTP growth totals. The No Project Alternative indicates the land use pattern that could be expected without implementation of the 2018 RTP. The 2042 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 2018 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 2018 RTP and market demand (within existing zoning) in order to model anticipated development in the year 2042. However, it will be up to individual jurisdictions to determine consistency of individual projects with the 2018 RTP (including the SB 375 goals). It is not the intent of the 2018 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 2018 RTP, while Kern COG prioritizes and facilitates these projects (and therefore has the ability to influence project selection), they 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 2042. 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 2018 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 of high quality transit areas (HQTAs) and 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 2018 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 implementation of the 2018 RTP. Indirect impacts from changes in land use patterns expected to occur due to the 2018 RTP transportation investments and land use policies are also identified.

### 4.7.3.3 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**                      **Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, or zoning ordinance) 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 2018 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 Transit Priority Areas (TPAs) and other opportunity areas resulting in more opportunity for transit-oriented development.

The SCS Strategy Maps included in the SCS have been developed by Kern COG staff and show both the place types reflecting forecasted development patterns and Kern COG modeling assumptions, and the planned transportation investments from the 2018 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 place types and transportation infrastructure that are existing, planned or proposed and have been grouped by Kern COG staff 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.

To develop these conceptual maps staff identified existing, planned and potential Transit Priority and Strategic Employment Place Types. Each agencies local general plan was used to identify the land uses where these types of developments were permitted. And local jurisdiction staff provided feedback on final placement of the place types locations.

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 2018 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.
- Promote land use patterns that support current and future investments in public transit and active transportation in all communities particularly in disadvantaged communities.
- Promote more compact and mixed-use centers along major transit corridors where appropriate to support more intense transit options such as Bus Rapid Transit, light rail and active transportation as areas become revitalized and in other transit ready areas.
- Support and enhance transit priority and strategic employment place types. These areas have a strong impact on transportation patterns as the major destinations. To make these places more transit-supportive, they should be enhanced by land use decisions that locate new and affordable housing and appropriately scaled retail and employment uses to diversify the mix, creating an environment that maximizes transportation choice in both Metro and outlying communities. Enhancement of these place types in outlying areas to create vibrant communities provides opportunities for employees to live closer to where they work, reducing overall travel.
- Encourage cities and the county 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.

The 2018 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 2018 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 2018 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 2018 RTP may not be current and may not reflect current planning policy or practice or latest local planning assumptions. In addition, the RTP’s 2042 horizon year is beyond the timeline of many of the general plans. Input from local governments was used to correct consistency issues.

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** would help to reduce conflicts with land use plans, policies, and regulations; however, impacts would remain potentially significant.

### *Level of Significance Before Mitigation*

Potentially significant at the regional and TPA levels.

### *Mitigation Measures*

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 2018 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.

- MM LU-1:** 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-2:** 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-3:** 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** 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.

**Impact LU-2                      Physically divide an established community.**

### *Regional and Transit Priority Area Impacts*

The 2018 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 track and expanded transit facilities for high-speed rail or Metrolink 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 under-crossings 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.

Kern COG used GIS data to analyze where major freeway, rail, and transit projects in the 2018 RTP intersect residential 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 2018 RTP to identify the number of acres potentially affected (air quality and noise impacts extend further and are addressed in Sections 4.3 Air Quality and 4.10 Noise). See **Table 4.7-2, 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 4,037 acres of residential land uses would be located within the 150-foot radius of transportation facilities in 2042 under the proposed Plan as compared to 2,953 acres under existing conditions, an increase of 1,084 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 new residence for displaced individuals. Nonetheless, impact would remain potentially significant.

**Table 4.7-2  
Affected Land Uses within 150 Feet of Transportation Facilities**

<b>Land Use</b>	<b>Existing (Acres)</b>	<b>2042 No Project (Acres)</b>	<b>2042 Plan (Acres)</b>
Residential High	364	429	444
Residential Medium	647	789	845
Residential Low	1,740	2,298	2,337
Residential Very Low	202	367	411
Retail	2,579	3,300	3,370
Resource	509	1,069	1,092
Federal and State	133	203	203
Industrial	1,194	1,931	2,094
Office	276	346	346
Public	1,093	1,373	1,377

*Source: Kern COG 2018*

### ***Level of Significance Before Mitigation***

Significant at the regional and TPA levels.

### ***Mitigation Measures***

See **Mitigation Measures MM LU-1** through **MM LU-3** and **MM POP-1**.

### ***Level of Significance After Mitigation***

Mitigation Measures **MM LU-1** through **MM LU-3** and **MM POP-1** would help to prevent the division of 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.

## **4.7.4 CUMULATIVE IMPACTS**

Implementation of the 2018 RTP would result in an increase in density and land use development over the next 24 years. By 2042, the region is anticipated to add an additional 570,675 people with or without the 2018 RTP. The improved accessibility from the 2018 RTP could help facilitate urbanization to 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-6** would reduce cumulative impacts; however, the impacts would remain significant.

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 2018 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.

### 4.8.1 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 4.8-1, 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.



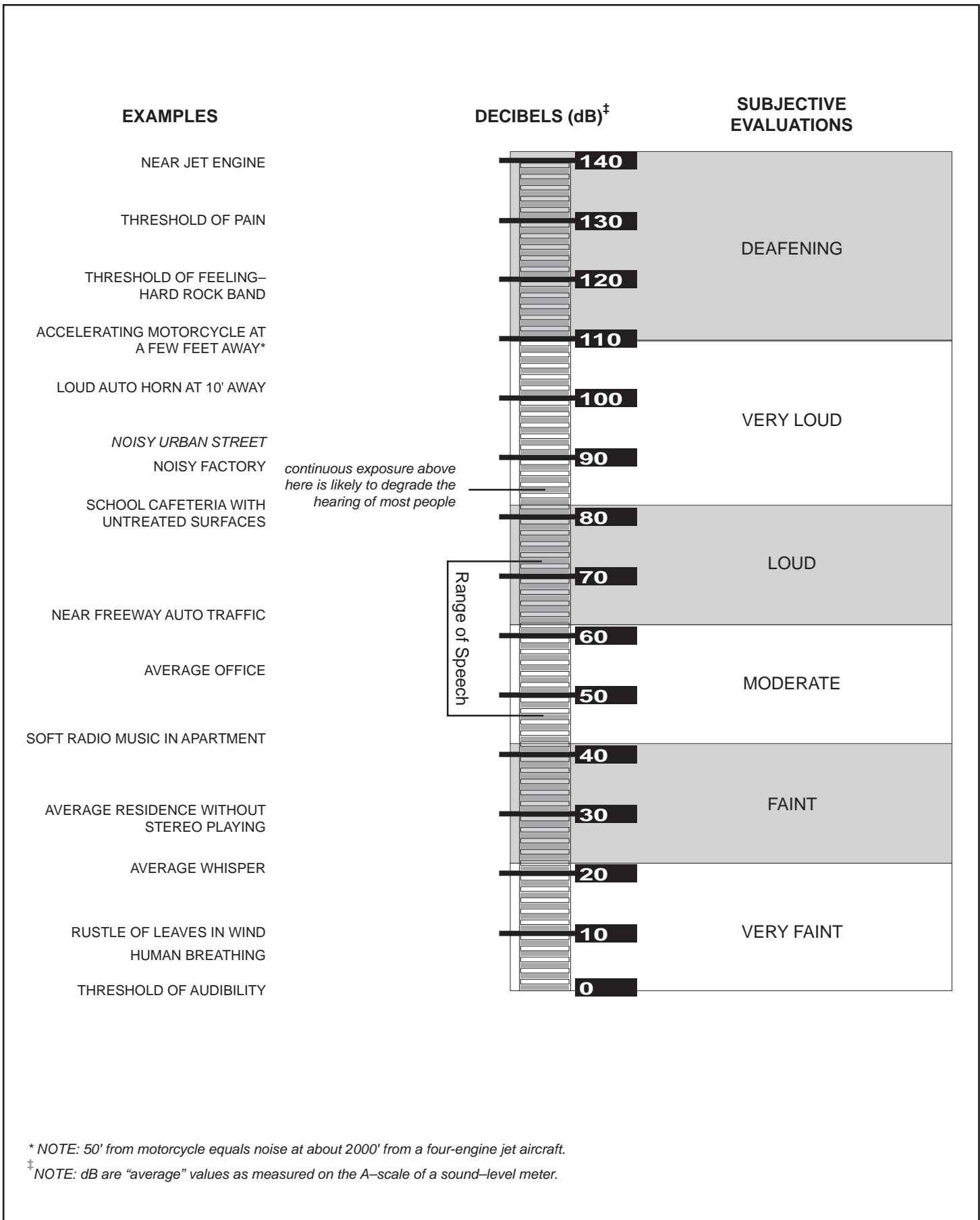
**Effects of Noise.** Noise is generally defined as unwanted sound. The degree to which noise can impact the human environment range from levels that interfere with speech and sleep (annoyance and nuisance) to levels that cause adverse health effects (hearing loss and psychological effects). Human response 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 levels. 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.

<sup>‡</sup> NOTE: dB are "average" values as measured on the A-scale of a sound-level meter.

SOURCE: Impact Sciences, Inc., January 2014

FIGURE 4.8-1

## 4.8.2 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 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 US 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 operation of mechanical equipment, 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 typically background vibration velocity, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

**Figure 4.8-2, Typical Levels of Groundborne Vibration**, identifies the typical groundborne vibration levels in VdB and human response to different levels of vibration.

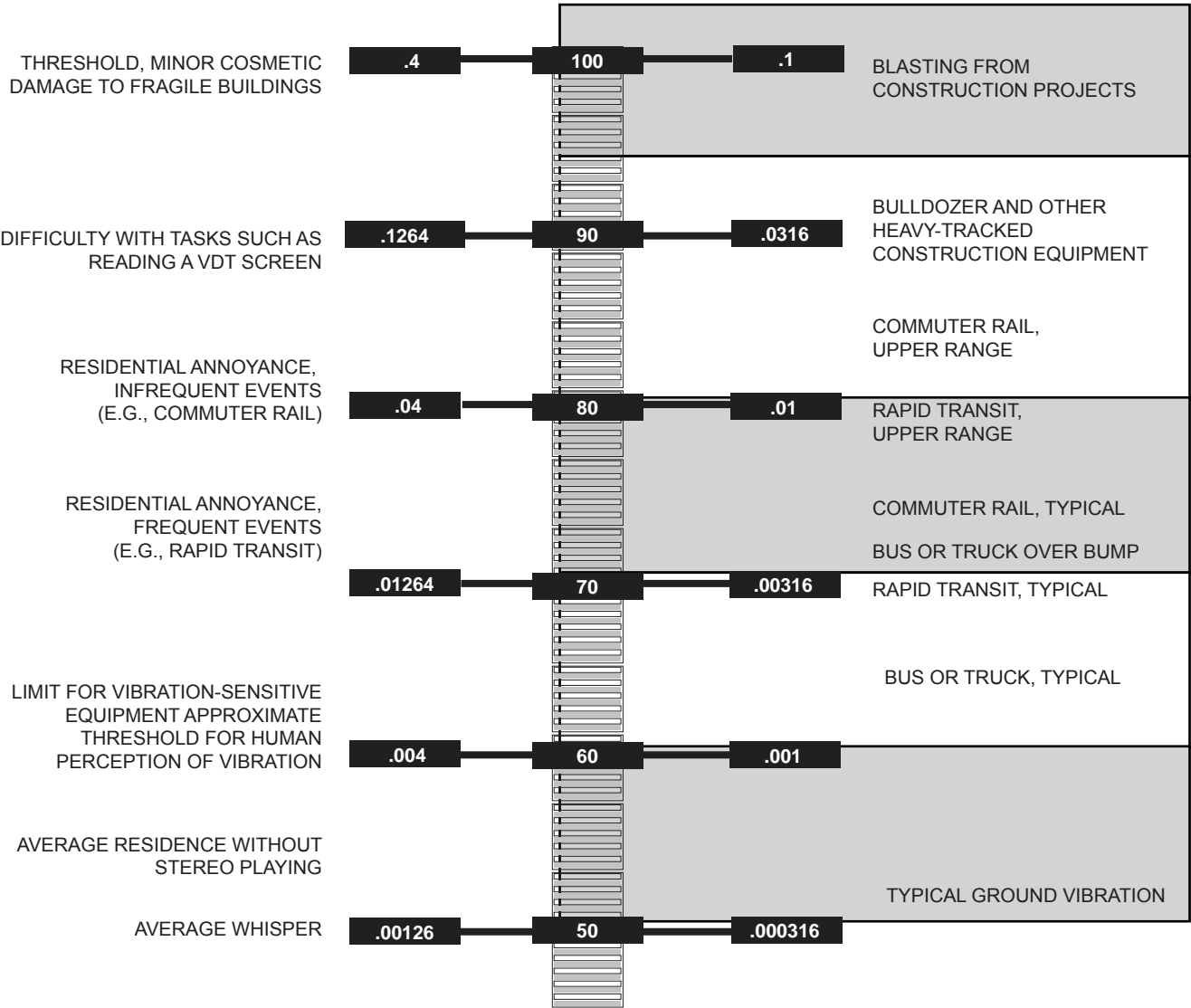
**Vibration Definitions.** There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings and is usually measured 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.<sup>1</sup>

**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

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<sup>1</sup> Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*. 2006.

HUMAN/STRUCTURAL RESPONSE	PPV AMPLITUDE IN INCHES <sup>1</sup> PER SECOND	VELOCITY LEVEL IN VdB	RMS VELOCITY AMPLITUDE IN <sup>2</sup> INCHES/SECOND	TYPICAL SOURCES 50 FEET FROM SOURCE
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<sup>1</sup> 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.

<sup>2</sup> 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  $1 \times 10^{-6}$  inches/second in the United States)

FIGURE 4.8-2

## 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 operation of mechanical equipment, movement of people, or 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.

### 4.8.3 ENVIRONMENTAL SETTING

#### 4.8.3.1 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).<sup>2</sup> The minimum attenuation of exterior to interior noise provided by typical structures in California is provided in **Table 4.8-1, 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.

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<sup>2</sup> US Department of Transportation, Federal Highway Administration, *Highway Noise Mitigation*, (Springfield, Virginia: US Department of Transportation, Federal Highway Administration, September 1980), p. 18.

**Table 4.8-1  
Outside to Inside Noise Attenuation (dB(A))**

<b>Building Type</b>	<b>Open Windows</b>	<b>Closed Windows</b>
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.<sup>3</sup>

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.<sup>4</sup>

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 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 de-acceleration or acceleration.

<sup>3</sup> Beranek, L. L. 1988. *Noise and Vibration Control* (pp. 182). New York: McGraw-Hill.

<sup>4</sup> 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 vicinities 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, use of air horns and crossing bell gates contribute to noise levels in the vicinity of grade crossings. **Table 4.8-2, 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, grade crossings, and topographic shielding.

**Table 4.8-2  
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 is a function 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).<sup>5</sup> 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 4.8-3, Exterior Noise Exposure Adjacent to Nearby Rail Lines**, provides the CNEL for several segments of both the UP and BNSF railroads.

**Table 4.8-3**  
**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.	464	1,000
	(within 1,000 feet of grade crossings)	(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.

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.

<sup>5</sup> Two of the major railroads that historically have been associated with California, the Southern Pacific Railroad and the Atchison, Topeka and Santa Fe Railway, have merged into other railroad companies. In 1995, the Atchison Topeka and Santa Fe Railway merged with Burlington Northern to become Burlington Northern Santa Fe Railway. In the following year, the Southern Pacific Railroad merged with Union Pacific Railroad with the merged company retaining the Union Pacific name.

### ***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 are 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 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 4.8-4, 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 4.8-4  
Demolition and Construction of Equipment Source Noise Levels**

Equipment	Levels in dB(A) at 50 feet
Front Loader	73-86
Trucks	82-95
Cranes (Moveable)	75-88
Cranes (Derrick)	86-89
Vibrator	68-82
Saws	77-82
Pneumatic Impact Equipment	83-88
Jackhammers	81-98
Pumps	68-72
Generators	71-83
Compressors	75-87
Concrete Mixers	75-88
Concrete Pumps	81-85
Back Hoe	73-85
Pile Driving (Peaks)	95-107
Tractor	77-98
Scraper/Grader	80-93
Paver	85-88

*Source: US Environmental Protection Agency, Noise From Construction Equipment and Operations, Building Equipment and Home Appliances, PB 206717, 1971.*

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 the

California Environmental Quality Act (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 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 requires 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 5,000 installed turbines.<sup>6</sup> 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.

#### **4.8.3.2 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.

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<sup>6</sup> Kern County, *Economic Development Cluster, Energy and Natural Resources*.  
<https://www.kerncounty.com/econdev/ClusterEnergy.aspx>, accessed 2018.

As shown in **Table 4.8-5, Vibration Levels Associated with Construction Equipment**, the highest impact is associated with the heaviest equipment, such as pile drivers or large bulldozers, can generate vibrations of 1.518 to 0.089 inches per second PPV at a distance of 25 feet.

**Table 4.8-5  
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.*

### 4.8.3.3 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 dBA 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.

#### **4.8.4 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.

##### **4.8.4.1 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 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 which significantly changes either the horizontal or vertical alignment, or increases the number of through-traffic lanes. A Type II project is a noise barrier retrofit project that involves no changes to highway capacity or alignment.

Type I projects include those that create a completely new noise source, 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 an existing ramp by a full lane width for its entire length. Projects unrelated to increased noise levels, such as striping, lighting, signing, and landscaping projects, are not considered Type I projects.

Under 23 CFR § 772.11, noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact. In such cases, 23 CFR § 772 requires that the project sponsor “consider” noise abatement before adoption of the environmental document. This process involves identification of noise abatement measures that are reasonable, feasible, and likely to be incorporated into the project, 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 4.8-6, 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 4.8-6  
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.<sup>7</sup> The levels are shown in **Table 4.8-7 Construction Vibration Damage Criteria**.

**Table 4.8-7  
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.*

#### 4.8.4.2 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.

<sup>7</sup> Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*, May.

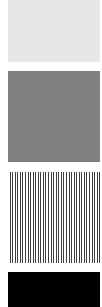
*California Department of Health Services Land Use Guidelines for Community Noise Exposure*

The state has published guidance for locating land uses in areas compatible with the existing noise environment. These guidelines are shown in **Table 4.8-8, 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.

**Table 4.8-8  
Land Use Compatibility for Community Noise Environments**

Land Use Category	Community Noise Exposure (dB(A), CNEL)							
	50	55	60	65	70	75	80	85
Residential - Low Density Single-Family, Duplex, Mobile Homes	Light Gray		Dark Gray		Hatched		Black	
Residential - Multi-Family	Light Gray		Dark Gray		Hatched		Black	
Transient Lodging - Motels Hotels	Light Gray		Dark Gray		Hatched		Black	
Schools, Libraries, Churches, Hospitals, Nursing Homes	Light Gray		Dark Gray		Hatched		Black	
Auditoriums, Concert Halls, Amphitheaters	Light Gray		Dark Gray		Hatched		Black	
Sports Arena, Outdoor Spectator Sports	Light Gray		Dark Gray		Hatched		Black	
Playgrounds, Neighborhood Parks	Light Gray		Dark Gray		Hatched		Black	
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Light Gray		Dark Gray		Hatched		Black	
Office Buildings, Business Commercial and Professional	Light Gray		Dark Gray		Hatched		Black	

Land Use Category	Community Noise Exposure (dB(A), CNEL)							
	50	55	60	65	70	75	80	85
Industrial, Manufacturing, Utilities, Agriculture								



**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 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.

### ***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.

#### **4.8.4.3 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 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 4.8-9** (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.

**Table 4.8-9  
City of Bakersfield General Plan, Noise Level Performance Standards\*  
Exterior Noise Level Standards**

<b>Category</b>	<b>Cumulative Number of Minutes in Any 1-Hour Period</b>	<b>Daytime 7:00 AM to 10:00 PM</b>	<b>Nighttime 10:00 PM to 7:00 AM</b>
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.*

- 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.

### ***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 within 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 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 supports other efforts in the County.

### ***Local Vibration Regulations***

Many jurisdictions do not regulate vibration. But some local jurisdictions regulate vibration through enforcement of local ordinance standards. These standards generally relate to preventing perceptible vibration from being generated past the property line of the source location.

## **4.8.5 ENVIRONMENTAL IMPACTS**

### **4.8.5.1 Thresholds of Significance**

For the purposes of this PEIR, Kern COG has determined that adoption and/or implementation of the 2018 RTP would result in significant impacts related to noise and vibration, if either of the following could occur:

- Expose persons or generate noise in levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; and/or result in a substantial temporary or periodic increase in ambient noise levels above levels existing without the project; and/or result in a substantial permanent increase in ambient noise levels above levels existing without the project.
- Expose people to or generate excessive groundborne vibration.
- Exposure of people residing or working in the project area to excessive noise levels if the project is located within an area covered by an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport.
- 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.

### **4.8.5.2 Methodology**

The analysis assesses the potential impacts from noise and vibration that could result from implementation of the proposed 2018 RTP. For each potential impact, implementation of the proposed 2018 RTP is analyzed at the regional level.

Impacts are assessed in terms of both land use and transportation impacts. By 2042, implementation of the proposed 2018 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 dBA is considered a significant impact. In general an increase of 3 dBA is perceptible to the average human ear. In order to assess where noise levels could increase by 3 dBA 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 2042 under the 2018 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 2042, 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.

### 4.8.5.3 Impacts and Mitigation Measures

**Impact NOISE-1** Expose persons or generate noise in levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; and/or result in a substantial temporary or periodic increase in ambient noise levels above levels existing without the project; and/or result in a substantial permanent increase in ambient noise levels above levels existing without the project.

#### *Regional 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 2018 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 4.8-10, Sensitive Receptors within 0.25 mile of Proposed 2018 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 2018 RTP.

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**Table 4.8-10**  
**Sensitive Receptors within 0.25 Mile of Proposed 2018 RTP Projects**

Sensitive Receptors	No Project (2042)	2018 RTP (2042)
Schools	0	0
Hospitals	4	17
Residential (households)	5,471	40,805

*Source: Kern COG GIS 2018*

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As shown in **Table 4.8-10**, a number of noise-sensitive land uses are located near 2018 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 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.

**Table 4.8-11, 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 4.8-12, Outdoor Construction Noise Levels,** shows typical noise from construction of development projects; the variety and duration of development projects is 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 4.8-11  
Types and Duration of Construction Noise Generated from Transportation Projects**

Project Type	Noise Levels			Duration		
	High	Medium	Low	Extended	Medium	Short
<b>FREEWAYS AND ARTERIALS</b>						
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

Project Type	Noise Levels			Duration		
	High	Medium	Low	Extended	Medium	Short
<b>Transit</b>						
Passenger Rail	X			X		
High Speed Rail	X			X		
Inter-city Rail	X			X		
Rail Improvement	X			X		
Rail Yard Expansion	X			X		

Source: Kern COG 2018

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 noisiest 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 4.8-4 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.

Source: Impact Sciences, 2018

**Table 4.8-12:  
Outdoor Construction Noise Levels**

Construction Phase	Noise Level at 50 Feet (dBA, Leq)	Noise Level at 50 Feet with Mufflers (dBA, Leq)
Ground Clearing	84	82
Grading/Excavation	89	86
Foundations	78	77
Structural	85	83
Finishing	89	86

Source: USEPA, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, PB 206717, 1971.

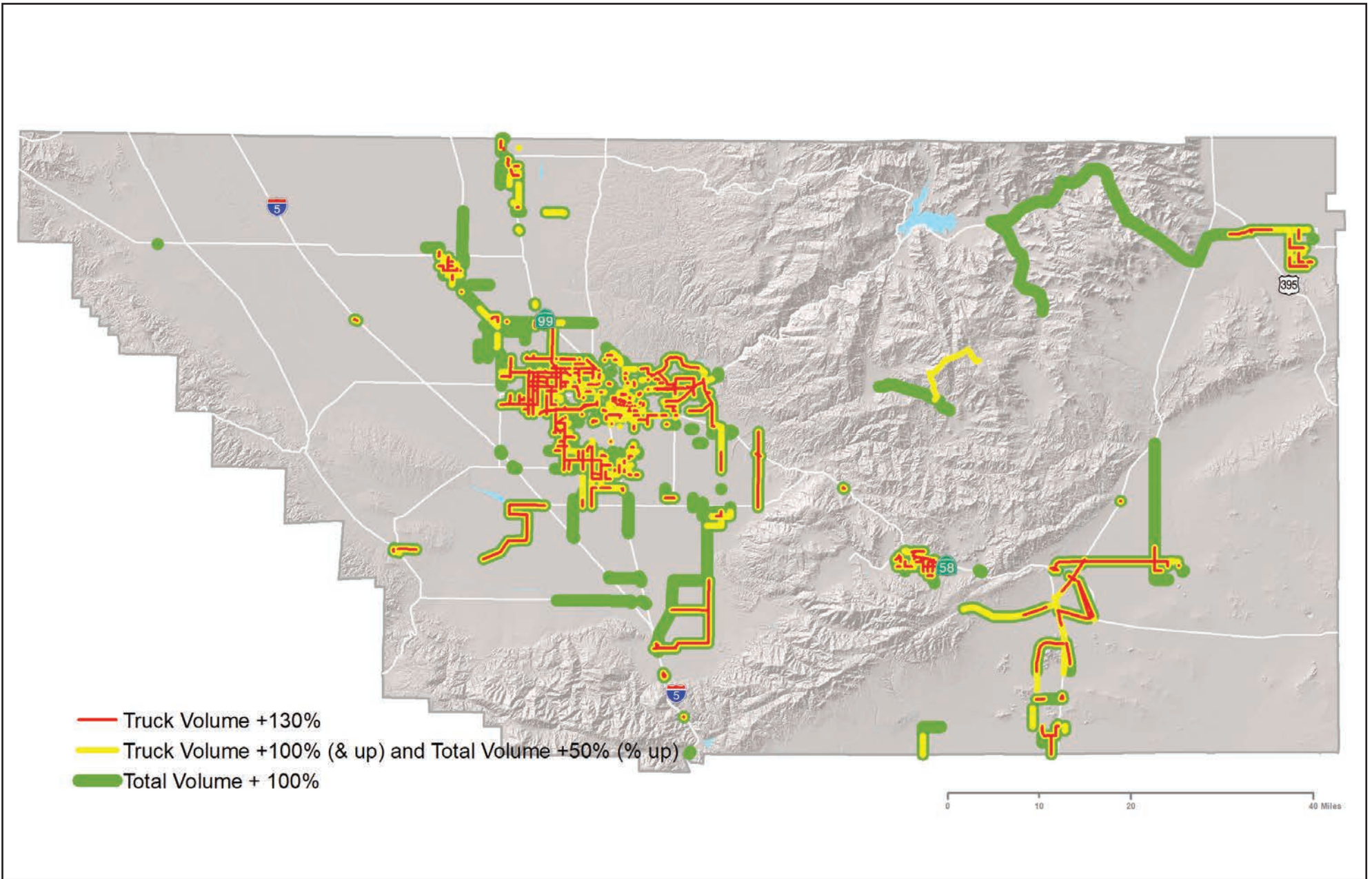
Construction noise is expected in urban areas. It generally results in substantial increases in noise adjacent to where construction is occurring, but this activity is generally intermittent, of finite duration and regulated by existing ordinances. Determination of significance of construction noise 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, 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 criterion (see **Table 4.8-6** 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 travelled roadways meet this criterion. 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 locations where one or more of the following criteria are met are identified in **Figures 4.8-3** (No Project) and **4.8-4** (2018 RTP):

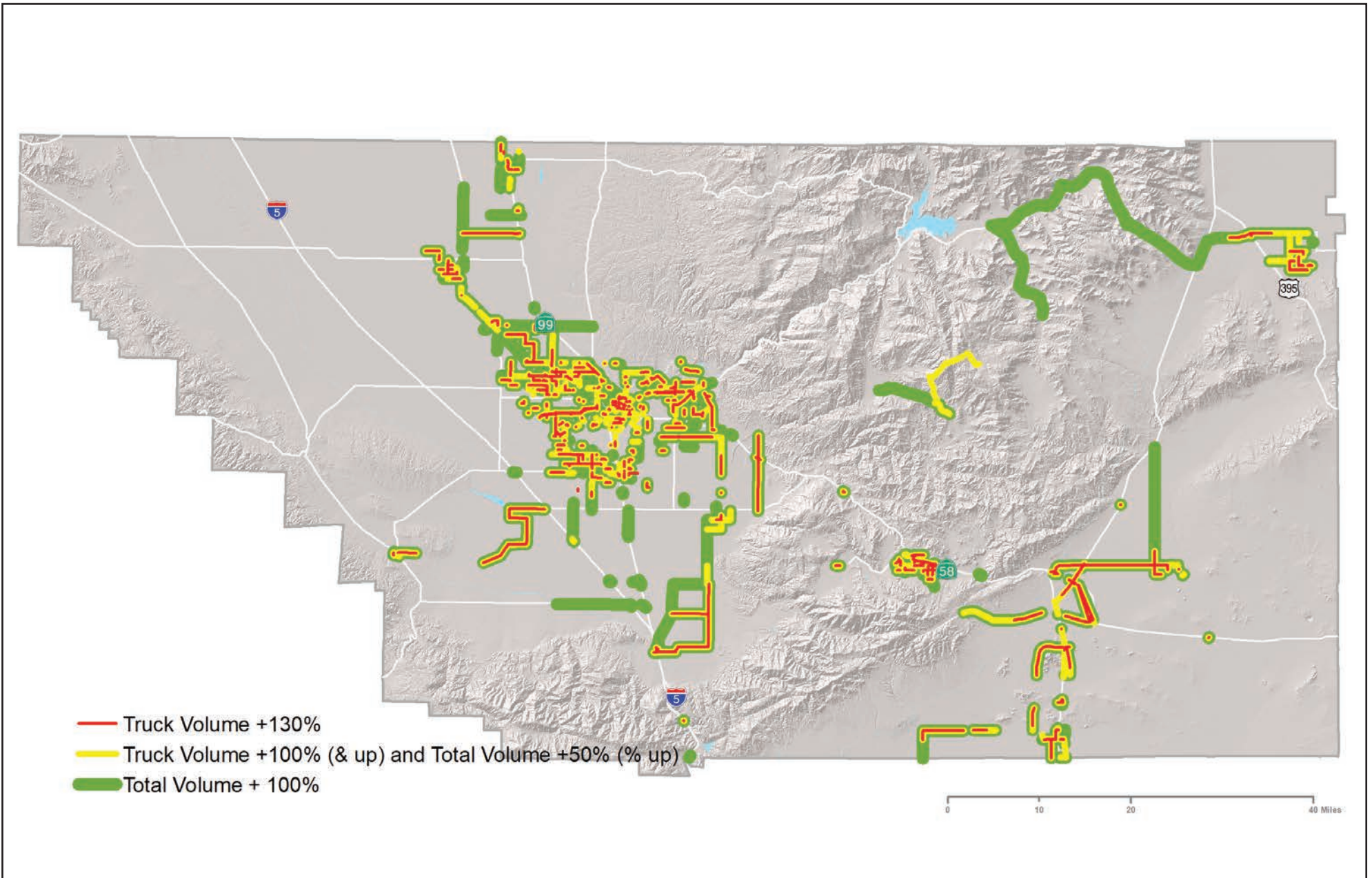
1. Truck (medium and heavy-duty) volume is anticipated to increase 130 percent from existing conditions.
2. Truck (medium and heavy-duty) volume is anticipated to increase by 100 percent with an increase in other vehicles of 50 percent.
3. Total traffic volume would increase by 100 percent.



SOURCE: Kern Council of Governments, 2018

FIGURE 4.8-3

Substantial Increases in Roadway Noise - No Project Alternative (2042)



SOURCE: Kern Council of Governments, 2018

FIGURE 4.8-4

Substantial Increases in Roadway Noise - 2018 RTP (2042)



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 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 would significantly increase noise related traffic congestion on routes that are currently low volume. Likely resulting in a greater impact than 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.

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 dBA 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 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.

### ***Transit Priority Areas***

TPAs generally include portions of the County already developed with urban uses. Projects included in the 2018 RTP will focus development in these areas, including transit infrastructure and development. This focused development would increase construction and operational noise levels in the surrounding area. Similar to the regional impacts, construction related noise impacts would be short-term and would be required to comply with local ordinances. Projects with identified long-term operational impacts would be subject to environmental review before construction activities begin. Nonetheless, as discussed

above for regional impacts, increased exposure of people to substantially increased noise levels would occur and therefore exposure of sensitive receptors to substantially increased noise levels as a result the 2018 RTP is considered significant for **Impact NOISE-1**. Mitigation is required; see **Mitigation Measures MM NOISE-1** and **MM NOISE-2** below.

### *Level of Significance Before Mitigation*

Potentially significant at the regional and TPA levels.

### *Mitigation Measures*

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 2018 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.

**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 Expose people to or generate excessive groundborne vibration.**

***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 4.8-13, Vibration Source Levels for Construction Equipment**.

**Table 4.8-13  
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 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 a 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 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.

### **Transit**

The 2018 RTP includes investments in freight rail, and the eventual implementation of high-speed rail. This plan lays out an investment strategy of incremental speed and capacity improvements to existing Amtrak, Metrolink, 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 extension 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 2018 RTP are considered significant at the regional level for **Impact NOISE-2**. Mitigation is required; **Mitigation Measure MM NOISE-1** would also address vibration.

### *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**      **Exposure of people residing or working in the project area to excessive noise levels if the project is located within an area covered by 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**

**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.**

### ***Regional and Transit Priority Areas Impacts***

Some land use projects under the 2018 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 2018 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.

## **4.8.6 CUMULATIVE IMPACTS**

The 2018 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 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 2018 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 2018 RTP encompasses all development (both transportation and land use changes) that would occur in the region through 2042. The impacts of anticipated development are discussed fully above; the 2018 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.

## 4.9 POPULATION, HOUSING, AND EMPLOYMENT

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This section describes the current population, housing, and employment for Kern County and identifies the potential impacts of the 2018 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.

### 4.9.1 ENVIRONMENTAL SETTING

#### 4.9.1.1 Existing Population, Housing, and Employment

##### *Population*

As of 2018, the population in Kern County was estimated to be 905,801 persons.<sup>1,2</sup> Between the 2000 and 2010 census, the population of Kern County grew by 27 percent, making it the third fastest growing county in California.<sup>3,4</sup> Kern has recently surpassed San Francisco and Ventura counties in total population and is now the eleventh most populated in the state.<sup>5</sup> The DOF estimates that population in Kern County increased at an average annual compounded rate of 1 percent between 2011 and 2018, similar to the rate for California as a whole. As of July 2017, net migration over the past year was 3,363 and new growth due to natural increase (births minus deaths) was 7,540. This is a significant increase over 2016 when net migration was negative.<sup>6</sup> The recent up-tick in growth may reflect a long anticipated boom in millennials entering the housing market and starting families. This plan forecasts that between

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<sup>1</sup> California Department of Finance (DOF), 2018. *E-1 Population Estimates for Cities, Counties, and the State- January 1, 2017 and 2018*.

<sup>2</sup> DOF released the January 1, 2018 and revised 2017 estimates in early May 2018 (approximately 2 weeks prior to release of the Draft EIR). The new population estimate was 1/4 percent higher than would be estimated by using the DOF forecast and interpolating from the July 1, 2017 base year data used for modeling. This higher than anticipated growth supports the higher Kern COG adopted growth forecast assumption when compared to the most recent DOF adopted forecast.

<sup>3</sup> California Department of Finance (DOF). 2017. *E-4 Population Estimates for Cities, Counties, and the State- 2001-2010, with 2000 & 2010 Census Counts*. <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-4/2001-10/>

<sup>4</sup> Kern COG 2018

<sup>5</sup> California Department of Finance (DOF). 2017. *E-1 Population Estimates for Cities, Counties, and the State- January 1, 2016 and 2017*.

<sup>6</sup> California Department of Finance (DOF). 2018. *E-2 California County Population Estimates and Components of Change by Year – July 1, 2010 – 2017*. <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-2/index.html>

2018 and 2042 population growth will continue to accelerate, growing at an average rate of 1.9 percent per year. However, down from the historic growth rate of 2.1 percent since 1980.<sup>7</sup>

Over the next 26 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 plans within Kern County designate sufficient land to absorb growth at twice the rate forecasted by 2042, assuming water and urban services are available. At current growth rates, Kern’s population will grow by 64 percent within the life of the 2018 RTP.<sup>8</sup>

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. At some point, it is anticipated that significant spillover from the Southland will be felt first in the Rosamond and Frazier Park areas. Centennial - a new proposed community of 19,333 housing units and 7,363,818 square feet of business park uses on Tejon Ranch in northern Los Angeles County - may siphon some of the anticipated growth from southern Kern; however, this project could also induce additional growth in the Frazier Park area as well. The most recent forecast assumes that growth’s positive and negative factors are growing closer to ultimately canceling each other out.

### ***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, government work, and wholesale/retail trade, consistent with historic data.<sup>9</sup> From 2016 – 2017 the unemployment rate dropped below double digits for the 9<sup>th</sup> time in the past 27 years to 9.2 percent.<sup>10</sup>

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<sup>7</sup> Kern COG. 2018. *2018 RTP/SCS, Table 3-5: Growth Trends for Kern County and Selected Communities*. p. 3-10.

<sup>8</sup> Ibid.

<sup>9</sup> California Employment Development Department. 2017. *Labor Market Information, Bakersfield MSA, Industry Employment & Labor Information – by Annual Average March 2017 Benchmark*. And Kern COG 2018

<sup>10</sup> Ibid.

The jobs/housing balance, which has historically fluctuated between 1.1 and 1.3 jobs per household, is anticipated to continue to vary based on several factors.<sup>11</sup> First, fluctuations in the number of out-of-county commuter households affect the jobs housing balance. Second, when employment levels do not keep up with baby booms, the jobs housing balance goes down as unemployment goes up and/or out-migration increases. The third factor affecting the jobs housing balance is Kern's latent supply of second homes in the mountain communities. As the baby boomers retire, there is expected to be an increase in households supported by a pension or retirement savings rather than a job in the region. Over the long term, the jobs/housing balance is expected to settle down to 1.1 jobs per household.

### ***Housing***

Nearly 46,000 housing units were added between 2000 and 2010.<sup>12</sup> By 2016, the housing stock in the Kern region was 291,292 units. Population growth exceeded household growth, and the average persons per household increased from 3.03 in 2000 to 3.15 in 2016.<sup>13</sup> This was in sharp contrast to a decade-to-decade drop in household size experienced by the nation overall.<sup>14</sup>

Following the national trend, the percentage of housing considered crowded (1.5 or more occupants per room) decreased in the Kern region from 2010-2016, as the recession subsided. In 2012, approximately 10 percent of households lived in crowded housing, up from 9 percent from 2000-2010.<sup>15</sup> Of the largest metropolitan areas, Kern still maintains the most affordable housing stock in California; however, high unemployment and relatively low-paying jobs appear to be fueling an increase in overcrowded conditions.

In 2015, 3.7 percent of the population of Kern County resided in group quarters. A large cause of this growth is the opening and expansion of prison facilities, nursing homes, and dormitories. It is expected that the population living in group quarters will decline over the lifetime of the plan and is estimated to be approximately 2.9 percent in 2042.<sup>16</sup>

### **Housing Preference**

Housing trends and housing preferences in the region were evaluated by a number of sources to inform the 2018 RTP and SCS scenarios. Several studies indicate that past trends which lean toward single-family

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<sup>11</sup> California Department of Finance (DOF). 2017. *E-1 Population Estimates for Cities, Counties, and the State- January 1, 2016 and 2017*. And Kern COG 2018

<sup>12</sup> Kern COG. 2018. *2018 RTP/SCS*.

<sup>13</sup> US Census. 2017. *American FactFinder Community Facts- Kern County*.

<sup>14</sup> Ibid.

<sup>15</sup> County of Kern. 2016. *2015-2023 Housing Element Update*.

<sup>16</sup> Kern Council of Governments. 2018. *2018 RTP/SCS*.

large lot homes have resulted in an under representation of higher density types of housing, such as condominiums, townhomes that are preferred by renters.<sup>17</sup> The 2017 Community Survey, administered by Kern COG, on this concept finds (based on consumer preference data and economic trends) that demand for apartments, townhomes, and small-lot single-family homes in walkable neighborhoods will grow in the Kern COG region.<sup>18</sup> **Table 4.9-1, Housing Option Preferences**, presents the results of the Kern COG 2017 Community Survey.

**Table 4.9-1  
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	2017	40.4	36.4	20.9	2.3
Home with a small yard	2015	32.0	31.2	35.8	1.0
	2014	40.6	33.1	25.3	N/A
	2017	56.5	23.8	17.4	1.0
Single family home with a large yard	2015	52.4	20.2	25.9	1.5
	2014	64.2	17.0	18.0	0.8
	2017	11.1	32.0	53.4	3.6
Townhome or Condominium	2015	11.0	24.8	62.7	1.5
	2014	13.9	25.9	58.3	1.9
A building with offices on the first floor and condominiums on upper floors	2017	6.8	14.0	74.6	4.6
	2015	7.1	9.7	82.1	1.1
	2014	7.9	12.0	77.7	N/A
	2017	9.2	21.8	66.3	2.6
An apartment	2015	9.9	12.4	76.4	1.3
	2014	13.5	16.4	69.0	1.1

Source: Godbe Research, 2017 [http://www.kerncog.org/wp-content/uploads/2009/11/community\\_survey\\_2017.pdf](http://www.kerncog.org/wp-content/uploads/2009/11/community_survey_2017.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

<sup>17</sup> The Concord Group, Market Demand Analysis for Higher Density Housing. 2012.

<http://www.valleyblueprint.org/files/11245.00%20FCOG-SJV%20Demand%20Final%20Draft%206.22.12.pdf>

<sup>18</sup> Godbe Research. 2017. *Kern Council of Governments: 2017 Community Survey*.

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 80 percent of new housing has been built on the west side, with approximately 40 percent north of the Kern River and another 40 percent in the southwest. The northeast has begun to see activity with completion of a water delivery system.

Around 2035, an increase in population growth in Southeast Kern is expected to begin to absorb spillover from the Palmdale/Lancaster market area.<sup>19</sup> This coincides with a planned Metrolink station in Rosamond and potential completion of a high-speed rail station in Palmdale. This growth is anticipated to pull some of the demand for housing in other areas of the County, consistent with existing long term forecasts.

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 County, most commute to Los Angeles County from communities along the southern edge of the County, such as Rosamond, Tehachapi, and Frazier Park. However, more commuters live in Los Angeles County and work in Kern than the reverse. Most of the imported workers commute to Edwards AFB, Kern's largest employer with more than 10,000 jobs.<sup>20</sup>

Much of Kern's employment is dispersed. 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 created a centrifugal force on Metropolitan Bakersfield's housing development where purchasing housing on the urban fringe often reduces a commuter's trip, even though it may increase trip lengths for other purposes such as shopping and services. For those working in the metropolitan area, growth in the suburban areas may also be fueled by the attractiveness of newer and perceived better schools. This centrifugal growth has fueled the conversion of farmland on the west side of metropolitan Bakersfield. It also creates hotspots of traffic congestion in peripheral areas where 2-lane highways and 4-way stops have difficulty handling peak period traffic.

**Table 4.9-2, Growth Trends for Kern County and Cities**, provides anticipated population and housing forecasts distribution for the county and its incorporated cities through 2042.

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<sup>19</sup> Kern Council of Governments. 2018. *2018 RTP/SCS*.

<sup>20</sup> Ibid.

**Table 4.9-2**  
**Growth Trends for Kern County and Cities**

Region	Year	Census 1980	Census 1990	Census 2000	Census 2010	Estimate 2017	Forecast 2030	Forecast 2042	1980–2017		2017–2042	
									Average Annual Historic Growth Rate	Increase	Average Annual Forecast Growth Rate	Increase
Kern County	Population	403,089	543,477	661,653	839,600	895,112	1,208,200	1,469,500	2.1%	13,388	1.9%	22,525
	Households	139,881	181,480	208,655	284,367	266,963	381,600	443,700	1.7%	3,458	2.0%	6,931
Metro Bakersfield	Population	228,000	329,100	409,800	533,500	598,900	764,900	947,000	2.6%	10,093	1.8%	13,651
	Households	89,500	120,000	134,100	168,400	185,200	244,700	286,900	2.0%	2,604	1.7%	3,988
Arvin	Population	6,863	9,286	12,956	19,304	21,157	27,400	33,100	3.0%	389	1.7%	468
	Households	1,946	2,385	3,010	4,476	4,535	5,800	7,100	2.3%	70	1.7%	101
Bakersfield	Population	105,611	174,820	247,057	347,483	383,512	547,300	733,400	3.4%	7,562	2.5%	13,72
	Households	39,602	62,516	83,441	111,132	119,884	169,000	229,500	3.0%	2,185	2.5%	1,499
California City	Population	2,743	5,955	8,385	14,120	14,248	21,400	28,000	4.4%	313	2.6%	539
	Households	990	2,119	3,067	4,102	4,213	6,300	8,400	3.9%	88	2.7%	164
Delano	Population	16,491	22,762	38,824	53,041	53,152	62,400	71,800	3.1%	998	1.2%	731
	Households	4,912	6,236	8,409	10,260	10,476	12,000	14,000	2.0%	151	1.1%	138
Maricopa	Population	946	1,193	1,111	1,154	1,140	1,160	1,190	0.5%	5	0.2%	2
	Households	338	416	404	414	400	400	400	0.5%	2	0.0%	0
McFarland	Population	5,151	7,005	9,618	12,707	14,919	17,900	20,920	2.9%	266	1.3%	235
	Households	1,399	1,685	1,990	2,599	2,938	3,300	3,690	2.0%	42	0.9%	29
Ridgecrest	Population	15,929	28,295	24,927	27,616	28,349	32,300	37,870	1.6%	338	1.1%	373
	Households	5,762	10,349	9,826	10,781	10,840	12,200	14,410	1.7%	138	1.1%	140
Shafter	Population	7,010	8,409	12,731	16,988	18,868	30,500	50,810	2.7%	323	3.8%	1,253
	Households	2,284	2,558	3,292	4,230	4,593	7,500	12,800	1/9%	63	3.9%	322
Taft	Population	5,316	5,902	6,400	9,327	9,492	11,300	13,680	1.6%	114	1.4%	164
	Households	2,096	2,209	2,233	2,254	2,292	2,500	2,860	0.2%	5	0.9%	22
Tehachapi	Population	4,126	5,791	10,957	14,414	12,280	17,400	24,240	2.9%	222	2.6%	469
	Households	1,534	2,335	2,533	3,121	3,075	4,500	6,570	1.9%	42	2.9%	137
Wasco	Population	9,613	12,412	21,263	25,545	26,980	36,800	51,640	2.8%	473	2.5%	967
	Households	3,001	3,471	3,971	5,131	5,587	7,700	11,200	1.7%	70	2.7%	220
Unincorporated	Population	223,290	261,647	264,111	297,901	311,015	402,340	402,850	0.9%	2,387	1.0%	3,601
	Households	75,947	85,201	86,474	96,358	98,130	150,400	132,770	0.7%	604	1.2%	1,358

Source: KCOG 2018

## *Demographics*

The Kern region has a slight ethnic majority with Hispanics/Latinos making up 51.6 percent of the total population in 2016. Non-Hispanic Whites account for 36 percent of the population, down from 40.1 percent in 2010. The rise and shift in population makeup in the Kern region is solely generated by new births, as net migration is negative. In 2016, African American, Asian, and American Indian populations make up 5.2 percent, 4.5 percent, and 0.5 percent of the population respectively. Population growth in Kern mirrors the rest of the state, which is one of the most diverse in the nation. Population growth results from large net increases in three population groups: aging baby boomers, their children - the echo-boomers - and immigrants, mostly from Mexico and Central America. However, while there is still an influx of international immigrants in Kern County, net migration (people moving to the County minus those moving away) is was negative for the two years prior to 2017.<sup>21</sup>

### **4.9.2 REGULATORY FRAMEWORK**

#### **4.9.2.1 Federal**

##### *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.<sup>22</sup> 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 authorizes \$305 billion over fiscal years 2016 through 2020 for highway improvements, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous 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 development of the regional transportation plan that 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,

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<sup>21</sup> US Census, American FactFinder. 2017. *2012-2016 American Community Survey 5-Year Estimates*.

<sup>22</sup> The Moving Ahead for Progress in the 21st Century Act (MAP-21) was enacted in 2012 (PL 112-141).



congestion, and economic activity. The MPO shall approve transportation plan contents and supporting analyses produced by a transportation plan update.

#### 4.9.2.2 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 next RHNA update, the 6<sup>th</sup> cycle, will occur after the 2022 RTP). The RHNA, which is developed after the regional transportation plan, 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.

The population forecast associated with Kern COG's 5<sup>th</sup> Cycle RHNA was, at the time it was prepared, within the 3% allowable difference from Department of Finance projections. The change in legislation that requires allowable difference for future cycles of RHNA to be within 1.5%, has no impact on the current (5<sup>th</sup> Cycle) RHNA. At the time Kern COG adopted its 2015 forecast, the difference between Kern COG's forecast and the 2014 DOF forecast for 2023 (the horizon year of the RHNA) was 0.1%. DOF's last three forecasts have resulted in a 15% swing over the past 5 years. The 2017 DOF forecast is lower than Kern COG's current forecast; Kern COG 2015 forecast was appropriately developed through public workshops under the guidance of a respected economist and is appropriately used in the 2018 RTP and 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 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. Previous law required the housing element to contain a program which set forth a five-year schedule of 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 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 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.

### ***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.

### ***Regional Housing Needs Assessment***

As discussed above in the discussion of SB 375, State law requires preparation of a Regional Housing Needs Assessment (RHNA) allocation plan every eight years. The RHNA is a key tool for Kern County of Governments (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 forecast extends through 2023). 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.

This region's RHNA allocation plan is developed every eight years by Kern COG after preparation of the RTP, as mandated by state law, to coincide with the region's schedule for preparing Housing Elements. It

consists of two measurements of housing need: (1) existing need and (2) future need for very-low income, low-income, moderate, and above-moderate income categories.

The existing need assessment is based on data from the most recent US Census to measure ways in which the housing market is not meeting the needs of current residents. These variables include the number of low-income households paying more than 30 percent of their income for housing, as well as severe overcrowding.

The future need for housing is determined primarily by the forecasted growth in households in a community, based on historical growth patterns, job creation, household formation rates, and other factors to estimate how many households will be added to each community over the projection period. The housing need for new households is then adjusted to account for an ideal level of vacancy needed to promote housing choice, maintain price competition, and encourage acceptable levels of housing upkeep and repair. The 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 form 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.

### 4.9.2.3 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.

Policies from Kern County's General Plan that relate to the 2018 RTP include:

- Employ land use policies that protect the County's businesses from physical degradation and ensure orderly growth, thereby, sustaining opportunities for current and future generations to enjoy economic vitality.
- Support initiatives to develop private/public sector partnerships to beautify communities.
- Provide for a mixed land uses that offer a variety of employment opportunities and enhances the County's economic assets to allow the capture of regional growth.
- Promote improved public transportation service between major job centers and areas of transit dependency and high unemployment.

- Provide infrastructure and coordinate local land use, regulatory practices, and job training to foster and maintain a robust economy.

### ***Kern County Housing Element***

The Kern County Housing Element (2015 to 2023) illustrates how the County plans to develop and improve the area's housing stock with specific goals for the short-term. The County's Housing Element includes objectives:

- To provide an assessment of both current and future housing needs and constraints in meeting these needs; and
- To provide a strategy that establishes housing goals, policies, and programs.

In addition, the element includes strategies and programs that focus on:

- Preserving and improving housing and neighborhoods;
- Providing adequate housing sites;
- Assisting in the provision of affordable housing;
- Removing governmental and other constraints to housing investment; and
- Promoting fair and equal housing opportunities.

### ***Metropolitan Bakersfield General Plan***

The following policies are included in the Metropolitan Bakersfield General Plan that are relevant to the 2018 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.

### 4.9.3 ENVIRONMENTAL IMPACTS

#### 4.9.3.1 Thresholds of Significance

For the purposes of this PEIR, Kern COG has determined that adoption and/or implementation of the proposed 2018 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 to areas of the region either directly (by proposing new homes and businesses) or indirectly (by extending roads and other infrastructure); and/or
- Require the acquisition of land that would displace a substantial number of existing businesses or homes.

#### 4.9.3.2 Methodology

The analysis assesses the potential impacts to population, housing, and employment resources that could result from implementation of the 2018 RTP. For each potential impact, implementation of the proposed 2018 RTP is analyzed at the regional level.

Impacts are assessed from both proposed land use and proposed transportation changes. By 2042, implementation of the proposed 2018 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 2017.

#### *Determination of Significance*

The methodology for determining the significance of population, housing, and employment impacts compares the existing conditions to the 2018 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 2042, and an analysis of how that growth will impact the existing residents, housing stock, and job opportunities in the region.

### 4.9.3.3 Impacts and Mitigation Measures

**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) .

#### *Regional Impacts*

**Figure 3.0-1, Kern’s Forecasted Growth**, in the Project Description depicts forecasted population, household, and employment growth by 2042. Additional growth forecast data and modeling assumptions are available in Chapter 3 of the 2018 RTP.

The population growth projection described in the 2018 RTP represents the expected amount and distribution of people that would occur in 2042 if the policies and investments included in the Plan were to be implemented. The total Kern County population is expected to increase by approximately 570,675 persons by the year 2042. The land use development pattern of the proposed 2018 RTP, assumes a significant increase in multi-family and small lot/townhome. **Table 4.9-3, 2018 RTP Housing Types**, provides a summary of new housing anticipated with the 2018 RTP. In most cases, this shift in housing type, especially the switch from large-lot to small-lot single-family homes, 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 2018 RTP).

**Table 4.9-3  
2018 RTP Housing Types**

Housing Type	Acres	Units	Percent of New Development	Total Units (Existing Plus Growth)	Percent of Total Units
Multi-Family	2,365	33,259	18.4	54,952	12.4
Small-lot/Townhomes	5,704	50,787	28.1	104,824	23.6
Large Lot	29,545	96,655	53.5	283,925	64.0
Total	37,614	180,701	100.0	443,701	100.0

Source: Kern COG 2018

Of the 199,810 new housing units expected by 2042, 18.4 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 2018 RTP, especially housing at the lower income categories. The land use strategies in the 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 2018 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 2018 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 smaller-lot single-family homes, townhomes, and multi-family condominiums and apartments.

The 2018 RTP housing and employment growth pattern focuses on areas of existing development. The 2018 RTP housing and employment growth pattern continues the emphasis developed in the 2014 RTP of focusing on areas of existing development. The transportation and urban form strategies in the 2018 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, the improved accessibility resulting from the 2018 RTP could help facilitate population and economic growth to 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 2018 RTP at the regional level are considered potentially significant for **Impact POP-1**. Mitigation is required. **Mitigation Measure MM POP-1** is described below.

### ***Transit Priority Areas***

TPAs are located in areas that are already developed with urban uses and are located within 0.25 mile of an existing transit station or stop. The RTP housing and employment growth pattern focuses on areas of existing development, similar to the 2014 RTP. Although forecasted growth is typically planned for in the general plans of the County and the cities, the timeline of the 2018 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***

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 2018 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.

**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 2018 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**                    **Require the acquisition of land that would displace a substantial number of existing businesses or homes.**

### ***Regional Impacts***

In general, transportation projects proposed in the 2018 RTP would use existing rights-of-way (ROWs) to the maximum extent feasible. However, development of some highway, arterial, and transit projects

proposed under the 2018 RTP would result in the disturbance and/or loss of residential and business uses. In particular, the 2018 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 the freeway, rail, and transit projects to identify the number of acres that could potentially be affected by the construction and operation of transportation project, including projects in the 2018 RTP.

As indicated in **Table 4.9-4, Affected Land Use within 150 Feet of Transportation Facilities**, developed areas of all types of land uses within 150 feet of transportation facilities would increase by 2042.

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**Table 4.9-4**  
**Affected Land Use within 150 Feet of Transportation Facilities**

Land Use	Existing (Acres)	No Project (Acres)	Plan (Acres)
Residential High	364	429	444
Residential Medium	647	789	845
Residential Low	1,740	2,298	2,337
Residential Very Low	202	367	411
Retail	2,579	3,300	3,370
Resource	509	1,069	1,092
Federal and State	133	203	203
Industrial	1,194	1,931	2,094
Office	276	346	346
Public	1,093	1,373	1,377

*Source: Kern COG 2018*

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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 2018 RTP includes 1,822.4 new lane miles including freeways, major and minor 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 2018 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 increasingly using transit (as documented in the RTP) and showing more interest in living and working in areas with active transportation opportunities or other transit-rich neighborhoods (as is evidenced by a land use strategy that emphasizes development in urban areas) and communities, changes could occur in existing communities. As such, displacement of lower-income residents could occur if new development envisioned by the 2018 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.

### ***Level of Significance Before Mitigation***

Potentially 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.

#### **4.9.4 CUMULATIVE IMPACTS**

Implementation of the 2018 RTP could facilitate an increase in population, housing, and employment over the next 24 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 were 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.

## 4.10 PUBLIC SERVICES

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This section describes the existing public services within the region, identifies the regulatory framework with respect to regulations that addresses public resources, and evaluates the significance of the potential changes to public resources that could result from development of the proposed RTP. In addition this Program EIR provides regional-scale mitigation measures to reduce identified impacts as appropriate and feasible. Sources used in this discussion include the Bureau of Land Management, National Park Service, National Forest Service, Kern County Fire Department, the California Highway Patrol, the Kern County Sheriff's Office, and the Kern County Superintendent of Schools and the Kern County Parks and Recreation Master Plan.

### 4.10.1.1 ENVIRONMENTAL SETTING

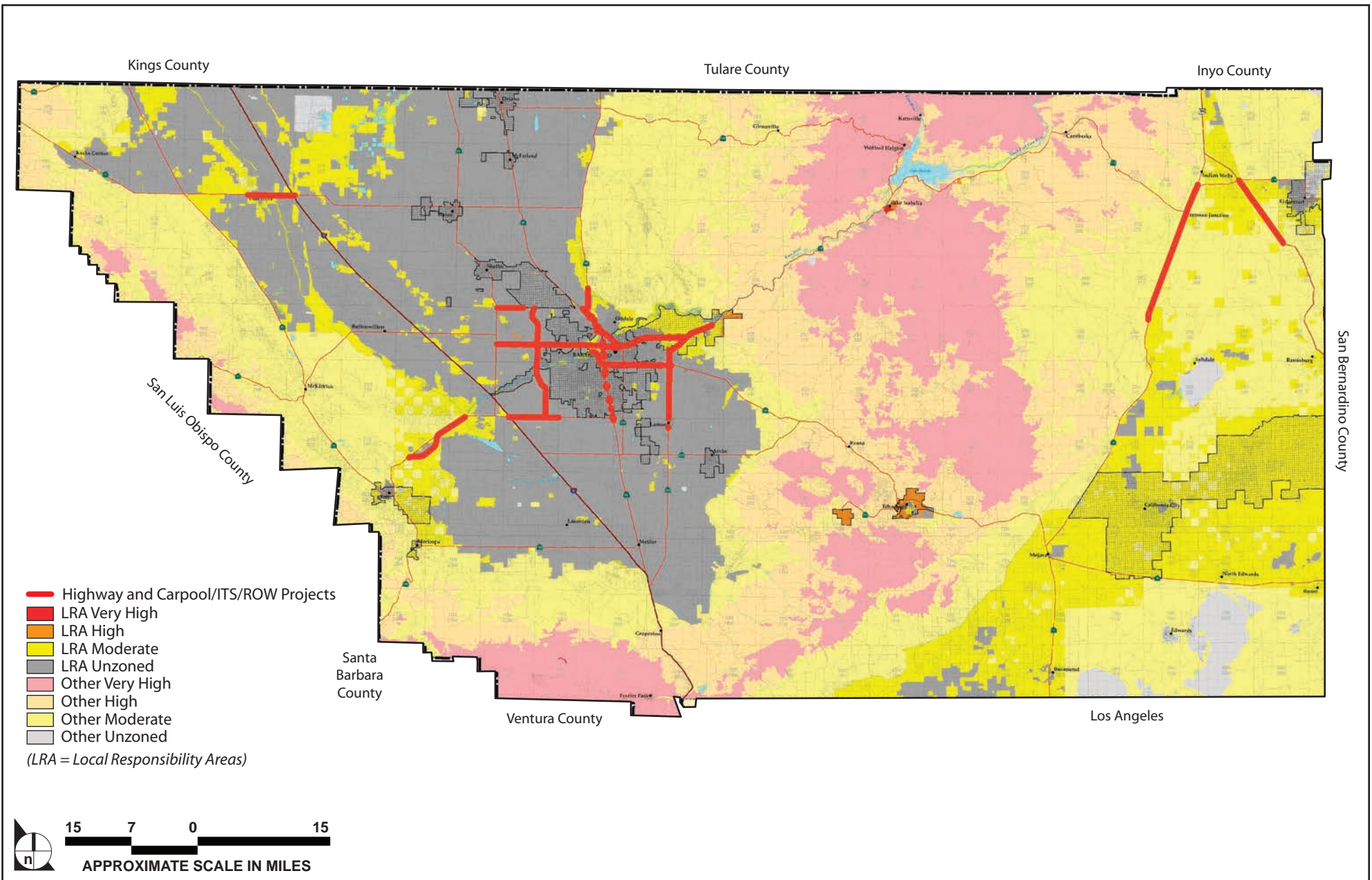
#### Fire Protection Services

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 department, airport and harbor fire departments, and in some instances business sponsored fire departments (i.e., refineries). Each agency provides fire protection services within their own area of responsibilities, but they 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.

#### *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 (as was seen recently in Ventura and Santa Barbara Counties with the Thomas Fire) 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 the region 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. **Figure 4.10.1-1, Kern County Wildfire Hazard Severity Zones,** illustrates the areas in the County that are most susceptible to wildland fires.



SOURCE: Impact Sciences, Inc., 2014

FIGURE 4.10.1-1

# Kern County Wildfire Hazard Severity Zones





## ***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, Delano, Maricopa, McFarland, Ridgecrest, 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 260 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.<sup>1</sup>

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.

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<sup>1</sup> Bureau of Land Management. 2018. *About*. <https://www.blm.gov/about/what-we-manage>, accessed 2018.

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.<sup>2</sup>

There is a BLM Field Office in Bakersfield. Personnel working at the field office manage 612,000 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 417 park units and more than 84 million acres of land throughout the entire U.S. and its territories. Of the over 84 million acres which the NPS is responsible for, 53 million acres have burnable vegetation. The NPS maintains 7 water tenders (often referred to as water tankers, which are used to transport large amounts of water), 175 engines, 12 fire module vehicles, 4 crew carries, 6 helicopters, and one air tanker base located in Chattanooga, TN.<sup>3</sup> 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. The NPS has six active modules which are used to support NPS and interagency prescribed fire activities and wildfire incidents. The seven locations are:<sup>4</sup>

- Black Hills at Jewel Cave NM (SD)
- Buffalo National River (AR)
- Cumberland Gap NHP (KY)
- Great Smoky Mountains NP (TN)
- Saguaro National Park (AZ)
- Whiskeytown Nation Recreation Area (CA)

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<sup>2</sup> Bureau of Land Management. 2017. *Public Safety and Fire*. <https://www.blm.gov/programs/public-safety-and-fire/fire-and-aviation>, accessed 2018.

<sup>3</sup> National Park Service (NPS). 2017. *Wildland Fire Fact Sheet*, <https://www.nps.gov/fire/wildland-fire/about.cfm>, accessed 2018

<sup>4</sup> Ibid.

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.

### **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, handcrews, engine crews, aviation and helitack crews, hotshot crews, lookouts, and smokejumpers. Within Kern County the NFS is responsible for fire prevention and suppression in the 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 is comprised of 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. The Department responds to more than 5,600 wildfires and over 350,000 emergency calls per year and 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, regulates hazardous liquid pipelines, and tracks incident statistics for local and state government emergency response agencies.<sup>5</sup>

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.<sup>6</sup>

### **Kern County Fire Department**

The Kern County Fire Department (KCFD) is comprised of over 625 permanent employees protecting an area which 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, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi and Wasco. Over 546 uniformed firefighters are stationed in 46 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.<sup>7</sup>

The KCFD operates 7 battalions in addition to the 46 fire stations. Their equipment includes: 55 engines, 4 ladder trucks, 41 patrols, 25 command vehicles, 21 reserve engines and patrols, 5 bulldozers, 7 reserve bulldozers, 5 water tenders, 3 hand crews, two mass decontamination trailers, 5 crash rescues, one fixed winged airplane, two helicopters, two hazardous material response teams, a technical rescue, a hotshot crew, an oil fire foam tender, three light/air vans and two fire education trailers.<sup>8</sup>

In 2015, the Department cataloged 2,829 fire calls, 26,202 medical aid responses, 1,624 hazardous conditions calls, 16,593 good intent responses, and 708 fire investigation responses. The Department is divided into three divisions, training, emergency communications center, and information technology. 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

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<sup>5</sup> California Department of Forestry and Fire Protection (CAL FIRE). 2017. *About*. <http://calfire.ca.gov/about/about>, accessed 2018.

<sup>6</sup> CAL FIRE. 2017. *Fire Protection- Counties*. [http://calfire.ca.gov/fire\\_protection/fire\\_protection\\_coop\\_efforts\\_contractcounties](http://calfire.ca.gov/fire_protection/fire_protection_coop_efforts_contractcounties), accessed 2018.

<sup>7</sup> Kern County Fire Department. 2015. *Annual Report*. <http://www.kerncountyfire.org/about-us/annual-report/book/19-kcfd-2015-annual-report/2-annual-reports.html>, accessed 2018.

<sup>8</sup> Kern County Fire Department. 2017. *About*. <http://www.kerncountyfire.org/about-us.html>, accessed 2018.

response community and is designated as a regional training site by the State Fire Marshall, State Office of Emergency Services and the California Wild land Fire Training Group. At this facility County firefighters participate in multiple drills including house burn, hazardous material, and wildland fire drills.<sup>9</sup>

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 21 different law enforcement agencies. In 2016, the Center's call volume was approximately 108,945 calls. ECC's current staffing includes 22 full time dispatchers, 6 supervisors, one manager, and two duty officer. During the fire season two additional extra-help positions are added to assist with the wildland resource ordering. Daily staffing includes one supervisor and four dispatchers per shift. In addition, each rotation includes one dispatcher, to provide additional coverage during the 12 busiest hours.

All calls requiring medical aid or ambulance dispatch are put through the National Academy of Emergency Medical Dispatch (EMD) protocols. This protocol insures 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.

Wildland fire dispatching is a large part of the operations during Fire Season. ECC uses Resource Ordering and Status System (ROSS) to ensure that our responders receive the needed resources to fight wildland fires, from engines, bulldozers, hand crews and aircraft.<sup>10</sup>

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. In 2016, the Technology Services employees delivered services to over 640 users, oversaw the departmental Wide Area Network connecting 53 stations & service locations all over Kern County including the Emergency Communication Center (ECC) and the Emergency Operations Center (EOC). Technology personnel supported 37 servers, 370 PCs and 50 Mobile Data Computers (MDC) located in vehicles & apparatus. Additionally, the section was tasked with supporting all Bakersfield City Fire MDCs.<sup>11</sup>

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<sup>9</sup> Kern County Fire Department. 2015. *Annual Report*. <http://www.kerncountyfire.org/about-us/annual-report/book/19-kcfd-2015-annual-report/2-annual-reports.html>, accessed 2018.

<sup>10</sup> Kern County Fire Department. 2017. *Divisions*. <http://www.kerncountyfire.org/operations/divisions/emergency-communication-center.html>, accessed 2018.

<sup>11</sup> Kern County Fire Department. 2017. *Operations*. <http://www.kerncountyfire.org/operations/divisions/information-technology-gis.html>, accessed 2018.

The Department has several emergency plans in place to be able to best serve the community during a disaster. They include:

- Hazard Mitigation Plan
- Terrorism Plan
- Emergency Operations Plan, and;
- Isabella Dam

**(1) 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 2006 plan was updated in 2011 and addressed changes in hazard identification, vulnerability analysis, local mitigation capabilities, and progress made during the original five years to prevent or reduce future losses from natural hazards.<sup>12</sup>

**(2) Terrorism Plan**

The Terrorism Contingency Plan is designed to establish responsibilities, and to coordinate preparedness, and 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 conditions existing at the time of the emergency, including the availability of local and mutual aid resources.

**(3) 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

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<sup>12</sup> Kern County Fire Department. 2017. *Hazard Mitigation Plan*. <http://www.kerncountyfire.org/operations/divisions/office-of-emergency-services/emergency-plans/hazard-mitigation-plan.html>, accessed 2018.

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 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 is comprised of four major parts as follows:

- Basic Plan: Overview of County/Operational Area's emergency management program, Emergency Management Organization, and concept of emergency operations
- General Procedures: Emergency procedures to be implemented by employees at the time of a major emergency or disaster
- Emergency Operations Center (EOC) Procedures & 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 independent of the Plan and are incorporated into the Plan by reference.

#### **(4) 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.<sup>13</sup>

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.

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<sup>13</sup> Kern County Fire Department. 2017. *Lake Isabella Dam*.  
<http://www.kerncountyfire.org/operations/divisions/office-of-emergency-services/emergency-plans/isabella-dam.html>, accessed 2018.

## 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, aggressive fire prevention, fire safety education, and disaster preparedness. The BFD has six stations and its inventory of front line apparatus includes 14 Engines, three Ladder Trucks, four Type III Engines, two FWD Type IV Patrols, a Light & Air Unit, a Hazardous Materials Unit, a Urban Search & Rescue Unit, a Heavy Utility Tender, a Technical Rescue Trailer, a Decontamination Unit, four Battalion Command Vehicles, three Safety Officer Command Vehicles, and other support units. The Department operates an arson division, an Emergency Communications Center (a joint-dispatch center for BFD and the Kern County Fire Department), a training facility (a joint venture between BFD, the County, and Bakersfield Community College), and contracts with private ambulance providers for emergency services.<sup>14</sup>

### *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 EMT's, paramedics, specialized nurses and dispatchers (EMD). While most EMS responses are day-to-day emergencies, EMS agencies also plan and prepare for disaster and medical response. EMS includes:

- Public safety dispatch
- Fire services first response and treatment
- Private ground and air ambulance response, treatment and transport
- Law enforcement agencies

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<sup>14</sup> City of Bakersfield. 2017. *Fire Department*. <http://www.bakersfieldfire.us/>, accessed 2018.



- Hospitals and specialty care centers
- Training institutions and programs for EMS personnel
- Managed care organizations
- Preventative 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.

#### **4.10.1.2 REGULATORY FRAMEWORK**

##### **4.10.1.2.1 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 requires 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.

#### **4.10.1.2.2 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.

**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 collaborated 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 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. During an

#### **4.10.1.2.3 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 peakload 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:

#### **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 work place.
- 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 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.

### ***CCFD Fire Prevention Division***

The purpose of the Fire Prevention Division of the California City Fire Department is to prevent fires and reduce the impact of a fire once it occurs. The California City Fire Department has adopted and regulates the minimum requirements of the California Fire Code. These requirements pertain to all buildings, new and existing, within the community with the main focus on fire prevention, protection, life safety and enforcement of the code.

#### **4.10.1.3 ENVIRONMENTAL IMPACTS**

##### **4.10.1.3.1 Thresholds of Significance**

For the purposes of this PEIR, Kern COG has determined that adoption and/or implementation of the proposed 2018 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.
- 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.

##### **4.10.1.3.2 Methodology**

The analysis assesses the potential impacts to fire facilities that could result from implementation of the proposed 2018 RTP. For each potential impact, implementation of the proposed 2018 RTP is analyzed at the regional level.

Impacts are assessed in terms of both land use and transportation impacts. By 2042, implementation of the proposed 2018 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 2018 RTP in 2042, 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 570,675 people, the potential for 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 provide for regulation of fire life safety and buildings must meet specific regulatory requirements to protect life in the event of fire. This document analyzes impacts of the proposed 2018 RTP at a programmatic level. Project-level analysis of fire impacts should be undertaken as appropriate. As discussed below, it is assumed that implementing agencies will comply with all regulatory requirements as described above.

#### 4.10.1.3.3 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 2018 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 2042, the Plan area would grow by approximately 570,675 people, 158,200 jobs, and 175,394 housing units. Implementation of the proposed 2018 RTP would consume approximately 56,000 acres of undeveloped land. Depending on the growth and housing patterns, existing facilities and services may become overextended during the lifetime of the Plan. In particular, the 2018 RTP includes a shift in housing patterns (from past trends) to emphasize 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.

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 in to 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 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 construction of new fire protection facilities related to the land use changes and transportation improvements from implementation of the proposed 2018 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.

**Impact FIRE-2**            **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.**

### *Regional and Transit Priority Area Impacts*

Wildfires can cause significant damage to people and property because they can spread quickly across large areas. The 2018 RTP could pose a hazard if it results in the loss, injury, or death and damage to property adjacent to wildlands where residences are intermixed with wildlands.

In this analysis, anticipated future land uses are discussed in general programmatic terms. Project-specific, parcel-level future land uses are unknown. Fire threats are depicted in **Figure 4.10.1-1**. By 2042, 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 including. The threat of wildfires from 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 2018 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-adjointing land uses to risks associated with wildland fires.

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 2018 RTP would result in additional residential structures being located in wildfire risk areas. As such, the impact would be potentially significant. **Mitigation Measures MM FIRE-1** and **MM FIRE-2** would be required.

### ***Level of Significance Before Mitigation***

Potentially significant at the regional and TPA levels.

### ***Mitigation Measures***

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 2018 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.

**MM FIRE-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 FIRE-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 FIRE-1** and **MM FIRE-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.

#### **4.10.1.4 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 support increases. Significant impacts with respect to wildland fires could add to similar impacts in adjacent jurisdictions.

### 4.10.2.1 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 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 the Kern County's Sheriff Department and the nine 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.<sup>1</sup> The County Sheriff's office is located

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<sup>1</sup> City of Maricopa, [http://cityofmaricopa.org/index.cfm?fuseaction=dep\\_intro&dept\\_id=1](http://cityofmaricopa.org/index.cfm?fuseaction=dep_intro&dept_id=1) and City of Wasco, <http://www.ci.wasco.ca.us/city-departments/police-services/>, 2018.

at 1350 Norris 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 4.10.2-1, Kern County Sheriff's Substations Location.**

**Table 4.10.2-1  
Kern County Sheriff's Substations Locations**

Station	Address
Boron Substation	26949 Cote Street, Boron, CA 93516
Buttonwillow 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	315 N. Lincoln Street, Taft, CA 93268
Tehachapi Substation	22209 Old Town Road Tehachapi, CA 93581
Ridgecrest Substation	128 E. Coso Ridgecrest, CA 93555
Rosamond Substation	1379 35 <sup>th</sup> Street, Rosamond, CA 93560
Walker Basin Substation	14654 Caliente Creek Road, Walker Basin, CA 93518
Wasco Substation	748 F Street, Wasco, CA 93280

*Source: KCSO, 2018 <http://www.kernsheriff.org/contact.aspx>.*

The KCSO employs 1,202 sworn and civilian employees. Within those employed by the Sheriff's department, 567 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 338 detention deputies deployed in the detention facilities and 297 Sheriff's professional support staff assigned throughout Kern County.<sup>2</sup> 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 include responding to service calls and patrolling the communities. Service calls include: criminal activity, civil matters, and assisting other departments when necessary.

<sup>2</sup> Kern County Sheriff's Office (KCSO). 2016. *History*. [http://www.kernsheriff.org/kcso\\_history.aspx](http://www.kernsheriff.org/kcso_history.aspx), accessed 2018.

The Metro Patrol is comprised of 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.<sup>3</sup>

### **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 fulltime 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.<sup>4</sup>

### **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 criterion and complete an oral interview and background investigation and complete a CSU academy to become part of the Citizen Service Unit.<sup>5</sup>

### **Explorer Post**

The Explorer Post is a group within the Kern County Sheriff's Office that allows young people between the ages of 16 and 21 to explore the world of law enforcement. The program's intent is to educate and involve the members in law enforcement operations and possibly interest them in a law enforcement career. 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

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<sup>3</sup> KCSO. 2017. *Patrol*. [http://www.kernsheriff.com/metro\\_patrol.aspx](http://www.kernsheriff.com/metro_patrol.aspx), accessed 2018.

<sup>4</sup> KCSO. 2017. *Reserves*. <http://www.kernsheriff.org/reserves.aspx>, accessed 2018.

<sup>5</sup> KCSO, 2017. *Citizen Volunteers*. [http://www.kernsheriff.com/citizen\\_volunteers.aspx](http://www.kernsheriff.com/citizen_volunteers.aspx), accessed 2018.

hundred hours a month, wear a modified uniform to distinguish them from deputies, and are not allowed to carry weapons.<sup>6</sup>

### **Search and Rescue**

The Kern County Sheriff's Department maintains 11 separate Search and Rescue groups located throughout the County, which include over 325 volunteers. The 11 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 Indian Wells 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.<sup>7</sup>

### **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 four separate facilities, pre-trial facility (male/female), two minimum-security facilities (separate facilities for male and female), and maximum/medium security (all male).<sup>8</sup> The detention facility maintained a population of 2,374 inmates in December 2015.<sup>9</sup>

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-Trial 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.<sup>10</sup>

Male and female inmates are housed in separate facilities in the Minimum Security facility. The medium/maximum security facility is the second oldest jail in the Kern County Sheriff's Office jail

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<sup>6</sup> KCSO. 2017. *Explorers*. <http://www.kernsheriff.org/explorers.aspx>, accessed 2018.

<sup>7</sup> KCSO. 2017. *Search and Rescue*. [http://www.kernsheriff.org/search\\_rescue.aspx](http://www.kernsheriff.org/search_rescue.aspx), accessed 2018.

<sup>8</sup> KCSO. 2013. *Detentions*. <http://www.kernsheriff.com/Detentions/Lerdo/Pages/default.aspx>, accessed 2018.

<sup>9</sup> Board State and Community Corrections (BSCC). 2016. *Community Corrections in California*. <http://www.bscc.ca.gov/downloads/BSCC%20Community%20Corrections%20in%20CA%202014-2016.pdf>, accessed 2018.

<sup>10</sup> KCSO. 2017. *Pretrial Facility*. [http://www.kernsheriff.org/pre\\_trial\\_facility.aspx](http://www.kernsheriff.org/pre_trial_facility.aspx), accessed 2018.



system. The facility's design capacity can house up to 374 inmates and generally includes pre-sentenced and sentenced inmates.<sup>11</sup>

### **Central Receiving Facility**

The KCSO undertakes approximately 40,000 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.<sup>12</sup>

### **Court Services and Transportation**

The Sheriff's Office is responsible for safely transporting inmates to and from, court hearings, medical appointments, or facility transfers. The Kern County Sheriff's Transportation Unit is comprised of one Sergeant, two Senior Deputies, and 29 Deputies who are responsible for transporting inmates to and from the 10 Superior Courts located in Kern County. These duties are accomplished through the use of the unit's 34 vehicles, including large and medium capacity cars, vans, and buses. In addition, the unit processes one to two extraditions a week from states across the country.<sup>13</sup>

### **Inmate Services**

The Inmate Services Section consists of seven 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 includes the law library, inmate education programs, inmate telephones, and chaplain services and released inmate transportation. The Inmate Services Section is staffed with one Lieutenant, one Detentions Sergeant, two Detentions Senior Deputies, 7 Detentions Deputies, 21 civilian employees, and numerous contract employees.<sup>14</sup>

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<sup>11</sup> KCSO. 2017. *Maximum Security*. [http://www.kernsheriff.org/max\\_med\\_security.aspx](http://www.kernsheriff.org/max_med_security.aspx), accessed 2018.

<sup>12</sup> KCSO. 2013. *Detentions*. <http://www.kernsheriff.org/detentions.aspx>, 2018.

<sup>13</sup> KCSO. 2017. *Court Services*. [http://www.kernsheriff.com/court\\_services.aspx](http://www.kernsheriff.com/court_services.aspx), accessed 2018.

<sup>14</sup> KCSO. 2017. *Inmate Services*. [http://www.kernsheriff.org/inmate\\_services.aspx](http://www.kernsheriff.org/inmate_services.aspx), accessed 2018.

### ***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.

#### **4.10.2.2 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.

##### ***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) 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 jurisdictions also have specific goals, such as a 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 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.

### **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 operate their own police department, with specific rules and regulations which residents and visitors must abide by when in the local jurisdictions. While

almost every city maintains their own police department, the policies are generally similar throughout the County.

### 4.10.2.3 ENVIRONMENTAL IMPACTS

#### Thresholds of Significance

For the purposes of this EIR, Kern COG has determined that adoption and/or implementation of the proposed 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 to police facilities that could result from implementation of the proposed 2018 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 2042, implementation of the proposed 2018 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 2018 RTP in 2042, 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 570,675 people, the potential for 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 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 2042, the Plan area would grow by approximately 570,675 people, 158,200 jobs, and 175,394 housing units. Implementation of the proposed 2018 RTP will convert approximately 56,000 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. In particular, the 2018 RTP includes a shift in housing patterns (from past trends) to emphasize development in urbanized areas and 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.

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 increasing population, existing facilities would likely need additional personnel and equipment to maintain adequate service levels. As part of project specific environmental review, local agencies are required to determine the degree of impact to 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 in to 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 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 construction of new police protection facilities related to the land use changes and transportation improvements from implementation of the proposed 2018 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 construction of new police facilities would be less than significant at the regional and TPA levels.

**4.10.2.4 CUMULATIVE IMPACTS**

In general, impacts as a result of 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 impacts of the 2018 RTP would not be cumulatively considerable.

### 4.10.3.1 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 kindergarten through 12<sup>th</sup> grade (K–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.<sup>1</sup>

During the 2016 - 2017 school year, KCSOS oversaw 47 school districts. Kern High School District maintains the highest student enrollment with 38,705 students, while Blake Elementary School District has the lowest student enrollment with only 11 students.<sup>2</sup> In 2016, 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 2015–2016 school year was approximately 181,393 students, ranging from kindergarten to twelfth grade, with approximately 7,532 teachers.

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<sup>1</sup> Kern County Superintendent of Schools. 2017. *At a Glance*. <http://kern.org/wp-content/uploads/sites/11/2017/02/at-a-glance-Barlow.pdf>, accessed 2018.

<sup>2</sup> California Department of Education. 2016. *Data Quest*. <https://dq.cde.ca.gov/dataquest/dqcensus/enrgrdlevels.aspx?aggllevel=District&year=2016-17&cde=1563529>, accessed 2018



### 4.10.3.2 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 2042 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, and 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) 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 2018 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.

### **4.10.3.3 ENVIRONMENTAL IMPACTS**

#### **Thresholds of Significance**

For the purposes of this EIR, Kern COG has determined that adoption and/or implementation of the proposed 2018 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 to school facilities that could result from implementation of the proposed 2018 RTP. Implementation of the proposed 2018 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 2042, implementation of the proposed 2018 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 2018 RTP in 2042, as required by *CEQA Guidelines* Section 15126.2(a). The known education resources located within the region were evaluated using the criteria set forth by the *CEQA Guidelines*.

Generally, with regard to impacts to schools, the greater the increase in population compared to existing conditions, the greater the impact to 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 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 education services. As the population is expected to grow by 570,675 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 570,675 people over the next 24 years (with or without the Plan); some of this population increase would include school age children. The addition of 175,394 housing units could result in the addition of approximately 94,852 school-aged children.<sup>3</sup> Over the past ten years, the Bakersfield City School District has experienced significant growth and is now at its highest enrollment in the District's history. To accommodate the influx of students, the District revised growth boundaries and opened two new schools to help reduce overcrowding in the District.<sup>4</sup> The transportation investments and land use strategies in the 2018 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 school district 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 anticipated effects of growth related to air quality, noise, traffic, utilities, and other environmental impact areas. Any impacts from construction of new schools would occur at the local level. 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.

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<sup>3</sup> 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.

<sup>4</sup> Bakersfield City School District. 2013. *Boundary Changes*. <http://bcsd.com/wp-content/blogs.dir/4/files/2013/10/Boundary-Changes-Questions-and-Answers.pdf>, accessed 2018.

Therefore, at a programmatic level, impacts as a result of construction of new schools related to the land use changes and transportation improvements from implementation of the proposed 2018 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.

**4.10.3.4 CUMULATIVE IMPACTS**

In general, impacts as a result of 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 and impacts of the 2018 RTP would not be cumulatively considerable.

## 4.10.4 Parks and Recreation

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This section describes the existing parks and recreational resources within the Kern COG region, identifies the regulatory framework with respect to regulations that address recreation resources, and evaluates the significance of impacts to recreation resources that could result from the proposed 2018 RTP. In addition, mitigation measures are identified as appropriate and feasible to reduce identified impacts. Sources utilized in this discussion include the Kern County Parks and Recreation Master Plan.

### 4.10.4.1 ENVIRONMENTAL SETTING

#### Parks and Recreation

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. In 2010, there were approximately 4,702 acres of County parks and an additional 293 acres in unincorporated county areas.<sup>1</sup> 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 4.10.4-1, Resource Areas: Farmland, Habitat, Open Space, and Government Lands.**

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.

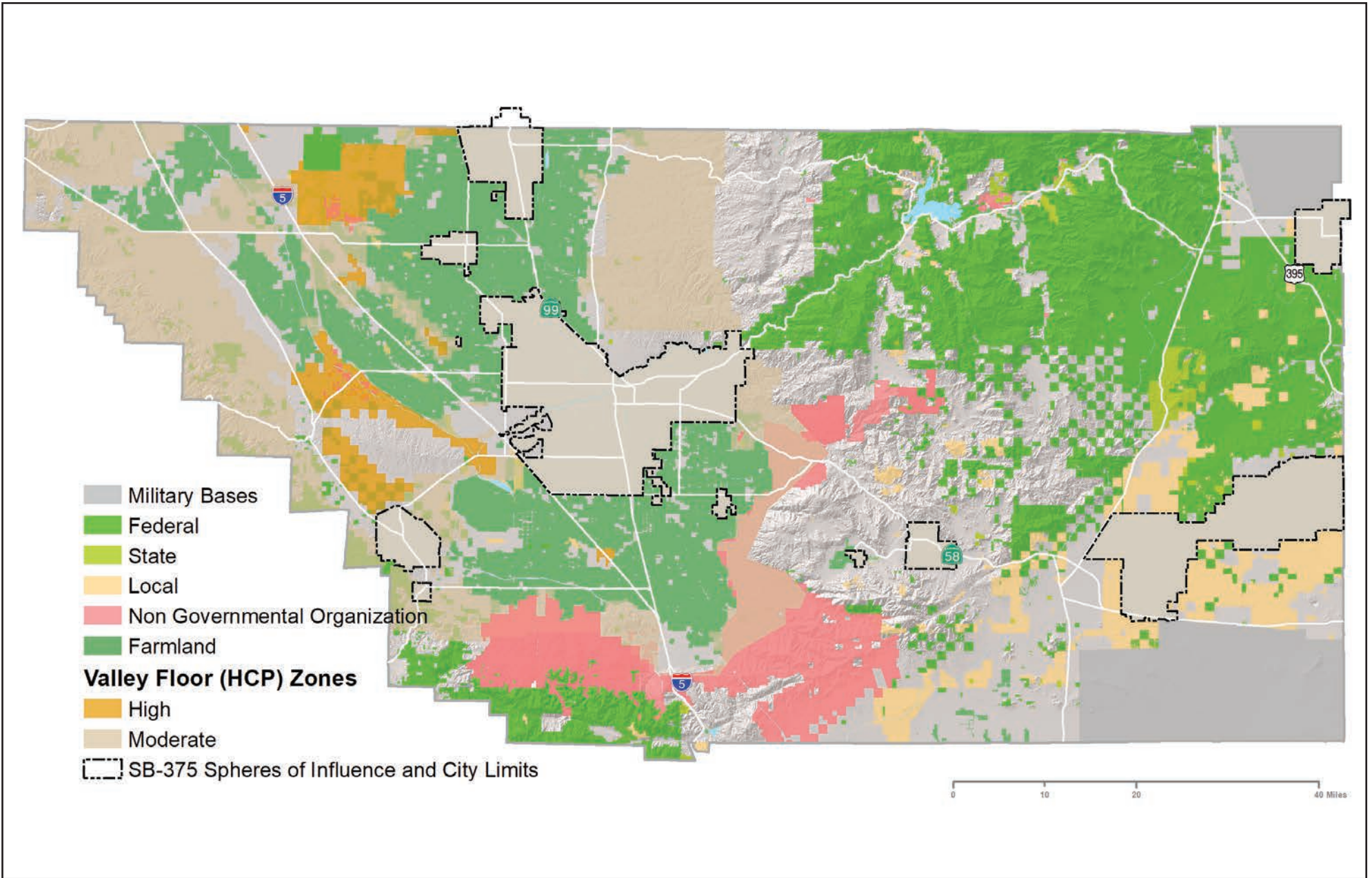
**Neighborhood Park:** A park or playground developed primarily to serve the recreational needs of citizens living within a 0.5-mile radius of the park. These facilities include pocket parks and neighborhood playgrounds.

**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.

**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

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<sup>1</sup> Kern County. 2010. *Parks and Recreation Master Plan*.



SOURCE: Kern County, FMMP, CA Protected Areas Database, Kern LAFCO, Bureau of Transportation Statistics National Transportation Atlas Database, 2018

FIGURE 4.10.4-1

Resource Areas: Farmland, Habitat, Open Space, and Government Lands



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 space 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.

## 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.

### ***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 cliff 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 is California State University, Bakersfield, Bakersfield Community College, Cerro Coso Community College, and Porterville Community that also offer significant recreational facilities and programs which 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 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.<sup>2</sup>

### Park Standards

The County's General Plan identifies a park acreage standard of 2.5 acres per 1,000 residents. This standard applies to both local and regional facilities. Currently there is a deficiency of parks in the County, primarily at the local level in unincorporated areas of the County that are not served by park districts. In 2010, the level of service for residents of the County was 1.66 acres of parkland per 1,000 residents well below the standard of 2.5 acres per 1,000.<sup>3</sup> This translates into a deficiency of 147 acres of local park land. The level of service was even lower in unincorporated areas in and near the Bakersfield metropolitan area, where recent growth has been strongest.<sup>4</sup> 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 4-10.4-1, Kern County Park Types**, classifies the type of parks in the County, the number of sites, and the number of acres for each type.

**Table 4.10.4-1  
Kern County Park Types**

Park Types	Number of Sites	Acres of Park Land	% Of Park System
Regional Parks	8	4282	92%
Local/Neighborhood Parks	40	420	8%
Public Buildings	25		

*Source: Kern County Parks and Recreation Master Plan, updated 2010*

### Parkland Existing Conditions

The Kern County Parks and Recreation Master Plan separates the County and its park facilities into five regional areas: (1) North Kern County, Lake Isabella to Ridgecrest;(2) South Kern County, Frazier Park to Boron; (3) Greater Bakersfield; (4) West Kern County; and (5) Valley North of Bakersfield, and South of Bakersfield.

<sup>2</sup> Ibid.

<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

### *North Kern County, Lake Isabella to Ridgecrest*

North Kern County encompasses the northeastern part of the County and is bordered by Tulare and Inyo counties on the north and San Bernardino County to the east. The area, which covers both desert and mountain terrain, also includes a major portion of the Sequoia National Forest and the 11,217-acre Lake Isabella Regional Recreation Area. Altogether this section of the park system encompasses 427 acres of County park land, including two regional parks, nine local/neighborhood parks, four public buildings, and a regional recreation area. Although the Kern County Parks and Recreation Department does not own this park land, it does provide recreation services, including a patrol boat to monitor boating activities and safety compliance as well as perform rescue operations as needed on the lake. **Table 4.10.4-2, North Kern County Park and Recreation Facilities**, lists the various facilities in the designated region, including their acreage and general location.

**Table 4.10.4-2  
North Kern County Park and Recreation Facilities**

<b>Name</b>	<b>Acres</b>	<b>Location</b>
<b>Regional Parks</b>		
Greenhorn Mountain Park	110	Alta Sierra
Leroy Jackson Regional Park	100	Ridgecrest
Regional Recreation Area		
Lake Isabella Recreation Area*	11,217	Lake Isabella
<b>Local/Neighborhood Parks</b>		
Circle Park	1	Kernville
Inyokern Park (see Senior Center)	3	Inyokern
Lake Isabella Park	40	Lake Isabella
Mountain Mesa Park	5.2	Mountain Mesa
Ed Oakley Park (see Memorial Hall)	1.7	Twin Oaks
Randsburg Park	0.2	Randsburg
Riverside Park	5	Kernville
Scodie Park	4	Onyx
Wofford Heights Park	7	Wofford Heights
<b>Name</b>	<b>Capacity</b>	<b>Location</b>
<b>Public Buildings</b>		
Inyokern Senior Center	160	Inyokern
Kern River Valley Veterans/Senior Center	764	Lake Isabella
Ed Oakley Memorial Hall	227	Twin Oaks
Rand Community Building	190	Johannesburg

*Source: Kern County Parks and Recreation Master Plan, updated 2010*

*Note:*

\* *Not an official part of the Kern County park system, but the Kern County Parks and Recreation Department provides recreation services inside the park area.*

### *South Kern County (Frazier Park to Boron)*

South Kern County stretches from Ventura County to the west, San Bernardino County to the east, and Los Angeles County along of its southern edge. The area includes the Frazier Park and Tehachapi mountain communities in the west, and the desert communities of Mojave, California City, Rosamond, North Edwards, and Boron to the east. Altogether this section of the park system encompasses 560 acres of park land, including one regional park, six local/neighborhood parks, and seven public buildings. **Table 4.10.4-3, South Kern County Park and Recreation Facilities**, lists the various facilities in the designated region, including their acreage and general location.

**Table 4.10.4-3  
South Kern County Park and Recreation Facilities**

<b>Name</b>	<b>Size</b>	<b>Location</b>
Tehachapi Mountain Park	490	Tehachapi
<b>Local/Neighborhood Parks</b>		
Boron Park	10	Boron
Frazier Mountain Park	27	Frazier Park
Mojave East Park	8	Mojave
Mojave West Ball Park	10	Mojave
North Edwards Park	5	North Edwards
Rosamond Park	10	Rosamond
<b>Name</b>	<b>Capacity</b>	<b>Location</b>
<b>Public Buildings</b>		
Boron Recreation Building	268	Boron
Frazier Park Recreation Building	373	Frazier Park
Hummel Hall	400	Rosamond
Mojave Recreation Building	155	Mojave
Mojave Veterans and Seniors Building	495	Mojave
Rosamond Recreation Building	219	Rosamond
Tehachapi Veterans Memorial Building	255	Tehachapi

*Source: Kern County Parks and Recreation Master Plan, updated 2010*

### *Greater Bakersfield*

The Greater Bakersfield area is located in the center of the County and is the most heavily populated. Much of the Kern County park system lies within this area, including two regional parks, 13 local/neighborhood parks (with a 14<sup>th</sup> park that remains undeveloped), two golf courses, and seven public buildings. One of the regional parks, Kern River County Park, is actually a compilation of multiple parks, including Hart Memorial Park, which is considered by many to be the heart of the County park system. Altogether this section of the County park system encompasses 1,718 acres of park land. **Table**

4.10.4-4, **Greater Bakersfield Park and Recreation Facilities**, lists the various facilities in the designated region, including their acreage and general location.

**Table 4.10.4-4  
Greater Bakersfield Park and Recreation Facilities**

<b>Name</b>	<b>Acres</b>	<b>Location</b>
<b>Regional Parks</b>		
Kern River County Park	1,445	Bakersfield
Camp Okihi	15	Bakersfield
Hart Memorial Park	370	Bakersfield
Kern River Campground and Park	28	Bakersfield
Kern River Group Picnic Area	10	Bakersfield
Lake Ming	205	Bakersfield
Kern River Golf Course		Bakersfield
Metropolitan Rec. Center/Stramler Park	107	Bakersfield
<b>Local/Neighborhood Parks</b>		
Belle Terrace Park	19.8	Bakersfield
Casa Loma Park	9	Bakersfield
Circle Park	0.1	Bakersfield
College Park	17	Bakersfield
Greenfield Park	5	Greenfield
Heritage Park	18	Bakersfield
Kern Delta Park (undeveloped)	11.75	Bakersfield
Lamont Park	8	Lamont
Panorama Park	24	Bakersfield
Pioneer Park	14	Bakersfield
Potomac Park	5	Bakersfield
Rexland Acres	4	Bakersfield
Victoria Araujo Park	3	Bakersfield
Virginia Avenue Park	9.5	Bakersfield
Wilkins Park	2.6	Bakersfield
James C. Haggerty North Kern Golf Course		Shafter
<b>Name</b>	<b>Capacity</b>	<b>Location</b>
<b>Public Buildings</b>		
Ben Austin Senior Center	279	Bakersfield
California Avenue Veterans Memorial Bldg.	320	Bakersfield
East Bakersfield Veterans Building/Senior Center	575	E. Bakersfield
East Niles Senior Center	300	Bakersfield
Kern County Veterans Memorial Bldg.	625	So. Bakersfield
North of the River Veterans Memorial Bldg.	966	Oildale
Shafter Veterans Memorial Hall	845	Bakersfield

Source Kern County Park and Recreation Master Plan, updated 2010

### *West Kern County*

This area of the County borders San Luis Obispo County to the east. It is a major oil production region and includes valley communities such as Buttonwillow, Maricopa, and Taft. This area is served by one regional park, seven local/neighborhood parks, one golf course, and two public buildings. Altogether this section of the park system encompasses 1,655 acres of County park land. With the exception of the regional park and the nearby golf course, all of the local parks owned and operated by the County are located within the jurisdictional territory of the Westside Recreation and Park District. **Table 4.10.4-5, West Kern County Park and Recreation Facilities**, lists the various facilities in the designated region, including their acreage and general location.

**Table 4.10.4-5  
West Kern County Park and Recreation Facilities**

Name	Acres	Location
<b>Regional Parks</b>		
Buena Vista Aquatic Recreation Area	1,585	Greater Bakersfield
<b>Local/Neighborhood Parks</b>		
George Blanco Little League Complex	6	Taft
Buttonwillow Park	20	Buttonwillow
Derby Acres Park	3.8	Derby Acres
Fellows Park	8	Fellows
Ford City Park	4.1	Ford City
A. W. Noon Park	12	Dustin Acres
Valley Acres Park	2	Valley Acres
Buena Vista Golf Course		Taft
Name	Capacity	Location
<b>Public Buildings</b>		
Buttonwillow Recreation Bldg.	114	Buttonwillow
Veterans Memorial Bldg.	575	Taft

*Source: Kern County Parks and Recreation Master Plan, updated 2010*

### *Valley North of Bakersfield and South of Bakersfield*

This area encompasses agricultural lands and urban communities that lie to the northwest of Bakersfield, as well as communities to the southeast of Bakersfield. Combined, the area encompasses 506 acres of County parkland, with one regional park, three local parks, and two public buildings to the north and one local park and one public building serving communities to the south. Altogether this section of the park system encompasses 506 acres of County park land. **Table 4.10.4-6, Valley North of Bakersfield and**

**South of Bakersfield County Park and Recreation Facilities**, lists the various facilities in the designated region, including their acreage and general location.

**Table 4.10.4-6  
Valley North of Bakersfield and South of Bakersfield County**

Name	Acres	Location
<b>Regional Parks</b>		
Lake Wollomes	445	Delano
<b>Local/Neighborhood Parks</b>		
Delano Memorial Park	32	Delano
Lost Hills Park	7	Lost Hills
Name	Capacity	Location
<b>Public Buildings</b>		
Lost Hills Recreation Bldg.	139	Lost Hills
<b>Local/Neighborhood Parks</b>		
DiGiorgio Park	16	Arvin
DiGiorgio Recreation Bldg.	135	Arvin

Source: Kern County Parks and Recreation Master Plan, updated 2010

The Kern County Parks and Recreation Master Plan, updated in 2010, has identified a total of 4,702 acres of parkland. **Table 4.10.4-7, Kern County Parks Existing Inventory**, is a complete inventory of all the County park facilities.

**Table 4.10.4-7  
Kern County Parks Existing Inventory**

Park Name	Parks Master Plan Acres
<b>Community Parks</b>	
A. W. Noon	12.00
Belle Terrace	19.30
Boron	10.00
Buttonwillow	36.00
Casa Loma	9.00
Ed Oakley Park	1.70
Frazier Mountain	27.00
Greenfield	5.00
Victoria Araujo Park	3.00
Heritage	18.00
Inyokern	3.00
Kern Delta Park	11.75
Kernville Circle	1.00



Park Name	Parks Master Plan Acres
Lake Isabella	40.00
Lost Hills	7.00
Mojave East	8.00
Mojave West	10.00
Mountain Mesa	5.20
North Edwards	5.00
Pioneer	14.00
Potomac	5.00
Randsburg	0.20
Rexland Acres	4.00
Riverside	5.00
Rosamond	10.00
Scodie	4.00
Virginia Avenue	9.50
Wilkins	2.60
Wofford Heights	7.00
<b>Total - Community Parks</b>	<b>293.25</b>
<b>Regional Parks</b>	
Camp Condor	0.00
Kernville Fish Hatchery	0.00
Buena Vista Aquatic Rec. Area	1,585.00
Greenhorn Mt.	110.00
LeRoy Jackson	100.00
Kern River County Park Total	1,445.00
Lake Woollomes	445.00
Metro Rec. Center	107.00
Tehachapi Mt.	490.00
Lake Isabella Rec Area	-
<b>Total - Regional Parks</b>	<b>4,282</b>
<b>Community Parks Within City or Special District</b>	
Blanco Little League	6.00
Circle Park (Bakersfield)	0.10
College	17.00
Cormack Park (Wasco)	6.00
Delano Memorial	32.00
Derby Acres	3.80
DiGiorgio	16.00
Fellows	8.00
Ford City	4.10
Lamont	8.00
Panorama	24.00
Valley Acres	2.00
Westpark	5.00
<b>Subtotal, Community Parks Within City or Special District</b>	<b>127</b>
<b>Subtotal - Community Parks</b>	<b>293.25</b>

Park Name	Parks Master Plan Acres
Subtotal – Community Parks within city or park district	127
Total – Local Parks	420.25
Total – Regional Parks	4,282
Total Park Acreage	4,702.25

Source: Kern County Parks and Recreation Master Plan, updated 2010

## Local Park and Recreation Departments

The following Cities are located in Kern County and currently do not operate a parks and recreation department: Arvin, Maricopa, Taft,<sup>5</sup> Tehachapi, and Wasco. The City of Bakersfield, California City, Delano, McFarland, Ridgecrest, and Shafter all maintain parks and recreation facilities through their local departments.

### 4.10.4.2 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 Application 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,

<sup>5</sup> 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.

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.

### ***US Department of Transportation Act***

Section 4(f) of the US Department of Transportation Act of 1966 (US 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.<sup>6</sup> The California Recreational Trails Plan establishes one designated trail corridor that pass 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.<sup>7</sup>

### *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

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<sup>6</sup> California Recreational Trails Plan. 2011. *Progress Report*. [www.parks.ca.gov/trails/trailsplan](http://www.parks.ca.gov/trails/trailsplan), accessed 2018.

<sup>7</sup> The Pacific Crest National Scenic Trail includes 1,692 miles of trail improved and open in California and runs through Kern County.

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, assess the needs for the future, and develop a road map to achieving 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) 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 2018 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.

### 4.10.4.3 ENVIRONMENTAL IMPACTS

#### Thresholds of Significance

For the purposes of this Program EIR Kern COG has determined that adoption of the proposed 2018 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
- 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.

#### Methodology

This section summarizes the methodology used to evaluate the expected impacts of implementation of the 2018 RTP on parks and recreational facilities in the Kern COG region. The 2018 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 2042, implementation of the proposed 2018 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 2018 RTP conditions in 2042, 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 to parks and recreational, the greater the increase in population, the more significant the impact to 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 under served 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 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.

## 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 570,675 people by 2042. Implementation of the 2018 RTP will consume roughly 56,000 acres of agricultural/open space/vacant land. **Figure 4.10.4-1** illustrates various types of resource areas including open space, and government lands in the County.

The 2018 RTP includes land use strategies to focus development into urban areas and TPAs. As described in the existing setting, urban areas, such as Metro Bakersfield currently experience a deficiency in the acres of park per person. The additional growth focused in these areas as a result of land use strategies in the 2018 RTP would further exacerbate the existing parks deficiency. It's likely that there will be additional demand for new facilities but given that that many areas of the County are already under-served for certain types of parks it's likely that existing facilities will experience significant impacts and that new facilities will be insufficient to meet demand.

Currently, Kern County contains approximately 3,196,800 acres of all types of open space and parkland<sup>8</sup> with a population of 898,825 people, which equals about 3.56 acres per person. The proposed 2018 RTP would result in an increase of approximately 570,675 people, which would result in a ratio of approximately 2.18 acres per person assuming the amount of open space stays the same. However, as the 2018 RTP would consume 56,000 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 in to account the different community needs for parks and recreational facilities. Large areas 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

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<sup>8</sup> As described in the 2010 Kern Parks Master Plan



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 2018 RTP.

Transit and some roadway improvements included in the 2018 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. Although 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 2018 RTP would consume 56,000 acres of vacant lands. Therefore, without increasing the amount of open space and parkland, implementation of the proposed 2018 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 for their residents as well as tools to encourage development of parks, such as the use of parks 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 2018 RTP are considered significant for **Impact REC-1**. Mitigation is required; see **Mitigation Measure MM REC-1** through **MM REC-3**, below.

### ***Level of Significance Before Mitigation***

Significant at the regional and TPA levels.

### ***Mitigation Measures***

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 2018 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.

**MM REC-1:** 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-2:** 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.

**MM REC-3** 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.

### *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** 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.

### *Regional and Transit Priority Area Impacts*

By 2042, the Plan area would grow by approximately 570,675 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 in to 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. 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 the 2018 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 construction of new parks and recreational facilities would be less than significant at the regional and TPA levels.

#### 4.10.4.5 CUMULATIVE IMPACTS

To the extent that the Plan would encourage development on the periphery of the County – on the border with Los Angeles (at I-5 and SR-14) and on the border with Tulare County (along SR-99) it could increase demand for recreation facilities in LA 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 Sierra’s 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 2018 RTP on existing facilities of statewide appeal would add to similar impacts anticipated to result from RTPs in other jurisdictions. Construction of new park and recreational facilities generally results in localized impacts that are not anticipated to be cumulatively considerable.

## 4.10.5 Library Services

### 4.10.5.1 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 approximately 898,825 residents<sup>1</sup>. The County's library facilities include one main branch, located at 701 Truxtun Avenue, Bakersfield, CA 93301, 24 branches, two bookmobiles, an online site, and a digital library. There are currently 152,122 Kern County Library cardholders. The County's library materials include: 749,271 book volumes, 60,594 audio-visual items 15,038 government documents (print and microfilm/microfiche), and 4,927 other items, including magazines, maps, microfilm/microfiche, and newspapers.<sup>2</sup> The library facilities are listed in **Table 4.10.5-1, Kern County Library Facilities**. 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 2002.

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.

**Table 4.10.5-1  
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 20 Mule Team Road Boron, CA 93516
Buttonwillow Branch	101 Main Street, Buttonwillow, CA 93206

<sup>1</sup> Kern County Library. 2016. *About*. <http://www.kerncountylibrary.org/about-the-kern-county-library/>, accessed 2018.

<sup>2</sup> Personal communication, Kristie Coons, Community Liaison Kern County Library with Sylvie Josel, Impact Sciences. April 2018

Library	Location
California City Branch	9507 California City Boulevard, California City, CA 93505
Delano Branch	925 10 <sup>th</sup> 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
Shafter Branch	236 James Street Shafter, CA 93263
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 7 <sup>th</sup> Street Wasco, CA 93280
Wilson Branch Library	1901 Wilson Road, Bakersfield, CA 93304
Wofford Heights Branch	6400-B Wofford Boulevard Wofford Heights, CA 93285

Source: Kern County Library, 2018.

\*Locations that offer wi-fi

#### 4.10.4.2 REGULATORY FRAMEWORK

##### 4.10.4.2.1 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 1/8<sup>th</sup> cent or 1/4 cent sales tax for up to 16 years for library operations and capital construction.

#### 4.10.5.3 IMPACTS AND MITIGATION MEASURES

##### 4.10.5.3.1 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 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.

#### 4.10.5.3.2 Methodology

The analysis assesses the potential impacts to library facilities that could result from implementation of the proposed 2018 RTP. Implementation of the proposed 2018 RTP is analyzed at the regional level. Impacts are assessed in terms of both land use and transportation impacts. By 2042, implementation of the proposed 2018 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 2017.

#### *Determination of Significance*

The methodology for determining the significance of library resources compares the existing conditions to conditions anticipated to occur in 2042 under the 2018 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 to libraries, the greater the increase in population compared to existing conditions, the greater the impact to the existing libraries and the more likely construction of new facilities would be. The addition of new communities generally has a greater impact on 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 570,675 people and 175,394 households, the potential for impacts to 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.

#### 4.10.5.3.3 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 570,675 people over the next 24 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.<sup>3</sup>

New transportation facilities, especially those in urban areas, could facilitate access to libraries and result in increased use of some libraries. In addition, the anticipated growth in population and households would increase the demand for library facilities. 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. 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. The environmental impacts of the construction and operation of new library facilities are typically minor and are the types of impacts that have been evaluated throughout this PEIR. Specifically, the PEIR analyzes anticipated effects of regional transportation and 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.

### ***Mitigation Measures***

No mitigation is required.

### ***Level of Significance After Mitigation***

Impacts would be less than significant at the regional and TPA levels.

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<sup>3</sup> Kern County. 2009. *Draft Kern County Public Facilities Impact Fee Study*.



#### 4.10.5.4 CUMULATIVE IMPACTS

In general, impacts as a result of construction of new library facilities would be confined to the immediate area of each library. The potential for overlapping impacts from other cumulative projects is minor and impacts of the 2018 RTP would not be cumulatively considerable.

## 4.11 TRANSPORTATION AND TRAFFIC

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This section describes the current transportation system in Kern County, and discusses the potential impacts of the 2018 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.

### 4.11.1 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 4.11-1** shows Kern’s existing regional Countywide transportation networks and facilities, **Figure 4.11-2** 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 US Highways in Kern County relevant to the 2018 Plan include I-5 and US 395. There are 15 State Routes relevant to the RTP; these include State Routes 14, 33, 43, 46, 58, 65, 99, 119, 155, 166, 178, 184, 202, 204, and 223.

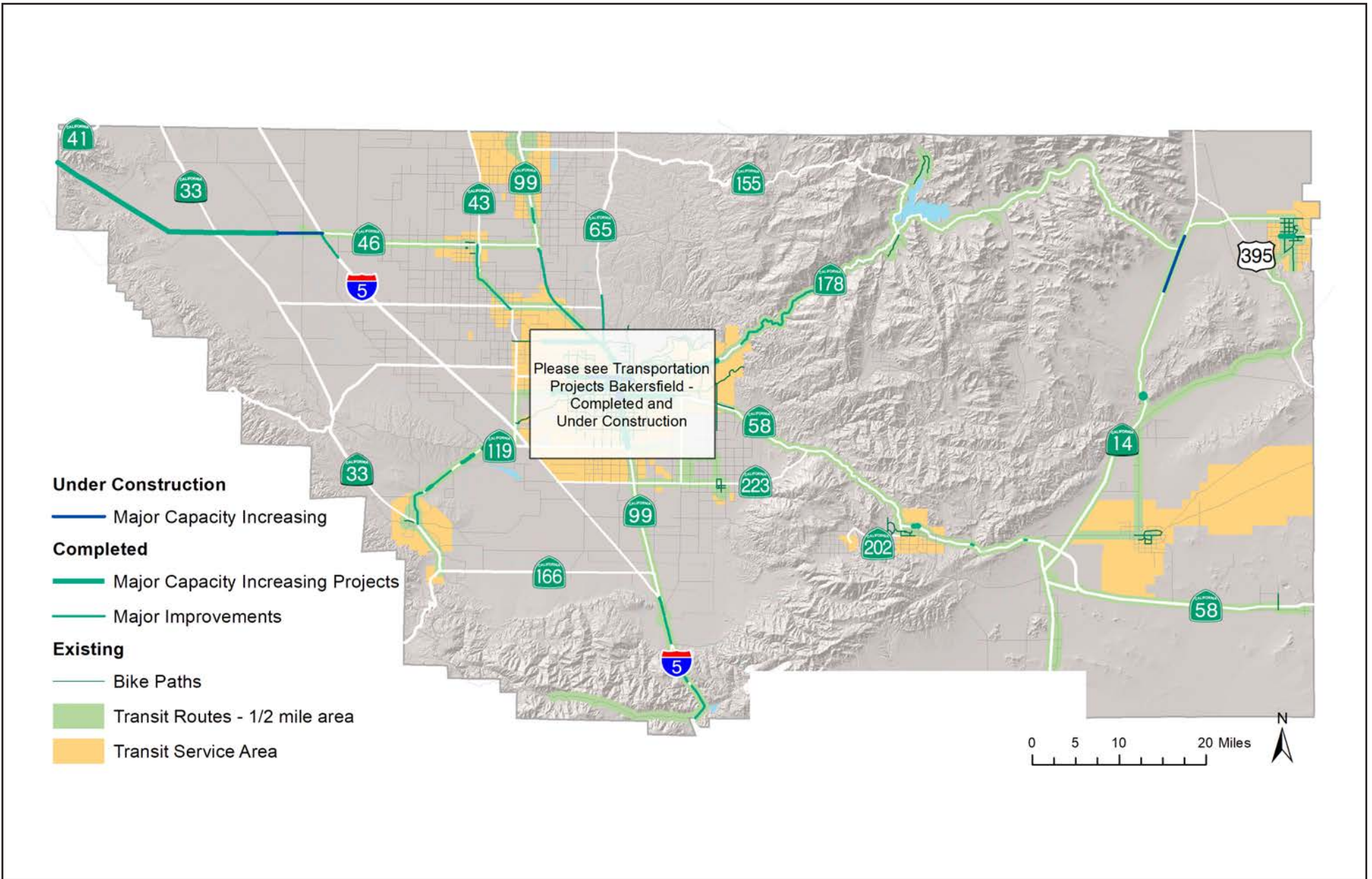
Kern COG, in conjunction with its member agencies and Caltrans, has defined its regionally significant road system for transportation modeling purposes based on the Federal Highways Administration (FHWA) Functional Classifications System of Streets and Highways. In general, the classification systems 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 their 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 4.11-1** defines the functional classes in urban areas and **Table 4.11-2** defines functional classes in rural areas.

**Table 4.11-1**  
**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

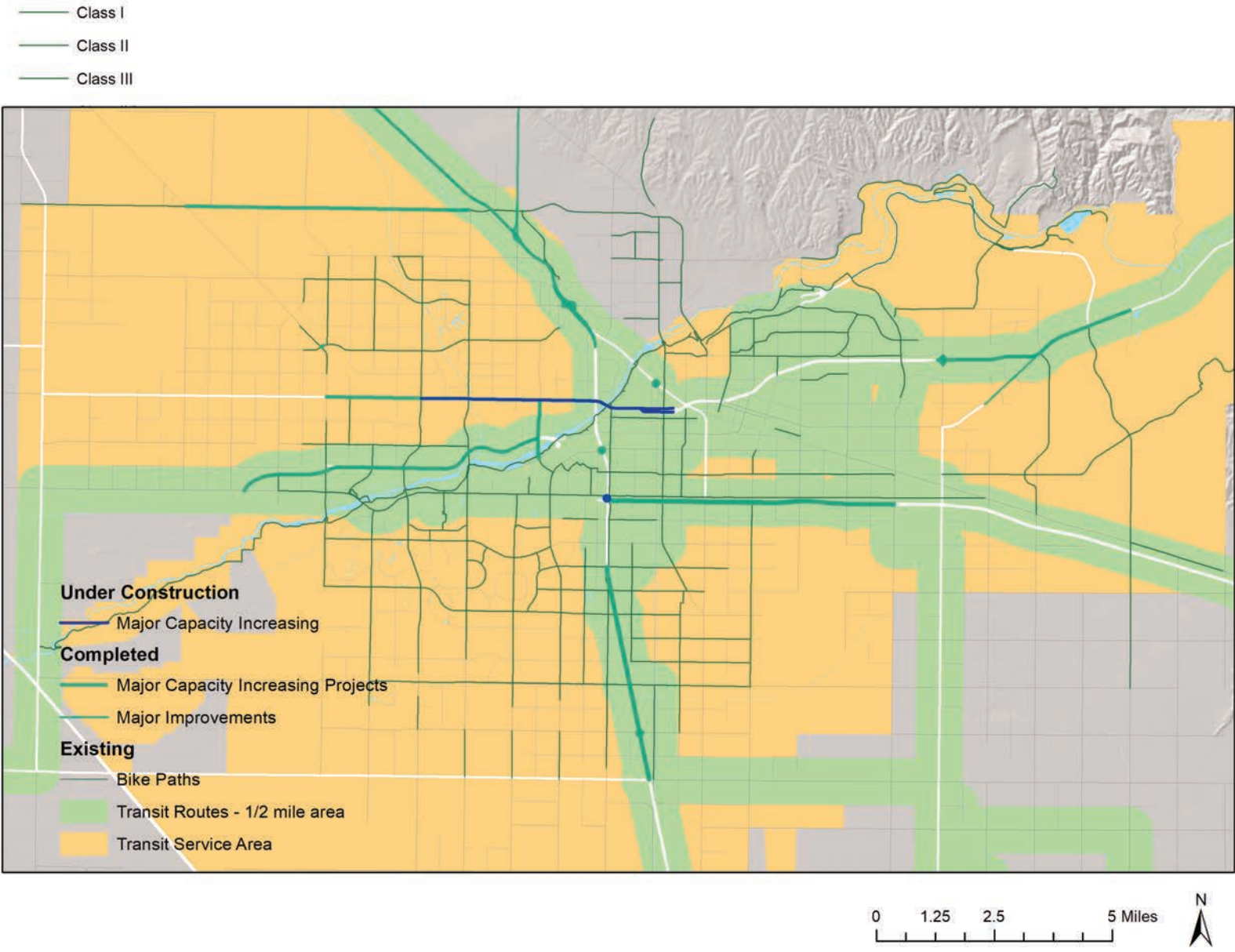
*Source: Highway Functional Classification - Concepts, Criteria and Procedures US Department of Transportation, Federal Highway Administration (1989) and Caltrans and local agency posted speed limits including school safety zones*



SOURCE: Kern Council of Governments, 2018

FIGURE 4.11-1

Countywide Regional Transportation Systems



SOURCE: Kern Council of Governments, 2018

FIGURE 4.11-2

Metro Bakersfield Regional Transportation Systems

**Table 4.11-2  
Rural Functional Classification System-Definitions**

<b>Classification</b>	<b>Primary Function</b>	<b>Direct Land Access*</b>	<b>Speed Limit**</b>	<b>Parking***</b>
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. In 2017–2018, public transit services carried nearly 7.3 million passengers in Kern County. Transit services include intercity (between urban areas), intra-city (within urban areas), demand-responsive, and fixed-route operations.

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 Park/Bakersfield; California City/Mojave/Rosamond/Lancaster/Palmdale; Lost Hills/Bakersfield; and Taft/Bakersfield.

The 2018 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 hours of operation, type of service provided. **Table 4.11-3** indicates passengers transported by Kern County transit operators.

**Table 4.11-3  
Passengers Transported by Kern County Transit Operators**

<b>Operator</b>	<b>2012/2013</b>	<b>2013/2014</b>	<b>2014/2015</b>
Arvin	68,102	68,905	78,217
California City	15,526	14,116	14,441
CTSA	42,905	43,567	46,385
Delano	155,246	162,482	150,681
GET & GET-A-Lift	6,229,975	6,103,178	5,509,080
Kern Transit	636,865	617,412	596,902
McFarland	31,642	29,958	27,700
Eastern Sierra Transit Authority	13,516	17,101	14,339
Shafter	30,662	29,764	28,064
Taft	47,240	44,217	45,011
Tehachapi	5,929	5,663	7,058
Wasco	20,368	20,308	20,047
<b>Totals</b>	<b>7,297,976</b>	<b>7,156,671</b>	<b>6,537,925</b>

*Source: Kern Council of Governments 2018*

CalVans is a public vanpool service that serves Central California. The CalVans board approved Kern COG as its newest member agency at its board meeting on September 13, 2012. As of 2017, CalVans operated 31 vanpools in Kern County.

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. As of 2017, GET operates 16 fixed routes with a fleet of 69 buses in service. GET's service area covers 111 square miles and serves approximately 492,067 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). 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 CTSA. The regular fare for GET is \$1.55; 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.<sup>1</sup>

Total transit ridership across Kern County showed a slight decline from 2012–2015, as shown in **Table 4.11-3**. Ridership for the region’s principal transit operator, GET, has also decreased in recent years despite both 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. Despite decreased ridership, possibly due to economic ramp-up after the recession, GET has made a commitment to continue improving Kern County’s air quality. In 2018, GET will begin testing two electric buses to add to its transit fleet, currently comprised of buses fueled entirely by compressed natural gas (CNG).

### **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. Kern COG estimates that as of 2017, there were approximately 350 miles of bike 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

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<sup>1</sup> Kern Council of Governments. 2018. *2018 RTP/SCS*



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 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. 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/Buttongwillow
- 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. As of 2017, 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. In 2017, UP acquired RailEx, a refrigerated railcar and warehousing service now marketed as UP Cold Connect, to offer perishable goods transportation from the San Joaquin Valley to New York. RailEx unit trains from Delano transport more than \$500 million annually of produce from California's growers that might otherwise have been shipped by truck or not shipped at all. 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 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.

During the 1980s, railroads consolidated their intermodal service networks into fewer, larger hubs. Railroads saw an opportunity to consolidate facilities through mergers, and a need to consolidate sufficient volume in one location to justify lift machines. The forecasted growth of intermodal traffic, double-stacked container trains, and the current entry of piggyback rail/truck trailer initiatives all raise questions about the adequacy of intermodal terminals to handle rail traffic increases efficiently and effectively. In 2006, RailEx and UP opened a transload facility for shipping perishable goods to Albany, New York for distribution to eastern grocery chains. This facility operates like an intermodal facility except truck loads are loaded onto railcars instead of using containerized transfers. 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 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 service 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 developing an upgrade to the SRT for inland port status. 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. Two key elements for the success of an inland port are (1) sufficient distance to warrant the cost of loading and unloading trains, and (2) a supply of empty containers nearby. The SRT is ideally located approximately 300 miles by rail from the Port of Oakland and 200 miles from the Ports of Los Angeles/Long Beach via UP (300 miles via BNSF), and has a good supply of empty shipping containers collected from multiple distribution centers within 50 miles. A first phase of development would include a container hub allowing distributors to drop empty trailers at the site that other drivers can pick up. This has the potential of eliminating a large number of truck trips over the Grapevine and through the Los Angeles basin. Thus, the SRT would benefit regional air quality, wear and tear on roads, congestion, and create jobs in Kern.

The City of Delano has worked closely with UP Cold Connect to expand use at the transload facility adjacent Sears Distribution Center and Wonderful Company citrus processing facility. The resulting capacity increase could allow shipments to and from Delano to double to nearly \$1 billion in gross shipments annually, further benefiting air quality and job creation.

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-savings 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. According to the American Association of Highway Officials, a fully loaded 80,000-pound truck has an impact on roads equal to the passage of approximately 9,000 cars.<sup>2</sup> Thus, heavy trucks contribute disproportionately to roadway deterioration; moreover, deferred maintenance and water intrusion in the roadbed continue cause additional road damage. As a result, Kern County streets and highways are subject to relatively rapid deterioration and higher rates of pavement failure.

According to the San Joaquin Valley Interregional Goods Movement Plan (2013), 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.

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 truck (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. Special attention must be given to the interregional routes to ensure that they remain in serviceable condition and that major reconstruction costs are minimized. In

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<sup>2</sup> Kern COG. 2018. 2018 RTP/SCS

addition, the bulk of highway capacity projects are focused on goods movement in and through the region.

### **Goods Movement Studies**

In 2017, Kern COG completed two goods movement studies in coordination with the San Joaquin Valley Transportation Planning Agencies. The first one was the I-5/99 Goods Movement Study that looked at options for moving goods through the SJV. The second study was the San Joaquin Valley Goods Movement Sustainable Implementation Plan (SJVGM SIP). Key recommendations for the 8-county region included:

- Identifying and recommending further analysis on connecting corridors including SR-58;
- Identifying projects that may be available for construction in the next 5 years;
- Identifying Intelligent Transportation System solutions for the corridor;
- Identifying operational improvements for goods movement in the region; and
- Identifying truck platooning along the I-5 corridor.

Specifically, the I-5/99 Goods Movement study identified two major corridor to corridor projects that would improve goods movement flow statewide. The first is the completion of the SR-58 Centennial Corridor Project. Through additional goods movement studies prepared in support of the RTP, Kern COG found trucking dominates SR 58, SR 99, and I-5 corridors. On the SR-58 segments near I-5, SR 14, and US 395, trucks accounted for 29 percent to 52 percent of the traffic. On segments of I-5 and SR 99, trucks made up 30 percent and 40 percent of the traffic. On SR 58, 56 percent of the trucks were from out of state, and on I-5/SR 99 only 15 percent were from out of state, with 57 percent destined for Southern California.

### ***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 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. 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.

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.

### *Needs and Issues*

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 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 conflict 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.

### *Existing System Performance*

**Table 4.11-4** provides data and estimates on indicators and measures such as vehicle miles traveled (VMT) for 2005 (used as a basis for evaluating compliance with AB 32 Greenhouse gas emissions) and 2017. The data shows minor increases in VMT (although possibly greater increases would be expected given the increase in the Kern region’s population), and a decline in VMT per capita. The share of trips by single-occupancy vehicles (SOV) also declined, by 5.0 percent (from 43.4 percent to 38.4 percent, representing an 11.5 percent decrease). These trends may be partially attributed to the fact that these two years bracketed a period with declining economic activity and employment associated with the 2008/2009 “great recession” from which Kern County has yet to fully recover, combined with volatile and generally increasing gasoline prices.

### *Travel by Bicycling, Walking, and Transit*

**Table 4.11-4, Transportation Measures for 2005 and 2017**, also reports model-based estimates of several other performance measures for non-motorized or active modes. These measures include the share all Kern (i.e., work and all non-work purpose) trips by walking, biking, and transit. All data (except for

transit boardings, as noted in the table) are estimates from the Kern COG travel demand model, calibrated to match available survey data. While transit mode shares decline slightly, the estimates show walk and bike trips increasing significantly between 2005 and 2017. Thus, some of the decline in VMT and SOV use is attributable to greater use of active modes.

**Table 4.11-4  
Transportation Measures for 2005 and 2017**

<b>Indicators &amp; Measures</b>	<b>2005</b>	<b>2017</b>	<b>%Change</b>
Total VMT per Weekday (Miles, in Thousands)	22,236	22,934	3.1%
Total Population (DOF E-2 Reports)	761,872	898,825	17.9%
<b>Other Indicators</b>			
Public Transit (Boardings)	22,028	21,555	(2.1%)
Transit (Walk+Drive Access)	0.7%	0.5%	(28.6%)
Bike+Walk (Non-Motorized)	6.3%	12.7%	101%
Single Occupancy Vehicle (SOV)	43.4%	38.4%	(11.5%)
High Occupancy Vehicles (HOV) 2+ per vehicle	49.6%	47.1%	(5.0%)
Per Capita Vehicle Miles Traveled (VMT) (All Trips)	29.18	25.52	(12.5%)

*Source: Kern COG 2018*

## 4.11.2 REGULATORY FRAMEWORK

### 4.11.2.1 Federal

#### *Federal Clean Air Act (CAA) Transportation Conformity*

Congress passed the first major CAA (42 U.S. Code [USC] 7506(c)) in the 1970s which give EPA primary responsibility to regulate mobile and stationary sources of emissions and direct 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.

#### *Metropolitan Transportation Planning*

The provisions of Title 23 USC Section 134 *et seq.* provides 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 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.

***Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users***

In 2005, the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU; Public Law 109–59) was signed into law. SAFETEA-LU provides funding for highways, highway safety, and public transportation totaling \$244.1 billion, representing the largest surface transportation investment ever. The Act followed two bills that highlighted surface transportation funding needs—the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21), which shaped the highway program to meet changing transportation needs throughout the nation. SAFETEA-LU addresses challenges such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment. SAFETEA-LU also gives state and local transportation agencies more flexibility to solve transportation problems. SAFETEA-LU expired in 2009 but Congress extended the legislation; the most recent extension is known as Moving Ahead for Progress in the 21st Century (MAP-21). MAP-21 reauthorized most SAFETEA-LU highway, transit and Safety programs through September 2014.

### ***Moving Ahead for Progress in the 21st Century (MAP-21)***

MAP-21 (Public Law 112–141) replaced SAFETEA-LU as the nation’s surface transportation program and extended the provisions for fiscal year (FY) 12 with new provisions for FY 13. MAP-21 funds surface transportation programs at over \$105 billion for FY 2013 and FY 2014. It is intended to create a streamlined, performance-based, and multimodal program to address challenges facing the U.S. transportation system. These challenges include improving safety, maintaining infrastructure condition, reducing traffic congestion, improving efficiency of the system and freight movement, protecting the environment, and reducing delays in project delivery. MAP-21 builds on and refines many of the highway, transit, bike, and pedestrian programs and policies first established under ISTEA in 1991. One of most significant changes from MAP-21 affecting MPOs, states, and transit operators is the new requirement for performance-based planning that involves use of performance measures and target setting.

Section 1305 of MAP-21 discusses a series of programmatic approaches to conduct environmental review. The rule promulgated the Federal Transit Administration (FTA) and Federal Highway Administration (FHWA) to establish formal procedures for handling specific environmental consultation, review, and compliance. The legislation is also intended to set priorities to further define roles and responsibilities on promoting transparency, timeliness, and describe the relationship between programmatic analysis and future tiered analysis.

### ***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 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.

Under the FAST Act, the U.S. Department of Transportation requires 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, was included in the metropolitan transportation planning rules (23 CFR Part 450 and 49 CFR Part 613). The FAST Act makes a number of changes to the statutes that underpin these regulations. Per federal requirements, long-range transportation plans must:

- be developed through an open and inclusive process that ensures public input; seeks out and considers the needs of those traditionally under served by existing transportation systems; and consults with resource agencies to ensure potential problems are discovered early in the planning process;
- be developed for a period of not less than 20 years into the future; long-range transportation plans must reflect the most recent assumptions for population, travel, land use, congestion, employment and economic activity;
- have a financially constrained element, transportation revenue assumptions must be reasonable, and the long range financial estimate must take into account construction-related inflation costs;
- include a description of the performance measures and performance targets used in assessing the performance of the transportation system;
- include a system performance report evaluating the condition and performance of the system with respect to performance targets adopted by the state that detail progress over time;
- include multiple scenarios for consideration and evaluation relative to the state performance targets as well as locally-developed measures;
- conform to the applicable federal air quality plan, called the State Implementation Plan, for ozone and other pollutants for which an area is not in attainment; and
- consider planning factors and strategies in the local context (California Transportation Commission, 2010).

### ***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 by 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 use of performance measures that includes vehicle-to-capacity ratios and level of service on a selected network of significant routes in a region.

#### **4.11.2.2 State**

##### ***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.

### ***Senate Bill 743***

SB 743 was enacted in 2013 (SB 743) and became effective in July 2014. It requires OPR and the Natural Resources Agency to amend the *State CEQA Guidelines* through developing criteria for determining the significance of transportation impacts that deemphasize traffic congestion and LOS. (Pub. Res. Code § 21099(b)). The criteria are to promote GHG reduction, multi-modal transportation networks, and a diversity of land uses. Once the Natural Resources Agency certifies these Guidelines amendments, automobile delay as measured by LOS or similar metrics is not to be considered a significant environmental impact in transit priority areas, except in any locations the amendments may specify.

In November 2017, OPR transmitted the draft SB 743 *CEQA Guidelines* to the Natural Resources Agency as part of a comprehensive *CEQA Guidelines* amendments package;<sup>3</sup> The Guideline establishes VMT (vehicle miles traveled) as the preferred transportation impact metric. In January 28, 2018, the Natural Resources Agency issued a Notice of Proposed Rulemaking to initiate the formal adoption process for OPR's proposed *CEQA Guidelines* amendments package.<sup>4</sup>

### ***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 is lies within District 6, which is headquartered in Fresno.

<sup>3</sup> Governor's Office of Planning and Research. 2017. *Current CEQA Guidelines Update*. <http://opr.ca.gov/ceqa/updates/guidelines/>, accessed April 6, 2018.

<sup>4</sup> California Natural Resources Agency. 2018. *Notice of Proposed Rulemaking*. <http://resources.ca.gov/ceqa/docs/update2018/notice-of-proposed-rulemaking.pdf>, accessed April 6, 2018.



### ***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.

### ***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) 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 sets 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:

*ZEVs are crucial to achieving the state's 2050 greenhouse gas goal of 80 percent emission reductions below 1990 levels, as well as meeting federal air quality standards. Achieving 1.5 million ZEVs by 2025 is essential to advance the market and put the state on a path to meet these requirements.*

The ZEV plan was updated in 2016. This 2016 Action Plan highlights the following priorities for ZEVs:

- Raising consumer awareness and education about ZEVs;
- Ensuring ZEVs are accessible to a broad range of Californians;
- Making ZEV technologies commercially viable in targeted applications the medium-duty, heavy-duty and freight sectors; and
- Aiding ZEV market growth beyond California.

The 2016 ZEV Action Plan introduces new actions to meet these priorities and build California's ZEV market, remove barriers to future market growth and ensure this transition benefits the state and its residents. The intent is to clearly communicate what state government will do to advance ZEVs and serve as a "to-do" list for the Governor's Office and state agencies to enhance interagency coordination.

### ***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.<sup>5</sup>

### 4.11.2.3 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 provided significant updates in the 2011 RTP to reflect 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*

In November 2016, Kern COG updated the performance-based Project Delivery Policy and Procedure reflecting SB 375 related outcomes.<sup>6</sup> 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 2017 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.

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<sup>5</sup> California Department of Transportation. 2016. *Sustainable Freight Action Plan*. [http://dot.ca.gov/hq/tpp/offices/ogm/cs\\_freight\\_action\\_plan/Documents/CSFAP\\_Main%20Document\\_FINAL\\_07272016.pdf](http://dot.ca.gov/hq/tpp/offices/ogm/cs_freight_action_plan/Documents/CSFAP_Main%20Document_FINAL_07272016.pdf), accessed May 5, 2018.

<sup>6</sup> Kern Council of Governments. 2016. *Project Delivery*. [http://www.kerncog.org/wp-content/uploads/2012/12/project\\_selection\\_policy\\_20161117.pdf](http://www.kerncog.org/wp-content/uploads/2012/12/project_selection_policy_20161117.pdf)

### ***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. The performance measures used for evaluation of the 2018 RTP in this document are intended to supplement local standards by focusing explicitly on regional system performance.

## **4.11.3 ENVIRONMENTAL IMPACTS**

### **4.11.3.1 Thresholds of Significance**

For the purposes of this PEIR, Kern COG has determined that implementation of the proposed 2018 RTP would result in significant adverse impacts to transportation if any of the following could occur:

- Results in a substantial increase in VMT and/or hours of congestion.
- Conflicts 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.
- Results in a change in air traffic patterns, including either an increase in air traffic levels or a change in location that results in substantial safety risks.
- Substantially increases hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

- Results in inadequate emergency access.
- Conflicts with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

#### 4.11.3.2 Methodology

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, 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, 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 forecasts developed using the Kern Regional Travel Demand Model (RTDM). This RTDM was used for characterizing the transportation environment divides the region into nearly 2,000 Transportation Analysis Zones. The model was developed in accordance with and validated to standards in 2010 California Transportation Commission RTP Guidelines.

Model inputs are listed below.

- Socioeconomic Data by Census Block Group
- Highway Networks
- Land Use and Accessibility for Auto Ownership Model
- Land Use, parking, pricing Travel Demand Model (TDM), Walk and Bike for Mode Choice Model
- 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 2042 with the Plan was compared to the existing regional conditions for each significance criterion to determine the significance of impacts. The 2042 transportation model output provides a regional and cumulative level of analysis for the impacts of the Plan on transportation resources.

### 4.11.3.3 Impacts and Mitigation Measures

#### Impact TR-1 Substantial increase in VMT and/or hours of congestion.

The 2018 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 4.11-5** shows changes in VMT and congested vehicle hours between 2017 and the horizon year of the Plan (2042).

**Table 4.11-5**  
**Plan Impacts on Key Transportation Measures vs. Existing and 2042 No Project**

Indicators & Measures	2017	2042	2017-2042	2042	No Project
	Existing	Plan	% Change with Plan	No Project	vs Plan % Change
Total VMT per Weekday (Miles, in Thousands)	22,934	35,299	53.92%	37,266	5.57%
Congested Vehicle Hours (Level of Service D, E, F)	561,698	904,270	60.99%	989,864	9.47%
Congested Vehicle Hours in Core Urban Areas	284,269	449,407	58.09%	526,672	17.19%
<b>Other Indicators</b>					
Public Transit (Boardings)	21,555	52,658	144.30%	27,431	47.91%
Transit (Walk+Drive Access)	0.5%	0.7%	34.70%	0.4%	(45.92%)
Bike+Walk (Non-Motorized)	12.7%	14.0%	10.26%	11.8%	(15.37%)
Single Occupancy Vehicle (SOV)	38.4%	37.7%	(1.80%)	38.2%	(1.50%)
High Occupancy Vehicles (HOV) 2+ per vehicle	47.1%	46.1%	(2.09%)	48.0%	3.99%
Per Capita Vehicle Miles Traveled (VMT) (All Trips)	25.52	24.02	(5.86%)	25.36	(5.57%)

*Source: Kern COG based on Kern COG Travel Model runs; 2017 transit boardings based on APTA and Kern COG data.*

As shown in **Table 4.11-5**, implementation of the 2018 RTP in 2042 will increase VMT and congested vehicle hours when compared to existing (2017) conditions. Overall, VMT levels will rise by over 50 percent by 2042, reflecting Kern's substantial population gains during the 24-year period. This substantial increase in absolute VMT will result in a substantial 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 over 60 under the Plan compared to 2017 conditions.

However, between 2017 and 2042 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 10.3 percent, and such active modes will represent 14.0 percent of all trips. The share of trips by single-

occupancy vehicles will fall by 1.8 percent to just under 38 percent, and high-occupancy vehicle mode share will fall slightly to 46 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 2017 and 2042. Overall VMT per capita will decline by 5.9 percent.

For informational purposes, the last two columns of **Table 4.11-5** compares the Plan against the No Project alternative in which new transportation investments cease after 2018 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 6 percent less VMT and 9 percent fewer hours in congestion. The Plan would also result in a doubling of 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 6 percent with the Project versus the 2042 No Project alternative.

Thus, comparing Plan conditions to existing conditions, impacts on Kern's overall circulation system resulting from implementation of the proposed 2018 RTP are considered potentially significant for **Impact TR-1**. Measures intended to reduce vehicle travel and improve congestion are part of the 2018 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 congestion levels and improve LOS. Mitigation is required. **Mitigation Measures TR-1 through TR-3** are described below.

### ***Transit Priority Areas***

The 2018 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 and congested vehicle hours; in particular congestion would increase more in urban areas due to increased intensity of development. As for the region as a whole, impacts on VMT and congestion in TPA areas would increase and mitigation is required; see **Mitigation Measures MM TR-1 through MM TR-3**, below.

### ***Level of Significance Before Mitigation***

Significant at the regional and TPA levels.



## *Mitigation Measures*

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 2018 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.

**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** Kern COG shall pursue funding for Tier 2 RTP projects and programs, beyond the currently financially and institutionally feasible measures included in the 2018 RTP, which may improve LOS results on roadway segments projected to be at LOS worse than E, consistent with the CMP complete streets and multimodal LOS policies.

**MM TR-3:** 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-4** Kern COG will continue to encourage and facilitate transportation projects that maximize efficiency of the transportation system, and include VMT reduction.

**MM TR-5** 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-5** 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-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.**

### ***Regional Impacts***

Level of service (LOS), as defined by the Institute of Transportation Engineers *Transportation and Traffic Engineering Handbook*, is a “qualitative (performance) measure that represents the collective factors of speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operation costs provided by a highway facility under a particular volume condition.” Under this definition, LOS is a measure from a motorist’s perspective. 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.

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 has established LOS worse than E as the threshold of significance. Local jurisdictions have adopted standards that exceed 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 2017 and 2042 Plan LOS segment analyses are shown in **Figures 4.11-3** and **4.11-4**. The projects and policies contained in the 2018 RTP are expected to improve LOS on many roadway segments. However, the figures indicate that, even with the 2018 RTP, 2042 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 E 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 4.11-5** shows that between 2017 and 2042 under Plan conditions, congested vehicle hours in the County will increase by 60.99% and by 58.09% in Core Urban Areas. In 2042 without the Plan, congested hours in the County would be 9.47 percent greater and would be 17.19 percent greater in Core Urban Areas.

Impacts on Kern's roadway operations resulting from implementation of the proposed 2018 RTP are considered significant for **Impact TR-2**. Measures intended to reduce vehicle travel and improve LOS are part of the 2018 RTP, nonetheless congestion would increase between 2017 and 2042 on CMP facilities. 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 congestion levels and improve LOS. Mitigation is required see **Mitigation Measures MM TR-1** through **MM TR-6**.

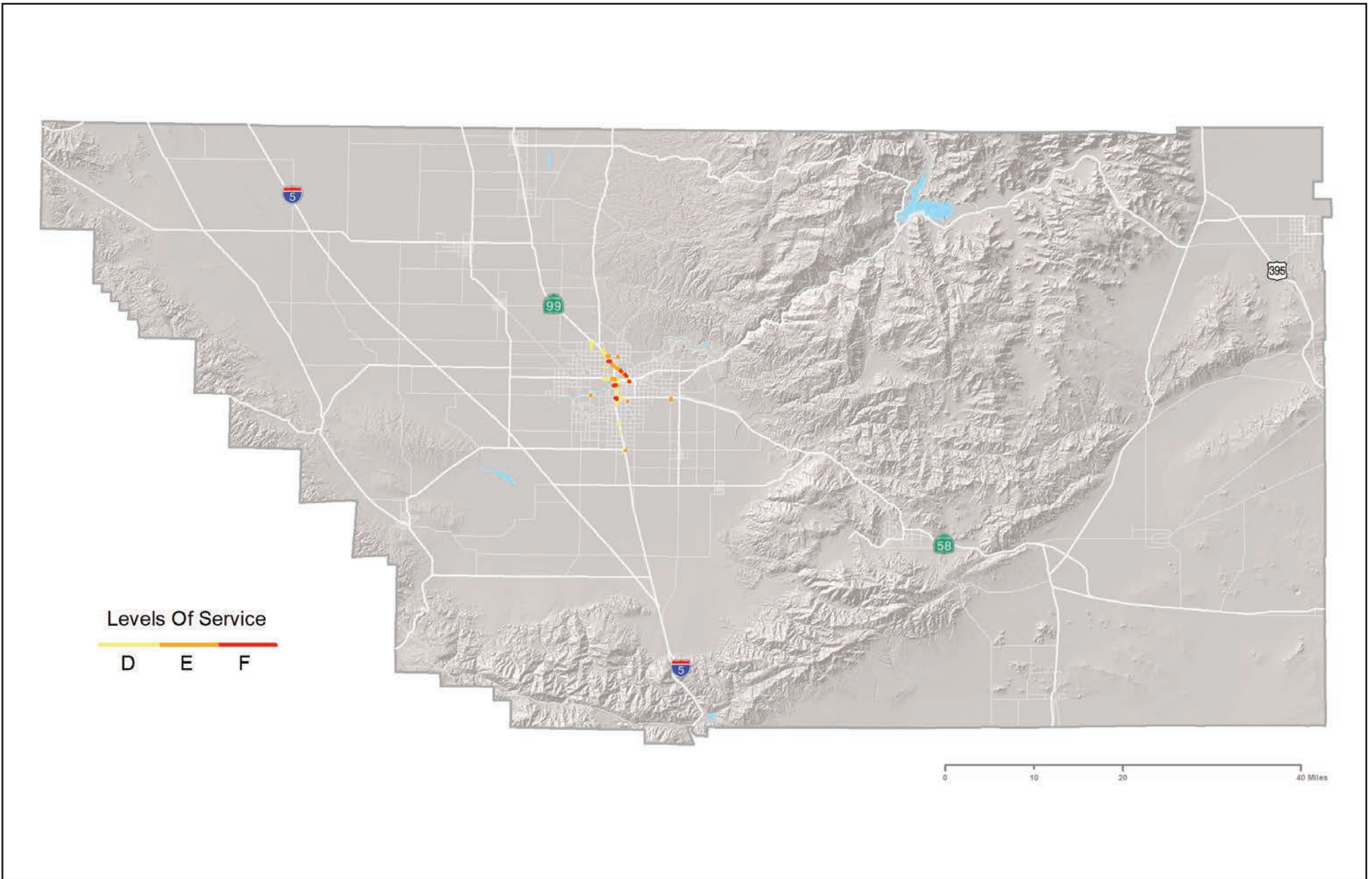
### ***Transit Priority Areas***

The 2018 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. This should reduce, but based on

Kern COG's modeling, will not eliminate at-capacity and near-capacity conditions (LOS F and LOS E) on Kern's roadways. In particular congestion will increase in urban areas including around TPAs. Impacts would be significant and mitigation is required. See **Mitigation Measures MM TR-1** through **MM TR-6**.

***Level of Significance Before Mitigation***

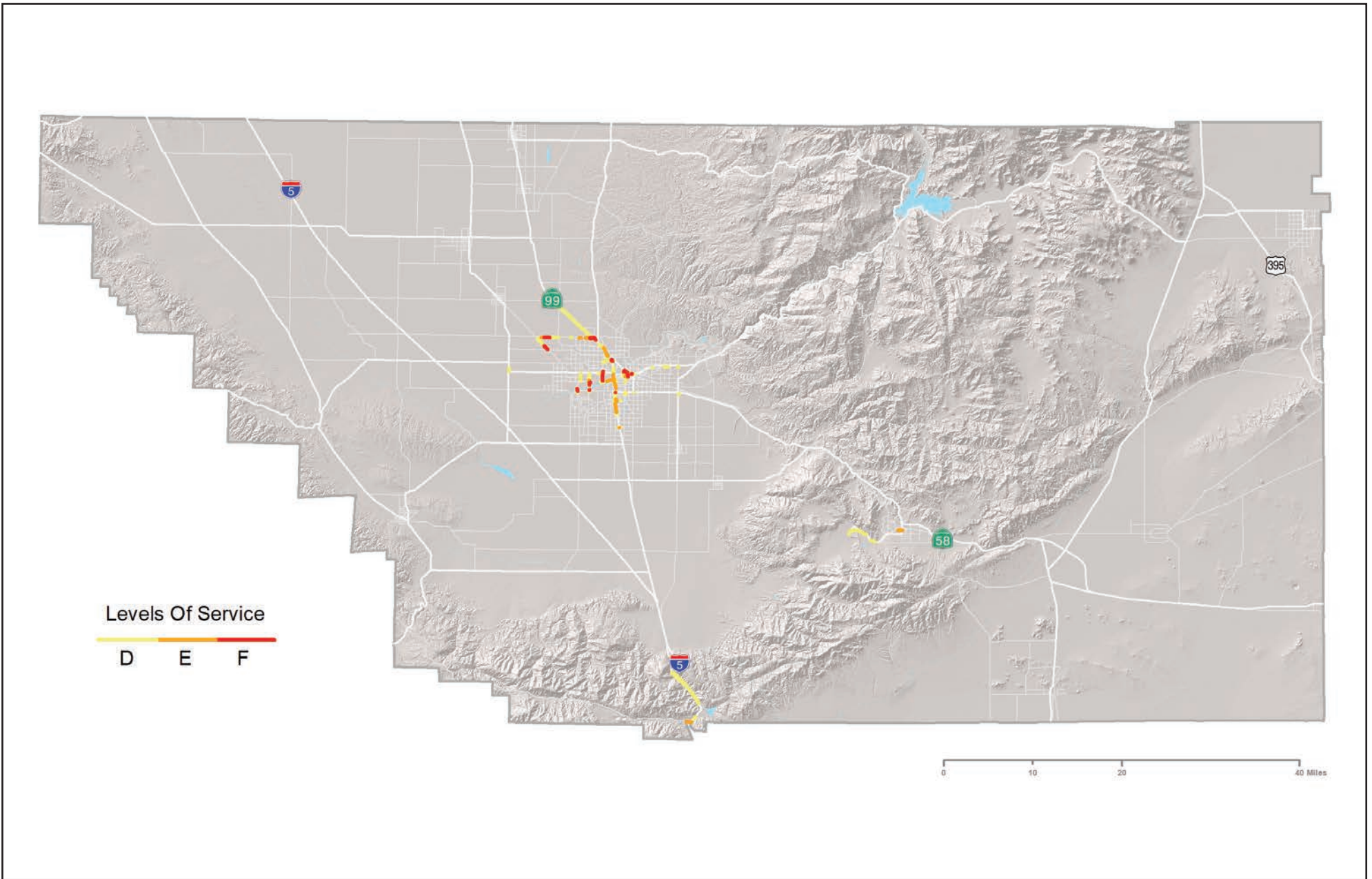
Significant at the regional and TPA levels.



SOURCE: Kern Council of Governments, 2018

FIGURE 4.11-3

2017 Level of Service



SOURCE: Kern Council of Governments, 2018

FIGURE 4.11-4

Level of Service 2018 RTP (2042)

### ***Mitigation Measure***

**MM TR-6:** Kern COG should inform jurisdictions with projected LOS E and F roadway segments under the Plan of the potential need to develop a Deficiency Plan under the Kern CMP before 2040 through the RTP process. Kern COG shall work with these agencies to identify and implement changes that would increase use of alternative transportation and other means to reduce congestion consistent with the CMP.

### ***Level of Significance After Mitigation***

Mitigation Measures **MM TR-1** through **MM TR-6** would reduce LOS deficiencies and congestion. 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 would remain significant and unavoidable.

**Impact TR-3**                    **Result in a change in air traffic patterns, including either an increase in air traffic levels or a change in location that results in substantial safety risks.**

### ***Regional Impacts***

The Plan will not in itself result in changes in air traffic patterns; however, increased population that would occur by 2042 would likely result in increased air traffic. Implementation of the Kern Airport Land Use Compatibility Plans (ALUCP) will address safety risks associated with air traffic.

### ***Transit Priority Areas***

The 2018 RTP land use policies aim to focus growth in TPAs in locations away from airport clear zones and accident potential zones. Encouraging growth in TPAs should decrease the number of Kern residents proximate to airports and potential safety risks associated with air traffic.

### ***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-4                      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 2018 RTP would not result in increased hazards due to design feature (e.g., sharp curves or dangerous intersections) or increase conflicts between incompatible uses (e.g., farm equipment and other vehicular traffic). The 2018 RTP land use policies aim to focus growth in TPAs generally located away from high-speed facilities where potentials 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 in to account potential hazards and avoids risks and 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-5                      Result in inadequate emergency access.**

***Regional Impacts***

Between now and 2042 vehicle travel 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, and technology improvements, management strategies, and mutual aid agreements. The 2018 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 2018 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 lane 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 2018 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 if they are traveling in a bus-only lane or in a standard travel lane. It is more likely that when in 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 the 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 2018 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 service. 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 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 4.10.1, Public Services – Fire**), 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 2018 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. 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.

**Impact TR-6                      Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.**

***Regional Impacts***

The 2018 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 2018 RTP would increase, rather than decrease, the performance of transit, bicycle, and pedestrian facilities; **Table 4.11-5** shows higher mode shares for each of these modes between 2017 and 2042. 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 2018 RTP/SCS 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.

## **4.11.4 CUMULATIVE IMPACTS**

Implementation of the 2018 RTP would result in an increase in density and land use development over the next 24 years. The Plan would increase congestion compared to today but would decrease congestion compared to the No Plan conditions, potentially making it attractive for people to live and work outside the region.

Implementation of the 2018 RTP/SCS 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 2018 RTP would have significant impacts related to increases in VMT and congestion. Congestion and delay from RTPs in adjacent counties would add to these significant impacts.

## 4.12 UTILITIES AND SERVICE SYSTEMS

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This section addresses the existing utilities and service systems (energy, solid waste, and wastewater) within the region and evaluates the significance of the changes in these services that could result the 2018 Regional Transportation Plan (RTP). In addition, this Program EIR provides regional-scale mitigation measures as appropriate and feasible. Sources used in this discussion include the California Energy Commission (CEC), the Kern County Waste Management Department, California State Water Resources Control Board, and CalRecycle.

### 4.12.1.1 ENVIRONMENTAL SETTING

#### Oil

The primary energy source for the United States is petroleum (referred to as “oil”), which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily since 1983; as of 2016, world consumption of oil had reached 97.7 million barrels per day.<sup>1</sup> The world supply of oil is anticipated to peak (i.e., reach the point of maximum production) sometime between now and 2040, 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.

The US consumes roughly 19.69 million barrels per day.<sup>2</sup> US oil production peaked around 1970 and has been declining ever since.<sup>3</sup> The US transportation sector is heavily dependent on oil and in 2011 represented about 29 percent of US oil consumption.<sup>4</sup>

California’s transportation sector is equally dependent upon oil, with petroleum-based fuels currently providing nearly all (99 percent) of California’s transportation energy needs.<sup>5</sup> In 2016, Californians consumed over 15 billion gallons of gasoline and diesel fuel, resulting in the estimated emission of over 130 million metric tons of greenhouse gas equivalence. According to the latest inventory of statewide greenhouse gas emissions values, in 2015, the transportation sector represented 39 percent of statewide greenhouse gas emissions.<sup>6</sup>

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<sup>1</sup> International Energy Agency, *Oil Market Report*. <https://www.iea.org/oilmarketreport/omrpublic/>, accessed 2018.

<sup>2</sup> US Energy Information Administration. 2017. *Frequently Asked Questions*. <http://www.eia.gov/tools/faqs/faq.cfm?id=33&t=6>, accessed 2018.

<sup>3</sup> U.S. Energy Information Administration. 2016. *Petroleum & Other Liquids Data: U.S. Field Production of Crude Oil*. <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=mcrfpus2&f=a>, accessed 2018.

<sup>4</sup> US Energy Information Administration. 2016. *Use of Energy in the United States Explained: Energy Use for Transportation*. [https://www.eia.gov/energyexplained/?page=us\\_energy\\_transportation](https://www.eia.gov/energyexplained/?page=us_energy_transportation), accessed 2018.

<sup>5</sup> The California Energy Commission. 2016. *California Retail Fuel Outlet Annual Reporting*. [http://www.energy.ca.gov/almanac/transportation\\_data/gasoline/piira\\_retail\\_survey.html](http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html), accessed 2018.

<sup>6</sup> California Energy Commission. 2017. *California Greenhouse Gas Emission Inventory*. <https://www.arb.ca.gov/cc/inventory/data/data.htm>, accessed 2018.

Between 2018 and 2030, the state's population is anticipated to increase at an annual compound average rate of 1.1 percent, compared with an anticipated growth rate of 2.9 percent in real personal income over the same period. These growth rates are anticipated to result in substantial increases in travel demand for California.<sup>7</sup>

According to the CEC's Transportation Energy Demand Forecasts (2018-2030), while the number of alternative fuel vehicles on the road in California has increased at rates substantially higher than growth rates for gasoline vehicles, the total number of alternative fuel vehicles in California is still small compared to the number of gasoline and diesel vehicles. In 2015, the California Department of Motor Vehicles (DMV) registered 25,554,308 light duty gasoline vehicles, 562,102 light duty diesel vehicles, 890,906 light duty hybrid vehicles, 1,554,413 light duty flex fuel vehicles, 87,087 light duty electric vehicles, and 27,644 light duty natural gas vehicles.<sup>8</sup>

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 consumer of fuels 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,

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<sup>7</sup> California Energy Commission. 2013. *2010 Transportation Energy Forecasts and Analyses for the 2009 Integrated Policy Report*.

<sup>8</sup> California Energy Commission. 2017. *Transportation Energy Demand Forecast, 2018-2030*. [http://docketpublic.energy.ca.gov/PublicDocuments/17-IEPR-05/TN221893\\_20171204T085928\\_Transportation\\_Energy\\_Demand\\_Forecast\\_20182030.pdf](http://docketpublic.energy.ca.gov/PublicDocuments/17-IEPR-05/TN221893_20171204T085928_Transportation_Energy_Demand_Forecast_20182030.pdf), accessed 2018.

buses, light-duty passenger cars, and railway locomotives accounting for 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.

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 71 percent of California's oil production and 10% of U.S. oil production.<sup>9</sup> The top five largest oil fields in California are located in Kern County including Midway-Sunset, Kern River, Cymric, South Belridge, and Elk Hills. In 2016, the top five oil fields produced over 56 percent of the total on-shore oil produced in California.<sup>10</sup>

## Electricity

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. In 2016, approximately 68 percent of the electrical power needed to meet California's demand was produced in the state. Approximately 15 percent of its electricity demand was imported from the Pacific Northwest and 17 percent from the Southwest.<sup>11</sup> In 2016, California's electricity was derived primarily from natural gas (36.48 percent), large hydroelectric

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<sup>9</sup> Kern Economic Development Foundation. 2015. *The Economic Contribution of Oil and Gas in Kern County*. <http://kedc.com/wp-content/uploads/2013/11/KEDF-Oil-and-Gas-Economic-Impact-Report.pdf>, accessed 2018.

<sup>10</sup> Department of Conservation Division of Oil, Gas, and Geothermal Resources. 2017. *2016 Report of California Oil and Gas Production Statistics*. [ftp://ftp.consrv.ca.gov/pub/oil/annual\\_reports/2016/2016\\_Annual\\_Report\\_Final\\_Corrected2.pdf](ftp://ftp.consrv.ca.gov/pub/oil/annual_reports/2016/2016_Annual_Report_Final_Corrected2.pdf), accessed 2018.

<sup>11</sup> California Energy Commission. 2017. *Total System Electric Generation*. [http://www.energy.ca.gov/almanac/electricity\\_data/total\\_system\\_power.html](http://www.energy.ca.gov/almanac/electricity_data/total_system_power.html), accessed 2018.

resources (10.21 percent), coal (4.13 percent), nuclear sources (9.18 percent), oil (0.01 percent), other petroleum coke or waste heat (0.14 percent), unspecified sources (14.39 percent) and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (25.45 percent).<sup>12</sup>

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, increasing to approximately 285,701 GWh in 2016. This represents an approximate 0.6% increase as compared to 2015, and approximately 4.92% increase as compared to 2010.<sup>13</sup> Kern County consumed 16,484 million kWh (16,484 GWh) in 2016, less than 6 percent of the State's total.<sup>14</sup>

Peak electricity demand, expressed in megawatts (MWh), measures the largest electric power requirement during a specified period, usually integrated over 1 hour. A single MWh is enough power to meet the expected electricity needs of 1,000 typical California homes. Peak demand is important in evaluating system reliability, determining congestion points on the electrical grid, and identifying potential areas where additional transmission, distribution, and generation facilities may be needed. California's peak demand typically occurs in August between 3:00 PM and 5:00 PM. High temperatures lead to increased use of air conditioning, which in combination with industrial loads, commercial lighting, and office equipment comprise the major demand for electricity consumption in the peak demand period in the state. In 2016, mid-peak electricity demand for California was about 281,334,000 MWh.<sup>15</sup>

## Natural Gas

The state produces approximately 10 percent of its natural gas, importing about 90 percent from Canada, the Rockies and the Southwest.<sup>16</sup> Natural gas supplies are derived from underground sources and brought to the surface at gas wells. Once it is extracted, gas is purified and the odorant that allows gas

<sup>12</sup> Ibid.

<sup>13</sup> California Energy Commission. 2013. *2011 Integrated Energy Commission Report- California Energy Commission Electricity Consumption by County*. <http://www.ecdms.energy.ca.gov/elecbycounty.aspx>, accessed 2018.

<sup>14</sup> California Energy Commission. 2016. *Electricity Consumption by County: Kern County*. <http://www.ecdms.energy.ca.gov/elecbycounty.aspx>, accessed 2018.

<sup>15</sup> California Energy Commission. 2016. *California Energy Demand Updated Forecast, 2017-2027*. [http://docketpublic.energy.ca.gov/PublicDocuments/16-IEPR-05/TN215745\\_20170202T125433\\_FINAL\\_California\\_Energy\\_Demand\\_Updated\\_Forecast\\_20172027.pdf](http://docketpublic.energy.ca.gov/PublicDocuments/16-IEPR-05/TN215745_20170202T125433_FINAL_California_Energy_Demand_Updated_Forecast_20172027.pdf), accessed 2018.

<sup>16</sup> California Energy Commission. 2016. *Supply and Demand of Natural Gas in California*. [http://www.energy.ca.gov/almanac/naturalgas\\_data/overview.html](http://www.energy.ca.gov/almanac/naturalgas_data/overview.html), accessed 2018.



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. Kern County consumed 2.6 billion therms of natural gas in 1990; 2.7 billion therms of natural gas in 2000 (3.8% increase from 1990), and 2.3 billion therms of natural gas in 2010 (15% decrease from 2000). In 2016, Kern County consumed 2.8 billion therms of natural gas (22% increase from 2010).<sup>17</sup>

## **Electricity and Natural Gas in Kern County**

Electricity and natural gas is served 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

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<sup>17</sup> California Energy Commission. 2018. *Gas Consumption by County*. <http://ecdms.energy.ca.gov/gasbycounty.aspx>, accessed 2018.

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. As many as 2,000 additional turbine installations are expected by 2020, providing 4,500 megawatts of power.

**Figure 4.7-3, Kern County Wind Farms**, in **Section 4.4, Biological Resources**, 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.<sup>18</sup>

### *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.<sup>19</sup> 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 the Kern County are shown in **Table 4.12-1.1, Alternative Fuel Stations**. As shown, there are 12 alternative fueling stations within the County.

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<sup>18</sup> Desert Renewable Energy Conservation Plan. 2017. *Kern County Renewable Energy Fact Sheet*. [http://www.drecp.org/counties/factsheets/Kern\\_county.pdf](http://www.drecp.org/counties/factsheets/Kern_county.pdf), accessed 2018.

<sup>19</sup> US Department of Energy. 2017. *Alternative Fuels Data Center*, <https://www.afdc.energy.gov/>, accessed 2018.

**Table 4.12.1-1  
Alternative Fuel Stations**

<b>Company/Location</b>	<b>Address</b>	<b>Type</b>
American Natural Gas	35750 Highway 58 Buttonwillow, CA 93206	CNG
Starbucks - Tesla	20673 Tracy Ave Buttonwillow, CA 93206	Electric
City of Delano	725 S Lexington St Delano, CA 93215	CNG
Walmart Delano	530 Woollomes Ave Delano, CA 93215	Electric
Petro Shopping Center - Tesla	5602 Dennis McCarthy Dr Lebec, CA 93243	Electric
Flying J	42810 Frazier Mountain Park Rd Frazier Park, CA 93243	Propane
Days Inn	14684 Aloma St Lost Hills, CA 93249	Electric
Taft City Hall	209 E Kern St Taft, CA 93268	Electric
City of Wasco	501 N F St Wasco, CA 93280	CNG
Kern Community College District Weill Institute	2100 Chester Ave Bakersfield, CA 93301	Electric
KERN FEDERAL CU	1717 Truxtun Ave Bakersfield, CA 93301	Electric
Suburban Propane	5700 S Union Ave Bakersfield, CA 93307	Propane
Kern County Superintendent of Schools	705 S Union Ave Bakersfield, CA 93307	CNG
U-Haul	102 S Union Ave Bakersfield, CA 93307	Propane
Walmart Bakersfield (Colony St)	6225 Colony St Bakersfield, CA 93307	Electric
U-Haul	107 N Chester Ave Bakersfield, CA 93308	Propane
ARRO Autogas	3400 Buck Owens Blvd Bakersfield, CA 93308	Propane
Flying J	17047 Zachary Ave Bakersfield, CA 93308	Propane
SJV Air Pollution Control District - Bakersfield	34946 Flyover Ct Bakersfield, CA 93308	Electric
HAMPTON INN NRT	8818 Spectrum Park Way Bakersfield, CA 93308	Electric
U-Haul	6201 White Ln Bakersfield, CA 93309	Propane
Shell	4050 Gosford Rd Bakersfield, CA 93309	E85
CSU Bakersfield LOT M	9001 Stockdale Highway 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

Company/Location	Address	Type
BMW BAKERSFIELD	5400 Gasoline Alley Dr Bakersfield, CA 93313	Electric
Hotel Rosedale	2400 Camino Del Rio Ct Bakersfield, CA 93313	Electric
FAMILYMOTORSAG	6000 Wible Rd Bakersfield, CA 93313	Electric
Easy Trip - Tesla	29541 Stockdale Hwy Bakersfield, CA 93314	Electric
ARRO Autogas	16660 Sierra Hwy	Propane
Anthony's Grill - Tesla	16940 California 14 Mojave, CA 93501	Electric
California Highway Patrol	1365 State Highway 58 Mojave, CA 93501	Electric
Mojave Air and Space Port (MASP)	16999 Airport Blvd Mojave, CA 93501	Electric
California City Correctional Center (CAC)	22844 Virginia Blvd California City, CA 93505	Electric
TEHACHAPI CITY HALL	128 Rte 58 Tehachapi, CA 93561	Electric
City of Arvin	205 1/2 Langford Ave Arvin, CA 93203	CNG
City of Delano	725 S Lexington St Delano, CA 93215	CNG
Delano Regional Medical Center	1401 Garces Hwy Delano, CA 93215	Electric
Caltrans District 6	805 S Lexington St Delano, CA 93215	Electric
Golden Empire Transit	1830 Golden State Ave Bakersfield, CA 93301	CNG
Jim Burke Ford	2001 Oak St Bakersfield, CA 93301	Electric
Kern County Superintendent of Schools	705 S Union Ave Bakersfield, CA 93307	CNG
Caltrans District 6	1226 Olive Dr Bakersfield, CA 93308	Electric
United Parcel Service	3800 Sillect Ave Bakersfield, CA 93308	Propane
United Parcel Service	3800 Sillect Ave Bakersfield, CA 93308	Electric
Caltrans District 6	1200 Olive Dr Bakersfield, CA 93308	Electric
Nissan of Bakersfield	2800 Pacheco Rd Bakersfield, CA 93313	Electric
United Parcel Service	1522 Sabovich St Mojave, CA 93501	Propane
United Parcel Service	711 W Ridgecrest Blvd Ridgecrest, CA 93555	Propane
Inyokern Tesla Supercharger	1353 Brown Road Inyokern, CA 93527	Electric
Jim Burke Lincoln Mercury	5300 Gasoline Alley Bakersfield, CA 93313	Electric

Source: Kern COG 2017

The following descriptions of alternative fuels are from the United States Department of Energy's Alternative Fuels Data Center website.

**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<sub>4</sub>)—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<sub>2</sub>). 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 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 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.<sup>20</sup>

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. During 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) 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.

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<sup>20</sup> California Center for Sustainable Energy. 2013. *San Joaquin Valley Plug in Electric Vehicle Readiness Plan*. [http://energycenter.org/sites/default/files/docs/nav/programs/pev-planning/San\\_Joaquin\\_Valley\\_PEV\\_Readiness\\_Planning\\_Guide.pdf](http://energycenter.org/sites/default/files/docs/nav/programs/pev-planning/San_Joaquin_Valley_PEV_Readiness_Planning_Guide.pdf), accessed 2018.

## 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 4.6, Greenhouse Gases**.

### 4.12.1.2 REGULATORY FRAMEWORK

#### 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 conservation of electric energy. Additionally, PURPA created a new class of nonutility generators, small power producers, from which, along with qualified cogenerators, utilities are required to buy power.

PURPA was in part intended to augment electric utility generation with more 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 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 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.

## 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***

AB 1007 requires the CEC to prepare a state plan to increase the use of alternative fuels in California. The plan shall include an evaluation of alternative fuels for emissions or criteria air pollutants, air toxics, GHGs, water pollutants, and other harmful substances, and their impacts on petroleum consumption. The plan shall set goals for increased alternative fuel use in the state for the years 2012, 2017, and 2022 and recommend policies to ensure the alternative fuel goals are attained, including standards on transportation fuels and vehicle and policy mechanisms to ensure vehicles operating on alternative fuels use those fuels to the maximum extent feasible. The plan was adopted in December 2007.

### ***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 target 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 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 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 2005 Building Energy Efficiency Standards were adopted in November 2003, took effect October 1, 2005. The Energy Commission adopted the latest Building Energy Efficiency Standards in May 2012.

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, effecting all construction after January 1, 2020. The rules will make California the first state in the nation to require solar panels on new homes.

### ***SB 107, Renewable Energy Procurement***

This law requires investor owned utilities such as Pacific Gas and Electric and Southern California Edison to have 20 percent of its 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.

The PUC has a rulemaking in progress to reconcile its decisions with SB 1, and it also continues to hold public workshops to continue designing program elements.

Current incentives provide an upfront, capacity-based payment for a new system. The CSI incentive system will change in 2007 when it moves to performance-based payments. In its August 24, 2006, decision, the CPUC shifted the program from volume-based to performance-based incentives and clarified many elements of the program's design and administration.

### ***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 Portfolios 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 expands 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.<sup>21</sup>

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<sup>21</sup> 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 ([www.cpuc.ca.gov/rps\\_homepage/](http://www.cpuc.ca.gov/rps_homepage/), accessed 2018).

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 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).

***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 (CO<sub>2</sub>) 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 4.6, *Greenhouse Gases*, for details regarding this regulation.

***CARB's 2017 Update to Climate Change Scoping Plan (November 2017)***

CARB's Climate Change Scoping Plan, which functions as a roadmap to achieve the California GHG reductions required by AB 32 and SB 32 through subsequently enacted regulations, is discussed in detail in **Section 4.6, Greenhouse Gases**. On December 14, 2017, CARB approved the final version of *California's 2017 Climate Change Scoping Plan (2017 Scoping Plan Update)*, which outlines the proposed framework of action for achieving California's new SB 32 2030 GHG target: a 40 percent reduction in GHG emissions by 2030 relative to 1990 levels (CARB 2017). The 2017 Scoping Plan Update identifies key sectors of the implementation strategy, which includes improvements in low carbon energy, industry, transportation sustainability, natural and working lands, waste management, and water. SB 350 and other regulations are expected to decarbonize the electricity sector over time, which will in turn reduce the consumption of fossil-fuel-based energy for transportation.

## ***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.

### **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 an comprehensive and integrated Kern Regional Energy Plan;
- conduct an inventory and needs assessment of local resource, 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.



### 4.12.1.3 IMPACTS AND MITIGATION MEASURES

#### Thresholds of Significance

For the purposes of this EIR, Kern COG has determined that adoption and/or implementation of the proposed RTP (including RTP policies, Sustainable Communities Strategy [SCS], and transportation project list and financing plan) would result in significant energy impacts, if any of the following would occur:

- Substantially increase the consumption of electricity, natural gas, gasoline, diesel, or other nonrenewable energy types.
- Use substantial amounts of electricity and natural gas, thereby requiring the construction of new facilities and sources of energy or major improvements to local infrastructure.

#### Methodology

Estimated energy consumption in 2042 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 future conservation efforts cannot be fully 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 2017 for Kern County was used as the existing use and was generated from Kern COG travel model. Expected future transportation gasoline consumption for the year 2042, 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 for 2016 was obtained from the CEC.<sup>22,23</sup> The combined electricity and natural gas use was estimated by Kern COG based on standard energy consumption factors.

#### *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

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<sup>22</sup> California Energy Commission. 2017. *Electricity Consumption by County: Kern County*. <http://ecdms.energy.ca.gov/elecbycounty.aspx>, accessed 2018.

<sup>23</sup> California Energy Commission. 2017. *Gas Consumption by County: Kern County*. <http://ecdms.energy.ca.gov/gasbycounty.aspx>, accessed 2018.

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 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 (2042) Plan conditions.

Implementation of the 2018 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 2018 RTP. Project-specific impacts vary and appropriate mitigation measures would need to be developed on a project-by-project basis, as appropriate.

### **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                      Substantially increase the consumption of electricity, natural gas, gasoline, diesel, or other nonrenewable energy types.**

### *Regional Impacts*

Regional growth planned as part of the 2018 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 or 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 in 2018, will begin testing two electric buses to further decrease its emissions. GET has also installed bike racks on all buses to facilitate intermodal trips. Kern Regional Transit (KRT) has implemented state and federal grants to acquire capital items such as replacement of diesel buses, replacement of CNG buses, a CNG fueling site, and bus shelters. The 2018 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 2042, indicating a more efficient transportation system. **Table 4.12.1-2, Gasoline and Diesel Consumption**, summarizes the expected gasoline consumption changes between 2017 and 2042 with the investments in the RTP and without (the No Project Alternative).

**Table 4.12.1-2  
Gasoline and Diesel Consumption**

Scenario	Vehicle Miles Travelled (billions of miles)	Gasoline Consumption (million gallons)	Diesel Consumption (million gallons)
Existing (2017)	8.37	325.91	236.08
2018 RTP (2042)	12.88	269.95	296.64
No Project (2042)	13.60	288.09	310.03

*Source: Kern COG 2017 Travel Model*

The population in Kern County is expected to increase by 580,675 by 2042. As indicated in **Table 4.12.1-2**, gasoline consumption would decrease by 17 percent by 2042 under the 2018 RTP and 12 percent under the No Project scenario. Diesel use would increase by approximately 26 percent. As discussed above, vehicle use would reduce as transit options become more prevalent. In addition, vehicles in 2042 are expected to be more efficient and use less gasoline. The increase in diesel would occur due to the increase in truck and other diesel-powered vehicles.

The anticipated housing associated with population growth would generate additional demand for energy (i.e., electricity and natural gas). As indicated in **Table 4.12.1-3, 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 2042 compared to 2017, although per household use would decrease.

**Table 4.12.1-3  
Residential Energy Use**

<b>Scenario</b>	<b>Total (Billion BTU)</b>	<b>Million BTU/Household</b>
Existing (2017)	17,057	63.6
2018 RTP (2042)	27,629	62.3
No Project (2042)	29,175	60.8

*Source: Kern COG 2018*

*US Energy Information Administration (EIA) – 2009 Residential Energy Consumption Survey (hhld type factors): CA Energy Commission – Energy Consumption Reports by County 2016 (base year data)*

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.

Although, higher efficiency development is anticipated to reduce the demand for energy, additional sources for electricity generation and natural gas would need to be pursued to accommodate demand. 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 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 County; 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. The county's dependence on energy and natural resource production as part of our economic structure is reflected in the fact that all 10 of the county's top tax payers are either oil-producing and/or processing companies, renewable energy producers or mining operations.

With the construction of higher efficiency buildings and 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 beyond the scope of this analysis to project 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 assure 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 2018 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**.

### *Transit Priority Areas*

Implementation of the 2018 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. As indicated in **Table 4.12.3**, forecasted urban development and growth that would be accommodated by the transportation investments and land use strategies in the 2018 RTP would result in more overall use of energy resources in 2042 than in 2017.

### *Level of Significance Before Mitigation*

The 2018 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*

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 2018 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.

**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 2018 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** 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.

### *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 increase 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. As discussed above, Kern County is the top oil and natural gas producer in California. In addition, the power plants located in Kern County generate more electricity than any other County<sup>24</sup> and the County produces 1.3 million megawatts of wind energy each year. 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. 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, and 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**.

### *Level of Significance Before Mitigation*

Potentially significant at the regional and local levels.

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<sup>24</sup> California Energy Commission. 2017. *Energy Facilities Siting*. <http://www.energy.ca.gov/sitingcases/>, accessed 2018.

### *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.

#### **4.12.1.4 CUMULATIVE IMPACTS**

The increase in energy demand that is anticipated to occur as 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 2018 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.<sup>25</sup> Many third world countries are adopting western lifestyles which include personal automobiles, use of energy in the home, and 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 the Kern County in accordance with state law will require the implementation a variety of energy efficiency measures to decrease energy consumption as a means to reduce GHG emissions, implementation of the RTP would result in a cumulative considerable increase in energy consumption.

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<sup>25</sup> United Nations. 2004. *Economic and Social Affairs: World Population to 2300*.

### 4.12.2.1 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 4.12.2-1, 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. The treated effluent is stored in a 240,000-gallon storage pond before being discharged into Sycamore Creek. The plant has been rated with a capacity of approximately 0.25 million gallons per day (mgd).

#### **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 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.

**Table 4.12.2-1**  
**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 <sup>a</sup>	0.25*	0.25
County of Kern	Buena Vista Aquatic Recreation Area Wastewater System <sup>b</sup>	0.2*	0.2
California City	California City Wastewater Treatment Plant <sup>c</sup>	0.8	1.5
City of Taft	California Correctional Institute Facility's Wastewater Treatment plant <sup>d</sup>	0.35	1.5
City of Arvin	City of Arvin Wastewater Treatment Plant <sup>i</sup>	1.25	2.0
City of Bakersfield	City of Bakersfield Treatment Plant 2 <sup>d</sup>	13.7	25
City of Bakersfield	City of Bakersfield Treatment Plant 3 <sup>d</sup>	17.3	32
City of Delano	City of Delano Wastewater Treatment Facility <sup>e</sup>	8.8*	8.8
City of McFarland	City of McFarland Wastewater Treatment Facility <sup>f</sup>	1.1	1.6
City of Ridgecrest	City of Ridgecrest Wastewater Treatment Plant <sup>g</sup>	2.7	3.6
North of the River Sanitary District	City of Shafter/North of River Sanitary District Number 1 Wastewater Plant <sup>h</sup>	5.32	7.5
City of Tehachapi	City of Tehachapi Wastewater Treatment Plant <sup>i</sup>	1.5*	1.5
City of Wasco	City of Wasco Wastewater Treatment Facility Plant <sup>j</sup>	1.7	2.9
Golden Hills Sanitation Company	Golden Hills Sanitation Company Wastewater Treatment Plant <sup>k</sup>	0.025	0.200
Kern Sanitation Authority	Kern Sanitation Authority Wastewater Treatment Plant <sup>b</sup>	5.5	7.5
Lamont Public Utilities District	Lamont Public Utilities District Plant <sup>l</sup>	1.4	2.0
County Service Area 39.8	Reeder Tract County Service Area 39.8 Wastewater System <sup>m</sup>	0.04*	0.04
County of Kern	Sheriff's Lerdo Facility Wastewater System <sup>m</sup>	0.54	0.54
Stallion Springs Community Services District	Stallion Springs Community Services District Wastewater Treatment Facility <sup>n</sup>	0.1	0.5
Ford City-Taft Heights	Taft Municipal Wastewater Treatment Facility <sup>o</sup>	1.3	1.5
	<b>Total</b>	<b>53.09</b>	<b>99.13</b>

*Note:*

\* Assuming maximum flows.

*Sources:*

<sup>a</sup> Bear Valley CSD. Collection System. 2008. <http://bbarwa.org/collection-system/>, accessed 2018.

<sup>b</sup> Kern County Waste Management. Sewer Information – What We Do. <http://www.kerncountywaste.com/sewer-information#what>, accessed 2018.

<sup>c</sup> California City. California City Wastewater Treatment Plant. <http://www.californiacity-ca.gov/CC/index.php/work-orders-3>, accessed 2018.

<sup>d</sup> City of Bakersfield. Wastewater Treatment Plants. [http://www.bakersfieldcity.us/gov/depts/public\\_works/sewer/wastewater\\_treatment\\_plants.htm](http://www.bakersfieldcity.us/gov/depts/public_works/sewer/wastewater_treatment_plants.htm), accessed 2018.

<sup>e</sup> City of Delano, 2010 Urban Water Management Plan. <http://www.cityofdelano.org/DocumentCenter/View/109>, accessed 2018

<sup>f</sup> City of McFarland, Sewer. <https://www.mcfarlandcity.org/222/Sewer>, accessed 2018.

<sup>g</sup> City of Ridgecrest, Wastewater Treatment Plant Facility Plan. [https://ridgecrest-ca.gov/uploadedImages/Departments/Public\\_Works/WWTPFP\\_Review\\_Draft\\_\\_102015.pdf](https://ridgecrest-ca.gov/uploadedImages/Departments/Public_Works/WWTPFP_Review_Draft__102015.pdf), accessed 2018.

<sup>h</sup> North of River Sanitary District, <http://norsd.com/>, accessed 2018.

<sup>i</sup> City of Tehachapi, Wastewater. <http://www.liveuptehachapi.com/index.aspx?NID=92>, accessed 2018.

<sup>j</sup> City of Wasco, Public Works Department. <http://www.ci.wasco.ca.us/city-departments/public-works/>, accessed 2018.

<sup>k</sup> Golden Hills Community Service District, DEIR for Golden Hills Wastewater Treatment System Improvement Project. [https://www.kerncounty.com/planning/pdfs/eirs/golden\\_hills/ghwts\\_deir\\_vol1.pdf](https://www.kerncounty.com/planning/pdfs/eirs/golden_hills/ghwts_deir_vol1.pdf), accessed 2018.

<sup>l</sup> Lamont Public Utilities District, Sewer Collection System. <http://lpud.org/sewer/>, accessed 2018.

Responsible Agency	Wastewater Facility	Current Flow (mgd)	Capacity Flow (mgd)
<sup>m</sup> Kern County, <i>Integrated Waste Management Plan</i> . <a href="http://www.kernirwmp.com/documents/Prioritization/CK.pdf">http://www.kernirwmp.com/documents/Prioritization/CK.pdf</a> , accessed 2018			
<sup>n</sup> California State Water Resources Control Board (SWRCB), <i>Stallion Springs Community Services District Wastewater Treatment Facility</i> . <a href="https://www.waterboards.ca.gov/rwqcb5/board_decisions/adopted_orders/kern/r5-2008-0621_enf.pdf">https://www.waterboards.ca.gov/rwqcb5/board_decisions/adopted_orders/kern/r5-2008-0621_enf.pdf</a> , accessed 2018.			
<sup>o</sup> City of Taft, <i>Sewer</i> . <a href="http://www.cityoftaft.org/pview.aspx?id=5368&amp;catid=562">http://www.cityoftaft.org/pview.aspx?id=5368&amp;catid=562</a> , accessed 2018.			

## 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 1.5 mgd of wastewater to tertiary levels.

## California Correctional Facility Wastewater Treatment Plant

The City of Taft operates the Correctional Facility's WWTP. 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 through 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 taken to a composting site. The plant currently treats approximately 1.25 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. 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.<sup>1</sup> The WWTP 2 currently treats approximately 14.5 of wastewater,

<sup>1</sup> California Water Service, *2015 Urban Water Management Plan, Bakersfield District*. [https://www.calwater.com/docs/uwmp2015/bk/2015\\_Urban\\_Water\\_Management\\_Plan\\_Final\\_\(BK\).pdf](https://www.calwater.com/docs/uwmp2015/bk/2015_Urban_Water_Management_Plan_Final_(BK).pdf), accessed 2018.

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 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 8.8 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 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 1.0 mgd and has been rated with a capacity of 1.1 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 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.<sup>2</sup>

### **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 (NORSDD)/City of Shafter WWTF became vested in NORSDD 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 facility's current 7.5 mgd of raw sewage capacity or 2.5 mgd. It is anticipated 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 NORSDD 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 head works 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 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.<sup>3</sup>

<sup>2</sup> Provost & Pritchard Consulting Group, *Water Treatment Plant Facility Plan, City of Ridgecrest* [https://ridgecrest-ca.gov/uploadedImages/Departments/Public\\_Works/WWTPFP\\_Review\\_Draft\\_\\_102015.pdf](https://ridgecrest-ca.gov/uploadedImages/Departments/Public_Works/WWTPFP_Review_Draft__102015.pdf), accessed 2018.

<sup>3</sup> 2015 Tehachapi Regional Urban Water Management Plan. <http://www.liveuptehachapi.com/DocumentCenter/View/3308>, accessed 2018.

### **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 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 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 gallons per day but is designed for a peak flow rate of 100,000 gallons per day and is permitted for 200,000 gallons a day. The plant was constructed in 1984.

### **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.

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 1.40 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.<sup>4</sup>

### **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.

### **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

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<sup>4</sup> City of Shafter, *Urban Water Management Plan Update for 2015*. <http://www.shafter.com/DocumentCenter/Home/View/970>, accessed 2018.

to the agricultural producers and has a profit sharing agreement with the producer in exchange for the water.

#### **4.12.2.2 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 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 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 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 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.<sup>5</sup> 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

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<sup>5</sup> California State Water Resources Control Board, *About Us*. [https://www.waterboards.ca.gov/about\\_us/](https://www.waterboards.ca.gov/about_us/), accessed 2018.

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 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.

### 4.12.2.3 ENVIRONMENTAL IMPACTS

#### Thresholds of Significance

For the purposes of this EIR, Kern COG has determined that adoption and/or implementation of the proposed 2018 RTP would result in significant impacts to the County's wastewater, if any of the following would occur:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
- Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction 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 (2042) demand for wastewater facilities and compares future demand under the 2018 RTP to the existing capacity.

Both short-term construction related impacts and long-term or permanent impacts from new facilities resulting from implementation of the 2018 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

<b>Impact WW-1</b>	<b>Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.</b>
<b>Impact WW-2</b>	<b>Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.</b>
<b>Impact WW-3</b>	<b>Result in the determination by a wastewater treatment provider that it has inadequate capacity to serve projected demand in addition to existing commitments.</b>

### *Regional and Transit Priority Area Impacts*

Wastewater generation rates are closely tied to population growth. The total population of Kern County is expected to grow by approximately 570,675 persons or 63 percent from 2017 to 2042, thus wastewater generation is anticipated to increase by up to 63 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 4.12.2-1**, 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 99.13 mgd of flow capacity. Based on the current flows, the wastewater treatment plants are operating at approximately 54 percent capacity. Consequently, there is a remaining capacity of approximately 46 percent or approximately 45 mgd of flow capacity. This may not be sufficient to accommodate the wastewater flows produced by anticipated increased population especially because population growth may not occur where existing wastewater treatment capacity exists. As such, new or expanded wastewater treatment plants could be required which would be 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 increase demand for wastewater treatment facilities, increases in housing and population would increase 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 2018 RTP could also require construction of new wastewater infrastructure in existing urbanized areas with greater conveyance capacity.

It is anticipated that development under the 2018 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 results in less than significant effects. Any impacts from construction of new wastewater treatment facilities would occur at the local level. Potential construction and operation impacts are not foreseeable at this time. To the extent that any significant impacts could result from the unique characteristics of a specific project site, those impacts would be speculative at this time.

#### ***Level of Significance Before Mitigation***

Less than significant at the regional and TPA level.

#### ***Mitigation Measures***

No mitigation is required.

#### ***Level of Significance After Mitigation***

Impacts regarding exceeding treatment requirements, impacts from construction of facilities and inadequate capacity are considered less than significant at the regional and TPA level.

#### **4.12.2.4 CUMULATIVE IMPACTS**

The 2018 RTP includes transportation projects and development in the region. The Plan targets growth in urban areas. However, the 2018 RTP also includes new development in areas outside the urban cores that could result in additional demand for wastewater outside the region. Wastewater conveyance and treatment infrastructure that would be impacted by the 2018 RTP is contained within Kern County and substantial addition to cumulative impacts in other areas is not anticipated.

### 4.12.3.1 ENVIRONMENTAL SETTING

#### Existing Conditions

In 2016, Kern County residents produced a total of 1,064,143 tons of solid waste, an increase of 139,629 tons compared to solid waste generated in 2010. Compared to the state's total waste of 35,636,858 tons, the County was responsible for approximately 3 percent of the state's total solid waste tonnage.<sup>1</sup>

#### 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. The Department's goal is to divert as much material as possible from landfill burial to prolong the landfill's life.

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<sup>1</sup> Cal Recycle. 2016. *2016 Landfill Summary Tonnage Report*.

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, 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 material at local landfills.

Compacted waste is "covered" each day with "daily cover" including dirt, tarps, and other alternative materials.

**Table 4.12.3-1, Active Solid Waste Landfills in Kern County**, provides information on active solid waste landfills in the County.

**Table 4.12.3-1  
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	12/31/2038	4,500	53,000,000	34,994,127
Boron Sanitary Landfill	11400 Boron Ave Boron, CA 91536	01/01/2037	200	1,002,819	94,851
Edwards AFB-Main Base Landfill	6th S, Rosemond Blvd Edwards AFB, CA 93524	12/31/2028	120	2,250,000	1,078,875
H.M. Holloway Landfill	13850 Holloway Rd Los Hills, CA 93249	01/31/2019	2,000	12,600,000	8,350,000
Ridgecrest Sanitary Landfill	3301 W Bowman Rd Ridgecrest, CA 93555	12/31/2045	701	10,500,000	5,037,428
McKittrick Waste Treatment Site	56533 Highway 58 McKittrick, CA 93251	12/31/2029	1,180	2,091,800	841,498
Mojave-Rosamond Sanitary Landfill	400 Silver Queen Rd Mojave, CA 93501	12/31/2019	470	2,262,243	606,848
Shafter-Wasco Sanitary Landfill	17621 Scofield Ave Shafter, CA 93249	12/31/2027	1,500	21,895,179	7,901,339
Taft Sanitary Landfill	13351 Elk Hills Rd Taft, CA 93268	12/31/2078	800	11,000,000	7,380,708
Tehachapi Sanitary Landfill	12001 Tehachapi Blvd Tahechapi, CA 93561	01/01/2020	1,000	4,000,000	1,486,101
U.S. Borax Inc.-Gangue/Refuse Waste Pile	14486 Borax Rd Boron, CA 93516	01/01/2023	443	8,500,000	995,196
Clean Harbors Buttonwillow LLC	2500 West Lokern Rd Buttonwillow, CA 93206	01/01/2040	10,482	14,293,760	-

Source: Cal Recycle, *Solid Waste Information System (SWIS)*.

<http://www.calrecycle.ca.gov/SWFacilities/Directory/SearchList/List?COUNTY=Kern&OPSTATUS=Active>, accessed 2018.

## 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 4.12.3-2, Active Transfer Stations in Kern County**, provides information on active transfer stations in the County.

**Table 4.12.3-2  
Active Transfer Stations in Kern County**

<b>Transfer Station</b>	<b>Location</b>	<b>Max. Permitted Throughout</b>	<b>Permitted Capacity</b>
Bear Valley CSD	28999 Lower Valley Road Tehachapi, CA 93561	14 tons/day	3,850 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 Lorraine, 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	12,000 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	99 tons/day	25,740 tons/year
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

Transfer Station	Location	Max. Permitted Throughout	Permitted Capacity
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
Simeken, Inc.	10255 Enos Lane Shafter, CA 93263	11 tons/day	800 tons/year
Stallion Springs Transfer Station	28500 Stallion Springs Drive Tehachapi, CA 93561	60 cubic yards/day	7,340 cubic yards/year
Sunset Waste Paper Delano Transfer Station	1025 Stradley Ave Delano, CA 93215	100 tons/day	200 tons
Tehachapi Recycling, Inc.	416 North Dennison Road Tehachapi, CA 93561	850 tons/day	*
Valley Tree & Construction Disposal Site	4233 Quinn Road Bakersfield, CA 93308	750 tons/day	185,900 cubic yards/year

Source: Cal Recycle, Solid Waste Information System (SWIS).

<http://www.calrecycle.ca.gov/SWFacilities/Directory/SearchList/List?COUNTY=Kern&OPSTATUS=Active>, accessed 2018.

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 compacter 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 2015 (the most current data available), the following cities met the required diversion rate as explained under

AB 939: Arvin, Bakersfield, California City, Delano, Maricopa, and McFarland, Ridgecrest, Shafter, Taft, and Tehachapi. Wasco is still awaiting review by CalRecycle.<sup>2,3</sup>

#### 4.12.3.2 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 governing the approval of solid waste landfills meet the requirements of Subtitle D, the US Environmental Protection Agency (USEPA) 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 year 2000, or face potential fines of millions of dollars per year. On June 30, 2008, 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.<sup>4</sup> The California Integrated Waste Management Act also requires that all cities conduct a Solid Waste Generation Study and prepare a Source Reduction Recycling Element.

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<sup>2</sup> Cal Recycle. 2017. *Countywide Jurisdiction Diversion/Disposal Progress Report*, <http://www.calrecycle.ca.gov/lgcentral/Reports/jurisdiction/diversiondisposal.aspx>, accessed 2018.

<sup>3</sup> 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.

<sup>4</sup> CWIMB, *Senate Bill 1252 Amendment*, June 30, 2008.

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 was 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; 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 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 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.

### ***2016 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 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 which 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 are 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 2018 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 which 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 which result from development and subsequent growth.
- Individual projects will provide availability of public utility service as per 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 this 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 its pro-rata share of 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.

### **4.12.3.3 ENVIRONMENTAL IMPACTS**

#### **Thresholds of Significance**

For the purposes of this EIR, Kern COG has determined that adoption and/or implementation of the 2018 RTP would result in significant impacts to the County's solid waste capacity, if the following could occur:

- 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.

#### **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 2018 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 (2042) demand for solid waste disposal and compares future demand with the 2018 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 2018 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 (2042) demand for solid waste disposal and compares future demand with the Plan to the existing capacity. Implementation of the 2018 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 implementation of the Plan. Below are descriptions of the types of direct impacts foreseeable from new transportation projects proposed in the 2018 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.

### **Impacts and Mitigation Measures**

**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.**

### *Regional and Transit Priority Area Impacts*

Many of the transportation projects within the 2018 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 removal of structures. Construction of urban development would generate similar debris. 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 11 landfills located in Kern County, listed in **Table 4.14.3-1**, function at or below their permitted capacity. However, only Ridgecrest Sanitary Landfill and Taft Sanitary Landfill are permitted to 2042 or beyond. 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.

Compliance with federal, state and local statutes related to solid waste is required and there is nothing in the 2018 RTP that could lead to non-compliance with any identified statutes.

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.

The population of Kern County is projected to increase by 570,675 from 2017 to 2042. The California Department of Resources Recycling and Recovery (CalRecycle) estimates that the average resident in California disposes of 4.9 pounds of trash per day and the average employee disposes of 11.4 pounds of trash per day, as of 2016. From 1989 to 2012, solid waste generation per employee and resident in California was reduced by approximately half.<sup>5</sup> Assuming the AB 939 diversion rate of 50 percent and similar generation rates to the California average, this equates to approximately 2.5 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 2042. As discussed above, solid waste generation per capita had been reducing steadily each year, except in 2013 when they 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%, solid waste generation rate for 2042 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 2018 RTP conditions would be 3,177 tons per day as compared to 2,028 tons per day in 2017(see **Table 4.12.3-3, Solid Waste Generated in Kern County**).

The maximum daily disposal for the 11 landfills in Kern County is calculated to be 12,914 tons/day as of 2016. However, only two of the landfills are anticipated to be operational by 2042 with a combined daily disposal of 1,501 tons/day. Therefore, there would not be enough disposal capacity to meet the projected need in 2042. 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 2018 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

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<sup>5</sup> CalRecycle. 2016. California Statewide per Resident, per Employee, and Total Disposed Since 1989. <http://www.calrecycle.ca.gov/lgcentral/goalmeasure/disposalrate/graphs/disposal.htm>, accessed 2018.

to solid waste facilities would be potentially significant. **Mitigation Measure MM-SW-1** is identified below.

**Table 4.12.3-3  
Solid Waste Generated in Kern County**

Year	Number of People <sup>a</sup>	Solid Waste Generation Rate (lbs/day) <sup>b</sup>	Solid Waste Generated (tons/day)	Adjusted Solid Waste Generated (tons/day)*
<b>Population</b>				
2017	898,825	4.9	2,202	1,101
2042	1,469,500	4.9	3,600	1,800
<b>Employment</b>				
2017	325,300	11.4	1,854	927
2042	483,500	11.4	2,755	1,377
<b>Population and Employment</b>				
<b>2017 Total</b>			<b>4,056</b>	<b>2,028</b>
<b>2042 Total</b>			<b>6,355</b>	<b>3,177</b>

\* Assuming a diversion of 50 percent to achieve state standards.

Source:

<sup>a</sup> Kern COG 2017

<sup>b</sup> California Statewide per Resident, per Employee, and Total Disposed Since 1989. 2016. <http://www.calrecycle.ca.gov/lgcentral/goalmeasure/disposalrate/graphs/disposal.htm>, accessed 2018.

### ***Level of Significance Before Mitigation***

Potentially significant at the regional and TPA levels.

### ***Mitigation Measures***

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 2018 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.

**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.

### *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.

#### **4.12.3.4 CUMULATIVE IMPACTS**

The 2018 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, landfill space is a finite resource. 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 2018 RTP would add to impacts on available landfill capacity.



## 4.13 WATER RESOURCES

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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 2018 Regional Transportation Plan (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. Sources utilized in this discussion include the 2014 Kern Council of Governments (COG) RTP EIR, Tulare Lake Basin Portion of Kern County Integrated Regional Water Management Plan (IRWMP), Central Valley Regional Water Quality Control Board, the 2010 Kern County Water Agency Water (KCWA) Supply Report, the DWR's State Water Project Delivery Capability Report, and the KCWA Comprehensive Annual Financial Report.

### 4.13.1 ENVIRONMENTAL SETTING

#### 4.13.1.1 Climate

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 4.13-1, Climate in the Kern Region**, summarizes the 2017 range in temperatures and precipitation for the region.

**Table 4.13-1  
Climate in the Kern Region**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Monthly Avg. ET (inches) <sup>(a)</sup>	1.41	2.89	3.46	5.85	7.47	9.05	9.81	8.63	6.13	4.78	2.29	1.98	55.99
Avg. Rainfall (inches)	1.32	0.32	2.84	0.00	0.02	0.00	0.00	0.00	0.31	0.00	0.01	0.06	0.50
Avg. Max Temp. (°F)	62.2	66.1	67.8	76.4	84.1	94.7	100.8	99.1	90.6	81.7	70.2	62.8	84.5
Avg. Min Temp. (°F)	41.5	36.6	44.3	48.2	55.9	65.2	71.5	71.2	62.2	50.2	44.5	32.0	55.7

Source: CIMIS, <http://www.cimis.water.ca.gov/UserControls/Reports/MonthlyReportViewer.asp>, accessed 2018.

Notes:

(a) Evapotranspiration (ET) is the sum of evaporation and plant transpiration from the Earth's land surface to atmosphere.

### 4.13.1.2 Hydrologic Components

#### *Hydrologic Regions*

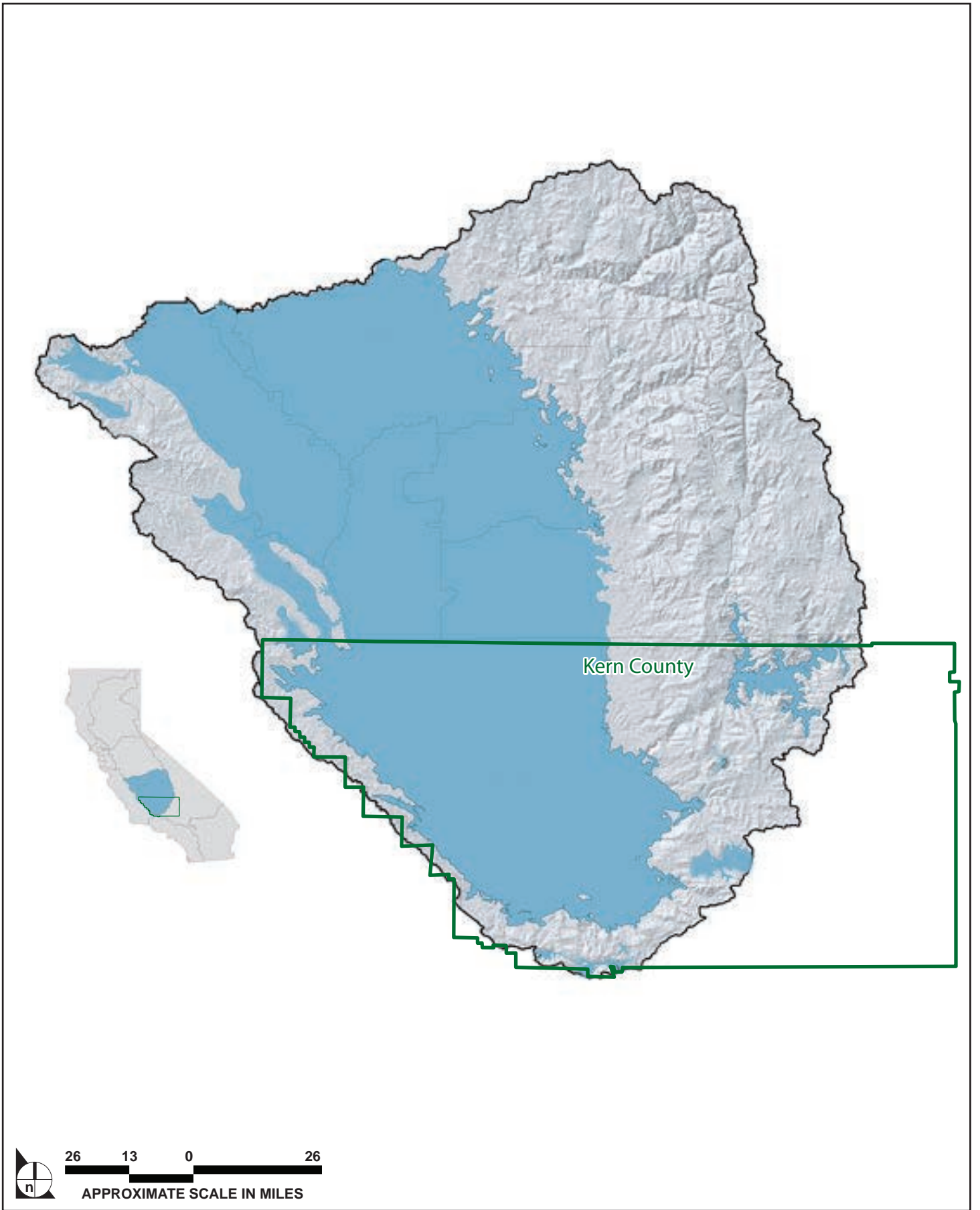
The Department of Water Resources (DWR) has divided the state into ten hydrologic regions, corresponding to the state's major water drainage basins. The Tulare Lake Hydrologic Region encompasses most of Kern County and other parts of the San Joaquin Valley. **Figure 4.13-1, Tulare Lake Hydrologic Region**, 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.

### 4.13.1.3 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,



SOURCE: California Department of Water Resources, 2014

FIGURE 4.13-1

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 GOG region. 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 98,900 acre-feet (afy).<sup>1</sup>

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 95.2 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.<sup>2</sup>

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<sup>1</sup> Kern County Water Agency (KCWA), *2011 Tulare Lake Basin Portion of Kern County IRWMP*, Section 2.6.3.2 Minor Streams

<sup>2</sup> 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 regions' total water supply; however, it can be as much as 60 percent during dry years.<sup>3</sup>

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 which 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.

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<sup>3</sup> KCWA, 2011 *Tulare Lake Basin Portion of Kern County IRWMP*, 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.<sup>4</sup> 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 which 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 Dessert 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 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.

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<sup>4</sup> 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.

### *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 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.

#### **4.13.1.5 Water Supply**

Water supplies utilized 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.<sup>5</sup>

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 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 a 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 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.

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<sup>5</sup> KCWA, 2011 *Tulare Lake Basin Portion of Kern County IRWMP*, Section 2.6 Water Supply.

On January 17, 2014, Governor Edmund G. Brown Jr. proclaimed a state of emergency with respect to the ongoing drought in California. The Governor directed state officials to take all necessary actions to prepare for these drought conditions, including voluntary and possible future mandatory water restrictions. In the state of emergency declaration, Governor Brown directed state officials to assist farmers and communities that are economically impacted by dry conditions, as well as take necessary measures to ensure that the state can respond if Californians face drinking water shortages. The Governor also directed state agencies to use less water and hire more firefighters and initiated a greatly expanded water conservation public awareness campaign.

In addition, the proclamation gives state water officials more flexibility to manage supply throughout California under drought conditions. According to state water officials, California's river and reservoirs are below their record lows and manual and electronic readings of the state's snowpack water content show that the snowpack is at about 20 percent of normal average in 2014. Despite the state of emergency ending in 2017 in most of the state due to increased precipitation, it is anticipated that environmental stressors, largely related to climate change, will perpetuate drought conditions in the future.

### ***State Water Project***

The KCWA is the second largest participant of the 29 member agencies of the State Water Project (SWP). The amount of SWP water actually available and allocated to SWP contractors each year is dependent on a number of factors 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 2015 KCWA Comprehensive Annual Financial Report, the County received 23 percent of their water from the SWP in 2015.<sup>6</sup>

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 2017.<sup>7</sup> 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

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<sup>6</sup> KCWA. 2015. *Comprehensive Annual Financial Report- FY Ended June 30, 2015*.

<sup>7</sup> California Department of Water Resources. 2018. *The 2017 Draft State Water Project Delivery Capability Report*. <http://baydeltaoffice.water.ca.gov/swpreliability/>, accessed 2018.



conditions, as shown in **Table 4.13-2, SWP “Table A” Deliveries to KCWA**. The 2015 and 2017 analyses indicate that the SWP, using existing facilities operated under current regulatory and operational constraints, and with all contractors requesting delivery of their full “Table A” amounts in most years, could deliver approximately 43 percent of total “Table A” amounts (1,778 thousand acre-feet) on a long-term (10-year period) average basis. The analyses also projected that SWP deliveries during multiple-year dry periods could average about 34 to 35 percent of total “Table A” amounts and could possibly be as low as 11 percent during an unusually dry single year.

**Table 4.13-2  
SWP “Table A” Deliveries to KCWA**

Year	Annual Deliveries (thousand acre-feet)
2007	2,427
2008	1,352
2009	1,488
2010	2,037
2011	2,901
2012	2,608
2013	1,588
2014	475
2015	857
2016	2,049

*Source: California Department of Water Resources (DWR), The State Water Project Draft Delivery Capability Report 2017, December.*

In response to the Governor’s declaration of a state of emergency with respect to the drought in California, on January 31, 2014 the Department of Water Resources (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.

In 2016-2017, a historically wet winter ended the state of emergency and drought conditions subsided in all but four counties. However, as climate change generates increasingly warm temperatures and lower precipitation rates, it is expected that drought conditions will return as early as summer 2018. During the drought from 2011-2016, California farmers cut back acreage by 6 percent and high water costs coupled with lost acreage led to nearly \$2 billion in agricultural sector losses. Future 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.<sup>8</sup>

### ***Central Valley Project***

The Central Valley Project (CVP) is a set of federal facilities that extend 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 Arvin-Edison Water Storage District (AEWSD). Deliveries are dependent upon the monthly percentage allocations determined by the Bureau of Reclamation. In 2015, Kern County relied on the CVP for approximately 11 percent of the County's total water supply.<sup>9</sup>

### ***Groundwater and Groundwater Banking***

Agriculture, municipal and industrial users, and groundwater banking operations all draw upon local groundwater resources. In 2015, groundwater provided 37 percent of the County's water.<sup>10</sup> 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 through 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

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<sup>8</sup> Public Policy Institute of California. 2017. *California's Latest Drought*. <http://www.ppic.org/publication/californias-latest-drought/>, accessed 2018.

<sup>9</sup> KCWA, *Comprehensive Annual Financial Report- FY Ended June 30, 2015*

<sup>10</sup> Ibid.

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 utilized in the region since the early 1900s. Many notable groundwater storage programs exist, including those 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, maximum annual recharge capacity (i.e., the amount that can be infiltrated per year from existing recharge areas) in the region is estimated at 1.5 million afy with maximum annual recovery estimated at 900,000 acre-feet. In 2017, KCWA estimated that total available storage capacity for the region is approximately 10 million acre-feet. Approximately 1.5 million acre-feet of storage is estimated to be available to the Kern Water Bank.<sup>11</sup>

### *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 US Army Corps of Engineers (USACE) and the Kern River Watermaster.<sup>12</sup> 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 an 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,

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<sup>11</sup> Kern Water Bank Authority, *Frequently Asked Questions*. Available at: <http://www.kwb.org/index.cfm/fuseaction/Pages.Page/id/352>, accessed 2018.

<sup>12</sup> 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.

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 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 provided approximately 21 percent of the County's water supply in 2015, with an additional 8 percent coming from local streams.

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.<sup>13</sup>

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<sup>13</sup> KCWA, 2011 Tulare Lake Basin Portion of Kern County IRWMP, Section 2.6.3.1 Kern River.

**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.

**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 will 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 towards 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 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 4.13-3, 2010 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 4.13-3  
2010 Kern County Urban Water Demand**

Water Purveyor Service Area	Active Connections	Annual Water Use		Permanent Population	gpcd
		(mg)	(af)		
Arvin	3,623	984	3,021	16,000	1 69
Bakersfield Metro Area	157,644	101,159	310,445	529,732	523
Buttonwillow	443	130	400	1,266	2 82
Delano	11,055	3,205	9,835	56,346	156
Lamont	3,448	1,189	3,650	13,471	242
Lost Hills	373	120	368	2,772	118
McFarland	2,448	66	201	13,942	13
Shafter	4,151	1,520	4,665	16,208	257
Taft-Maricopa- McKittrick	7,439	21,806	66,920	16,800	3,556
Wasco	6,310	1,747	5,363	55,311	319
<b>Total</b>	<b>196,934</b>	<b>131,926</b>	<b>404,867</b>	<b>691,848</b>	<b>274</b>

Source: KCWA, 2010 Water Supply Report, Table 25.

gpcd= Gallons per capita per day which is the volume of water (in gallons) used per person per day.

Annual water use data was obtained from the California Department of Public Health Division of Drinking Water and Environmental Management.

The gpcd computed in this table includes residential, commercial, industrial, and public authority water use. The inclusion of commercial, industrial, and public authority water use may substantially increase the gpcd.

The City of Delano includes the Kern Valley State Prison and the City of Wasco includes the Wasco State Prison.

The gpcd for the Taft, Maricopa, and McKittrick areas includes significant quantities of water used by oil companies.

## Agricultural Demand

Agricultural demand was developed from the total irrigated acreage of 833,452 acres<sup>14</sup> and an average consumptive water use of 2.49 acre-foot per acre. **Table 4.13-4, Summary of Agricultural Water Demand**, provides a breakdown of the acreage by crop type.

**Table 4.13-4**  
**Summary of Agricultural Water Demand (afy)**

<b>Crop Type</b>	<b>Irrigated Acreage</b>	<b>Consumptive Water Use (acre-feet/acre)</b>	<b>Agricultural Water Demand (afy)</b>
Alfalfa (including seed)	92,210	4.10	378,215
Almonds	179,948 <sup>(a)</sup>	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 <sup>(a)</sup>	2.81	285,245
Grain and Grain Hay	58,647	2.07	121,155
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 <sup>(a)</sup>	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 <sup>(a)</sup>	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
<b>Total Irrigated Lands</b>	<b>833,452</b>	<b>2.49</b>	<b>2,669,713</b>
<b>Total Crop Lands</b>	<b>1,016,946</b>		
<b>Double Cropped</b>	<b>21,339</b>		

*Note: (a) Includes Dudley Ridge Water District (DRWD) agricultural demands.*

*Source: Kern County Water Agency, 2011 Tulare Lake Basin Portion of Kern County IRWMP, Section 2.8.2 Agricultural Demand.*

<sup>14</sup> KCWA, 2011 Tulare Lake Basin Portion of Kern County IRWMP, Section 2.8.2 Agricultural Demand

Total 2010 urban and agricultural demand for the Kern Region was estimated at around 2,865,662 acre-foot (2,669,713 afy + 195,949 afy).

#### 4.13.1.7 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 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 identifies 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 4.13-5, 2010 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 4.13-5  
2010 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	123	2021
	pH	Unknown	7.3–9.6	6.5–8.5	123	2021

*Source: Central Valley Regional Water Quality Control Board, 2013*

Point and non-point source pollution are different forms of pollution which can damage surface water and are regulated at the federal and local level. 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 permits 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 increase 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 4.13-6, Comparison of SWP Water Quality Criteria**, above, reports water quality in the California Aqueduct upstream of Kern County (data taken from Station KA017226, Check 21 near Kettleman City).

**Table 4.13-6  
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 <sup>(b)</sup>
Fluoride	1.5	2 <sup>(b)</sup>
Boron	0.6 <sup>(a)</sup>	-
Sodium Percentage	50% <sup>(a)</sup>	-
Iron and Manganese, together	0.3	0.3 and 0.05 <sup>(b)</sup>
Magnesium	125	-
Lead	0.1	0.015
Phenol	0.001	-
Selenium	0.05	0.05
Zinc	15	5 <sup>(b)</sup>
Sulfate	110 <sup>(a)</sup>	250 <sup>(b)</sup>
Total Hardness	180 <sup>(a)</sup>	No standard
TDS	440 <sup>(a)</sup>	500 <sup>(b)</sup>
Chloride	110 <sup>(a)</sup>	250 <sup>(b)</sup>

*Notes:*

<sup>(a)</sup> *Monthly Average*

<sup>(b)</sup> *Denotes secondary standard.*

*Source: KCWA, 2011 Tulare Lake Basin Portion of Kern County IRWMP, Section 2.7.2 Imported Water Quality.*

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.

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 is 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 web site, and manages the projects originating from this effort.<sup>15</sup>

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 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.

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<sup>15</sup> Central Valley Regional Water Quality Control Board. 2018. *CV-Salts*.  
[https://www.waterboards.ca.gov/centralvalley/water\\_issues/salinity/](https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/), accessed 2018.

**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 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 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 2008 showed that the Kern County had 40 sources of affected areas.<sup>16</sup>

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 with 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 interim action became fully active in September 2003

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<sup>16</sup> California Department of Public Health. 2013. Arsenic. <http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Arsenic.aspx>.

and is currently being evaluated. As of 2010, 1,408,000 gallons of contaminated water had been collected and evaporated.<sup>17</sup>

At the recommendation of the National Research Council, the Department of Energy (DOE) conducted a study to evaluate remediation actions and released an environmental impact statement in July 2005. The DOE has agreed to move the tailings, and in 2008 released a timeline for the Moab Uranium Mill Tailings Remedial Action Project (UMTRA). According to the scope and timeline, the UMTRA will be completed and the uranium will be moved to Crescent Junction, UT for disposal by 2028.<sup>18</sup>

#### 4.13.1.8 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 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

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<sup>17</sup> Department of Energy. 2013. *Moab Uranium Mill Tailings Remedial Action (UMTRA) Project*, <https://www.emcbc.doe.gov/SEB/Moab/>.

<sup>18</sup> Ibid.

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 1 percent chance of being inundated during any particular 12-month period. The risk of this area being flooded in any century is 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 06029C2353E and was last updated in September 2008.

**Figure 4.13-2, 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.

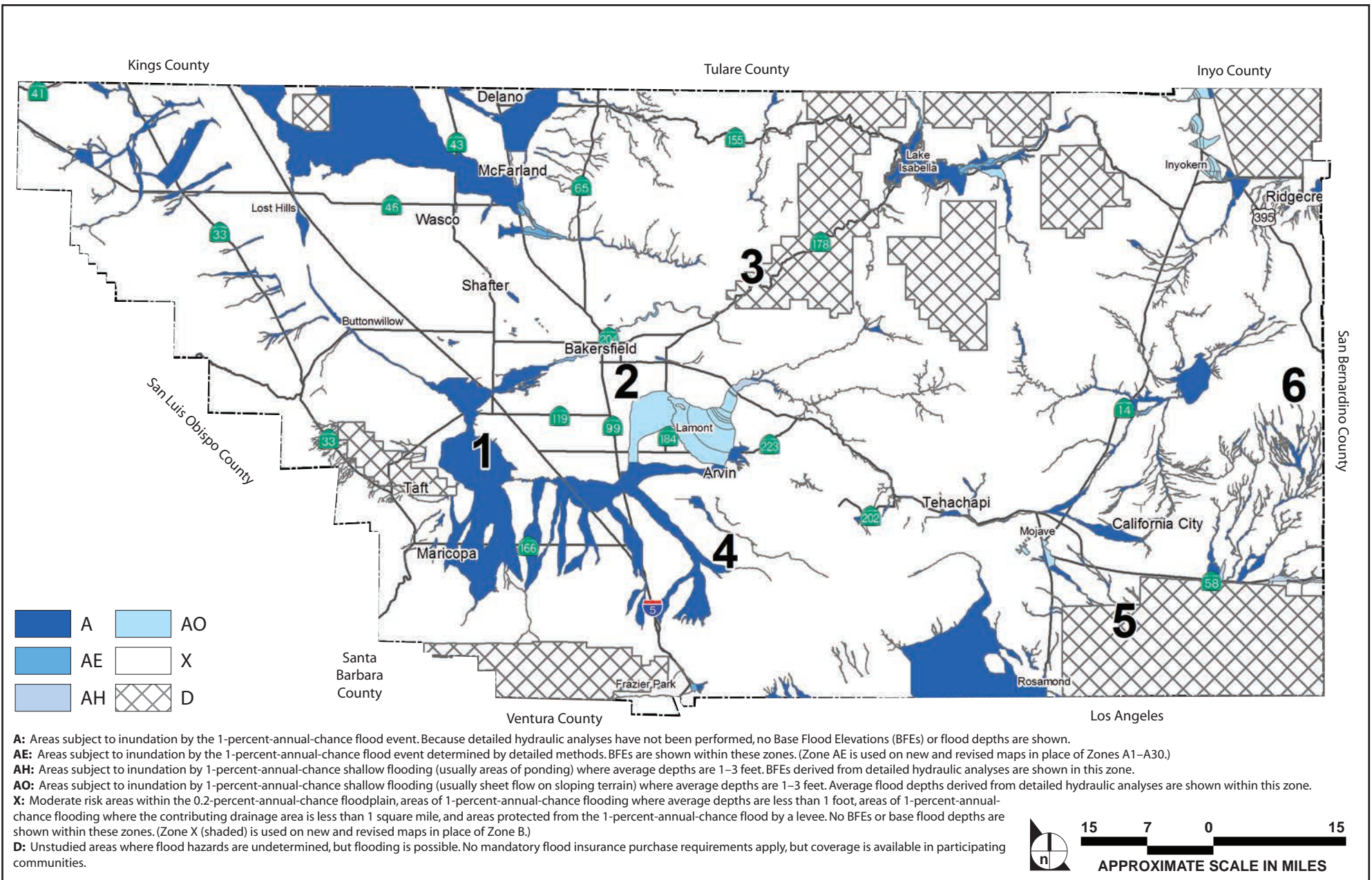
**Zone AH:** This zone is listed as a high risk and special flood hazard area. Further, these areas are subject to inundation by the 1-percent-annual-chance shallow flooding (usually in areas of ponding) where average depths of water are 1 to 3 feet.

**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,





SOURCE: Kern County, 2014

**A:** Areas subject to inundation by the 1-percent-annual-chance flood event. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown.

**AE:** Areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. BFEs are shown within these zones. (Zone AE is used on new and revised maps in place of Zones A1–A30.)

**AH:** Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are 1–3 feet. BFEs derived from detailed hydraulic analyses are shown in this zone.

**AO:** Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are 1–3 feet. Average flood depths derived from detailed hydraulic analyses are shown within this zone.

**X:** 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. No BFEs or base flood depths are shown within these zones. (Zone X (shaded) is used on new and revised maps in place of Zone B.)

**D:** Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

FIGURE 4.13-2

# FEMA Flood Zones in Kern County

including the preparation of hydrology and flood-frequency studies, special storm reports, and flood area delineations.

## 4.13.2 REGULATORY FRAMEWORK

### 4.13.2.1 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 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 section 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 (SWRCB 2011).

### **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 2018 RTP/SCS 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.

### **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 that are or may be used in interstate or foreign commerce (including sightseeing or hunting), including all waters subject to the ebb and flow of the tide; (2) wetlands; (3) all waters such as interstate lakes, rivers, 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.

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 net 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<sup>19</sup>. 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)
- 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

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<sup>19</sup> US Army Corps of Engineers (USACE). 2015. *Final Compensatory Mitigation Rule*.

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 assure that even small violations for a period of time do not pose 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.

#### 4.13.2.2 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 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 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 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 get 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 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) 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 2018 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.

### ***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 targets, 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.
- 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 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 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.

#### **4.13.2.3 Local**

### ***2011 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 2018 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 2018 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.



### 4.13.3 ENVIRONMENTAL IMPACTS

#### 4.13.3.1 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 population, housing, and employment resources, 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 interfere with groundwater recharge.
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map; or place within a 100-year flood hazard area structures which would impede or redirect flood flows; or expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; and/or inundation by seiche or mudflow.
- Substantially increase demand for water such that existing supplies and facilities would not be able to accommodate demand.

#### 4.13.3.2 Methodology

The analysis assesses the potential impacts to water resources that could result from implementation of the 2018 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 Transit Priority Areas (TPAs).

Impacts are assessed in terms of both land use and transportation impacts. By 2042, 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.

#### 4.13.3.3 Impacts and Mitigation Measures

**Impact W-1**                    **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.**

#### *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. 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.

Several bodies of water in the study area, including major rivers, creeks, and tributaries have 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 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 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 2018 RTP would directly increase impervious surfaces with the County by adding new lane miles and other transportation infrastructure to the County. The 2018 RTP would consume approximately 56,000 acres of land that would largely be converted to impervious surfaces. The addition of lane miles 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.

### *Level of Significance Before Mitigation*

Potentially significant at the regional and TPA levels.

### *Mitigation Measures*

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 2018 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.

**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 Water Quality Control Board (RWQCB): Section 401 Water Quality Certification. Certification that the project will not violate state water quality standards is required before the Corps can issue a 404 permit, above.
  - California Department of Fish and Wildlife (CDFW): Section 1602 Lake and Streambed Alteration Agreement. Work that will alter the bed or bank of a stream requires authorization from CDFW.
- 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.

### *Level of Significance After Mitigation*

The increased development 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 interfere with groundwater recharge.**

### *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 1 acre of roadway is about 16 times greater than that of a comparably sized meadow.<sup>20</sup> As such, an increase in roadways would be expected to interfere with groundwater recharge at the regional level.

The proposed 2018 RTP would directly result in 1,822.44 new lane miles through 2042. **Table 4.13-7** shows Plan Lane Miles. This would include new roadway projects and the widening of existing projects. **Chapter 3.0, 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 installation of additional impervious surfaces, impacts to groundwater infiltration would be significant.

**Table 4.13-7**  
**Plan Lane Miles**

Lane Types	Miles
Freeway – (Freeways and Ramps Only)	125.61
Major Arterial	1,458.65
Collector	238.18
<b>Total Plan Lane Miles</b>	<b>1,822.44</b>

*Source: Kern COG 2018*

*Arterials include expressways, state highways that are not freeways and freeway ramps*

The increase in impervious surfaces due to the additional miles of roadway, in addition to urban development associated with the anticipated development patterns for 2042, 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 2018 RTP are considered potentially significant for **Impact W-2**. Mitigation is required; see **Mitigation Measures MM W-2** through **MM W-5** below.

<sup>20</sup> Scheuler, T. R. (1994). The Importance of Imperviousness. *Watershed Protection Techniques 1*(3): 100-111.

### ***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 2018 RTP will 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 2018 RTP are considered less than significant for **Impact WAT-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-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.

### *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**                    **Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map; or place within a 100-year flood hazard area structures which would impede or redirect flood flows; or expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; and/or inundation by seiche or mudflow.**

### *Regional Impacts*

The proposed 2018 RTP would include the construction of additional 175,394 housing units by 2042 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** are located within the FEMA-designated 100-year floodplain. At the regional scale, the proposed 2018 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.

A portion of the transportation projects included in the proposed 2018 RTP could occur within the 100-year flood hazard area, thus increasing the potential to obstruct or exacerbate floodwaters. The construction of projects involving support structures in the floodway could obstruct floodwaters at some

locations. Placement of structures within a floodplain can displace floodwaters and alter the base flood 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 2018 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**, identifies federally designated flood hazard zones in the Kern County.

The highway and arterial projects proposed in the 2018 RTP generally include widening existing highways, constructing new interchanges, new highway segments, new rail lines, and high speed rail. **Table 4.13-7** summarizes additional lane miles proposed with the 2018 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 urbanized acreage (consuming previously vacant land) would be on the order of 56,000 acres. The additional urbanized acreage expected by 2042 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. See **Mitigation Measure MM W-6** and **MM W-7**, below.

### ***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 WAT-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**                    **Substantially increase demand for water such that existing supplies and facilities would not be able to accommodate demand.**

### *Regional and Transit Priority Area Impacts*

This impact concerns potential impacts to water demand as a result of the proposed 2018 RTP. Water agencies that either provide over 3,000 acre-feet of water annually or serve more than 3,000 or more connections in Kern County 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 2042, therefore, estimates of supply and demand in this EIR are considered approximate. The City of Bakersfield has indicated that reliability of water supply is dependent on management of groundwater basins, but had identified sufficient water through 2035 to serve its residents.<sup>21</sup>

As discussed in the Environmental Setting above, the largest water usage in Kern County is for agricultural resources. Agricultural demand was estimated from the total irrigated acreage of 880,102 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 2018 RTP analysis, future agricultural water demands are assumed to stay the same at 2,191,453 afy. However, by 2042, with the 2018 RTP, agricultural land would be reduced by 15,808 acres, which would be expected to reduce the overall water demand from agricultural lands. 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 570,675 people. As shown in **Table 4.13-8, Residential Existing and Future Water Use**, water consumption is estimated to be

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<sup>21</sup> City of Bakersfield Domestic Water Systems. 2005. *2005 Urban Water Management Plan*

approximately 205,605 million gallons per year.<sup>22</sup> As discussed above, water service providers have not identified water supplies through 2042 in their plans.

**Table 4.13-8  
Residential Existing and Future Water Use (Million Gallons per Year)**

	Existing	No Project	Plan
Multi-Family	15,452	8,442	19,149
Small Lot/Townhome	54,925	19,092	81,145
Large Lot	202,686	213,599	105,311
<b>Total (million gallons per year)</b>	<b>273,063</b>	<b>241,133</b>	<b>205,605</b>

*Note: water use is calculated based on the number of single family, townhomes and multi-family residential units  
Source: Impact Sciences, 2018, Kern COG 2018*

Other sources of water demand include industrial uses, oil and gas facilities (and renewable energy facilities). It is beyond the scope of this EIR to estimate water usage associated with each of these sectors and no sufficient data currently is available to make such an estimation. While it is expected there would 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), 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

<sup>22</sup> Impact Sciences, 2018

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 uncertainty 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** are described below.

### *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.

### *Level of Significance After Mitigation*

Mitigation Measures MM W-8 through MM W-18 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.

#### **4.15.4 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 water supply in the region, the result of 570,675 additional people would result in a significant impact to water supply that 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 to water quality and could affect water in areas outside the Kern County. As discussed above, implementation of the 2018 RTP would have significant impacts related to water quality, hydrology, and water supply. The 2018 RTP significant impacts would add to similar impacts from RTPs in adjacent jurisdictions.

## 5.0 ALTERNATIVES

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This chapter sets forth alternatives to the 2018 RTP and provides an analysis of each alternative and a comparison of each alternative 's impacts to impacts anticipated under the proposed Project. 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 which 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 which 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 ones that would avoid or substantially lessen any of the significant effects of the proposed project. Of these alternatives, the EIR need 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 **Section 4.0, Environmental Impact Analysis**, of this PEIR, the 2018 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 2018 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 2018 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 the regional level. The 2018 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 2018 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 2018 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 to agricultural resources would only be significant at the regional level. The 2018 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

**Air Quality:** Implementation of the 2018 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 2018 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

**Biological Resources:** Implementation of the 2018 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 2018 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**) and paleontological resources (**Impact CR-3**) resources, or human remains (**Impact CR-4**), as well as tribal cultural resources (**Impacts TCR-1 and TCR-2**). The 2018 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

**Greenhouse Gas Emissions:** Implementation of the 2018 RTP would directly and indirectly causes increases in GHG emissions over existing levels (**Impact GHG-1**), and may conflict with the State's ability to achieve emission reductions targets set by SB 32 and EO-S-3-05 (**Impact GHG-2**). The 2018 RTP's contribution to such impacts would also be cumulatively considerable.

**Land Use:** Implementation of the projects and land use pattern in the 2018 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 2018 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 2018 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 2018 RTP would foster economic and household growth and would remove some obstacles to growth in some parts of the region (**Impact POP-1**). The 2018 RTP/SCS would also require the acquisition of rights-of-way that could displace existing homes or businesses (**Impact POP-2**). The 2018 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 2018 RTP resulting in substantial physical deterioration (**Impact REC-1**). Additionally, development of the proposed RTP would expose people and/or structures to a significant risk of wildland fires (**FIRE-2**). The 2018 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

**Transportation:** Implementation of projects included in the 2018 RTP would substantially increase total daily VMT in 2042 compared to current daily VMT (**Impact TR-1**). The 2018 RTPS would increase congestion, and thus the 2018 RTP/SCS has the potential to conflict with the CMP (**Impact TR-2**). The 2018 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

**Utilities:**

Energy: The 2018 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 2018 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

Solid Waste: Implementation of the 2018 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 2018 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

**Water Resources:** Implementation of the 2018 RTP would degrade local surface water quality due to increased runoff from transportation and development projects, potentially resulting in violations of water quality standards or waste discharge requirements (**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**). A portion of the transportation projects and land use developments under the 2018 RTP could take place within 100-year flood hazard areas; therefore the 2018 RTP could result in housing being placed within a 100-year flood hazard area (**Impact W-3**) or result other structures that could impede or redirect flows (**Impact W-8**). In addition, the increased urbanization would contribute to an increased demand for water supply, requiring new or expanded entitlements (**Impact W-4**). The 2018 RTP's significant impacts would add to impacts of cumulative development in surrounding jurisdictions.

### 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 2018 RTP are the following seven goals:

At the core of the 2018 RTP 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** – 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

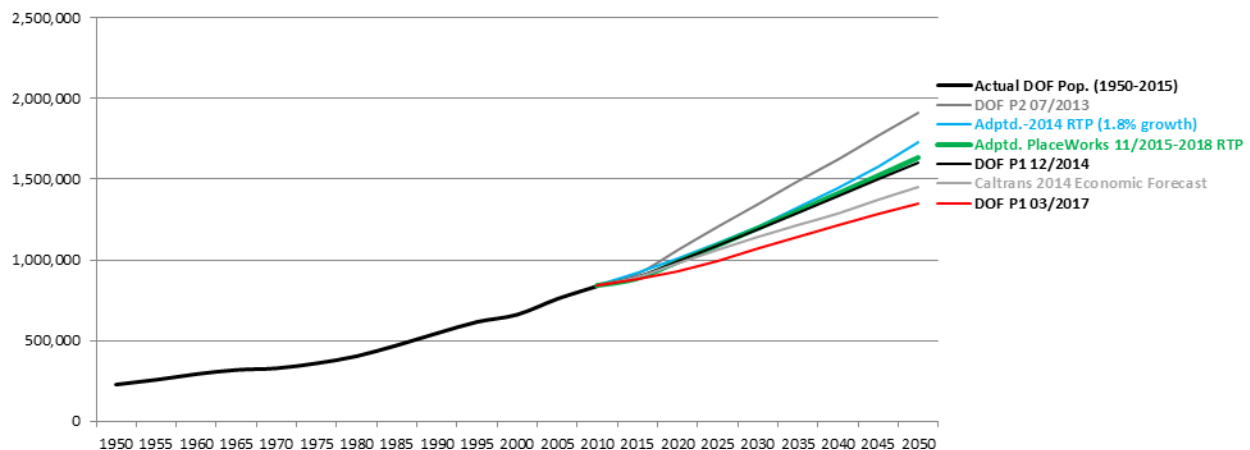
The *State CEQA Guidelines* indicate that an EIR should identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency’s determination. Among the factors that may be used to eliminate 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).) One alternative, the Slower Growth Alternative was considered but rejected from further consideration.

## 5.2.1 Alternatives Considered but Rejected from Further Consideration

### Slower Growth Alternative

Growth is not under the control of Kern COG and therefore an alternative growth scenario does not represent a change to the Project. Rather it represents a change in the context of the Project.

The Slower Growth Alternative would have a total population in 2042 that would be less than the forecast adopted by Kern COG and analyzed throughout this EIR. The Department of Finance (DOF) provides growth forecasts for counties in California. The most recent DOF 2042 forecast for Kern County (total population of 1,243,056) shows a slower pace of growth than in the past and less growth than currently anticipated by Kern COG in 2042 (total population of 1,469,500). The most recent growth forecasts by DOF (varying by 15 percent) as well as the 2014 Kern COG adopted forecast and 2017 adopted Kern COG forecast are shown in the chart below. The most recent DOF forecast for 2042 is approximately 15 percent less than the Kern COG forecast and 30 percent less than the DOF forecast from five years ago.



If slower growth than anticipated in the Kern COG adopted forecast were to occur, then all impacts would be reduced more or less proportionate to the reduction in population (i.e. approximately 15 percent less traffic, emissions, demand for public services and utilities, etc.). The one factor that would increase would be the SB 375 per capita GHG emissions. Preliminary modeling shows that DOF slower growth would lower the ability to achieve the SB 375 2035 target by one to two percentage points meaning that Kern COG would still meet the CARB targets. Therefore, further analysis of this alternative is not necessary as analysis of the Plan is more conservative.

Compared to recent DOF forecasts the adopted Kern COG forecast is a middle of the road forecast and represents a conservative estimate of population leading to a conservative analysis of impacts (with the



exception of per capita SB 375 GHG emissions). Kern COG's forecasts were developed through public workshops under the guidance of a respected economist and are reasonable. As of January 1, 2018, the population in Kern County is estimated to be 905,801 persons. This estimate of population was released by DOF in May 2018. This updated population estimate is higher (by about 0.25%) than would be estimated by using the DOF forecast and interpolating from the July 1, 2017 population used as the base year for the modeling. This higher growth supports the higher Kern COG adopted growth forecast assumption when compared to the most recent DOF adopted forecast.

### 5.2.2 Alternative 1 – No Project

The No Project Alternative is required by Section 15126.6(e)(2) of the *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.”<sup>1</sup> 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 transportation plan and/or TIP, or have completed environmental review by January 2018. 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 occurring prior to SB 375 requirements to focus growth in TPAs.

### 5.2.2 Alternative 2 – Old Plan Alternative

The Old Plan Alternative is an update of the adopted 2014 RTP reflecting the most recent growth distribution and transportation planning decisions and assumptions, extrapolated from the 2040 horizon year in the Old Plan out to 2042, the horizon year of the 2018 RTP. This Old Plan alternative does not include the same development pattern strategies included within the Sustainable Communities Strategy (SCS), but includes all of the projects in the 2014 RTP including delivery of a beltway system earlier than the Old Plan Alternative. The proposed 2018 Plan would include slightly more infill development as a result of refinements developed as part of the Bakersfield High Speed Rail Station Area Plan. 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

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<sup>1</sup> *State CEQA Guidelines* § 15126.6[e][2]

data provided by local jurisdictions during the 2014 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, 72 percent of new growth would be accommodated as infill development with 98 percent of housing as medium or high density in the predominant urban area. County wide 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 2018 RTP 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	19.0	38.0	18.4	25.4	28.1	37.7	53.5	36.9
No Project	1.0	~1	6.6	8.2	10.4	13.0	83	78.8
Old Plan	18.7	35.1	17.8	23.3	24.3	32.3	57.9	44.4
Countywide Infill Alternative	56.5	72.9	33.1	48.0	36.6	50.9	30.3	1.1

Source: Kern COG, 2018; Growth only is 2015-2042 growth from Uplan Model and project level analysis outside of Uplan.

**Table 5.0-2** summarizes transportation performance across alternatives.

**Table 5.0-2  
All Alternatives – Transportation Performance Summary**

Performance Measures	2017	2042			
		Plan	Old Plan	Countywide Infill	No Project
Total VMT per Weekday (Thousands)	22,934	35,299	35,458	32,150	37,266
Congested Vehicle Hours (Level of Service D, E, F)	561,698	904,270	903,586	858,940	989,864
Congested Vehicle Hours in Core Urban Areas	284,269	449,407	428,290	417,511	526,672

Source: Kern COG 2018

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 2018 RTP\***

<b>Environmental Issue</b>	<b>Project Impact</b>	<b>Alternative 1 – No Project Alternative</b>	<b>Alternative 2 – Old Plan Alternative</b>	<b>Alternative 3- Countywide Infill Alternative</b>
<b>Aesthetics</b>				
Scenic Vistas	Significant (regional)	Similar (significant)	Similar (significant)	Less (significant)
Visual Character	Significant (regional)	Similar (significant)	Similar (significant)	Similar (significant)
Light and Glare	Significant (regional)	Similar (significant)	Similar (significant)	Similar (significant)
<b>Agricultural Resources</b>				
Convert Prime Farmland	Significant (regional)	Greater (significant)	Greater (significant)	Similar (significant)
Conflict with Land Use/Williamson Act	Significant (regional)	Greater (significant)	Greater (significant)	Similar (significant)
Convert Forest land	Significant (regional)	Greater (significant)	Greater (significant)	Similar (significant)
<b>Air Quality</b>				
Consistent with Air Quality Plans	Less than significant	Greater (significant)	Greater (significant)	Less (Less than significant)
Long Term Criteria Pollutants	Less than significant	Greater (significant)	Greater (significant)	Less (less than significant)
Short Term Criteria Pollutants	Significant	Less (significant)	Greater (significant)	Less (significant)
Long Term Regional Air Toxics	Significant	Greater (significant)	Greater (significant)	Less (significant)
Localized Air Toxics	Significant	Less (significant)	Greater (significant)	Greater (significant)
<b>Biological Resources</b>				
Sensitive Species	Significant	Greater (significant)	Greater (significant)	Similar (significant)
Riparian Communities	Significant	Greater (significant)	Greater (significant)	Similar (significant)
Wetlands	Significant	Greater (significant)	Greater (significant)	Similar (significant)
Migratory Fish/Birds	Significant	Greater (significant)	Greater (significant)	Similar (significant)
Local Plans/HCPs	Less than significant	Greater (significant)	Greater (significant)	Similar (significant)
<b>Cultural Resources</b>				
Historic Resources	Significant	Greater (significant)	Greater (significant)	Similar (significant)
Archeological Resources	Significant	Greater (significant)	Greater (significant)	Similar (significant)
Paleontological Resources	Significant	Greater (significant)	Greater (significant)	Similar (significant)
Disturb Human Remains	Less than significant	Greater (significant)	Greater (significant)	Similar (less than significant)
Tribal Cultural Resources	Significant	Greater (Significant)	Greater (Significant)	Less (significant)
<b>Greenhouse Gas Emissions</b>				
Increase GHG Emissions	Significant	Greater (significant)	Greater (significant)	Less (significant)
Conflict with AB 32	Significant	Greater (significant)	Greater (significant)	Less (significant)

<b>Environmental Issue</b>	<b>Project Impact</b>	<b>Alternative 1 – No Project Alternative</b>	<b>Alternative 2 – Old Plan Alternative</b>	<b>Alternative 3- Countywide Infill Alternative</b>
Conflict with SB 375	Less than Significant	Greater (significant)	Greater (less than significant)	Less (less than significant)
<b>Land Use</b>				
Conflict with plans	Significant	Less (significant)	Similar (significant)	Greater (significant)
Divide a community	Significant	Less (significant)	Similar (significant)	Similar (significant)
<b>Noise</b>				
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)
<b>Population, Housing, and Employment</b>				
Induce population growth	Significant	Similar (significant)	Similar (significant)	Similar (significant)
Displacement	Significant	Similar (significant)	Similar (significant)	Greater (significant)
<b>Public Services – Fire and Police</b>				
Create the need for new fire facilities	Less than significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
Expose people/structures to wildfire risk	Significant	Greater (significant)	Greater (significant)	Similar (significant)
Create the need for new police facilities	Less than significant	Similar (significant)	Similar (significant)	Similar (significant)
<b>Public Services – Schools</b>				
Create the need for new school facilities	Less than significant	Similar (significant)	Similar (significant)	Similar (significant)
<b>Public Services – Parks</b>				
Increase the use of existing parks	Significant	Similar (significant)	Similar (significant)	Similar (significant)
Require construction of new parks	Less than significant	Similar (significant)	Similar (significant)	Similar (significant)
<b>Transportation and Traffic</b>				
Substantial increase in VMT	Significant	Greater (significant)	Greater (significant)	Less (significant)
Conflict with CMP	Significant	Similar (significant)	Similar (significant)	Greater (significant)
Change air traffic patterns	Less than significant	Similar (less than significant)	Similar (less than significant)	Similar (less than 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)
Conflict with alternative transportation plans	Less than significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
<b>Utilities – Energy</b>				
Increase energy consumption	Significant	Greater (significant)	Greater (significant)	Similar (significant)
Use substantial amounts of energy	Significant	Greater (significant)	Greater (significant)	Similar (significant)
Uncover utility lines	Significant	Greater (significant)	Greater (significant)	Similar (significant)

<b>Environmental Issue</b>	<b>Project Impact</b>	<b>Alternative 1 – No Project Alternative</b>	<b>Alternative 2 – Old Plan Alternative</b>	<b>Alternative 3- Countywide Infill Alternative</b>
<b>Utilities – Wastewater</b>				
Exceed the capacity of existing or planned facilities	Less than significant	Greater (significant)	Greater (significant)	Similar (significant)
<b>Utilities – Solid Waste</b>				
Generate substantial increases in solid waste	Significant	Greater (significant)	Greater (significant)	Similar (significant)
<b>Water Resources</b>				
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 (regional)	Greater (significant)	Greater (significant)	Similar (significant)
Impacts are for both regional level and TPA level unless otherwise indicated.				
<i>Source: Impact Sciences 2018</i>				

## 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 570,675 persons through 2042, however no regional transportation investments would be made above the existing programmed projects. The population distribution would follow past trends, uninfluenced by the Plan's emphasis on TPAs, which would result in greater consumption of open space areas (58,560 acres would be consumed under the No Project scenario as compared to 56,000 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, while the Plan includes projects located near scenic highways that could result in potential impacts such as the widening of Inyokern Road near the Route 178.

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 views and

visual character. 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.

The Plan 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 to open space. 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 (about 56,000 acres under the Plan and about 58,560 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 any 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 58,560 acres of land consumed compared to 56,000 acres consumed under the Plan. The No Project Alternative would also result in 25,152 acres of farmland consumed, compared to 15,808 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 uses 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, existing year (2017) emissions were compared to horizon year (2042) 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<sub>2</sub> 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 2018 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 (2042) vs. Plan (2042)**

Scenario	ROG	NOx	Tons/Day			Sox
			CO	PM10	PM2.5	
Existing 2017	6.51	29.7	44.6	1.74	0.8378	0.1519
2018 RTP 2042	3.14	11.6	19.8	2.2	0.8924	0.1542
<b>2018 RTP Net</b>	<b>-3.37</b>	<b>-18.1</b>	<b>-24.8</b>	<b>0.46</b>	<b>0.0546</b>	<b>0.0023</b>
No Project 2042	3.34	12.2	21.1	2.33	0.9428	0.1636
<b>No Project Net</b>	<b>-3.17</b>	<b>-17.5</b>	<b>-23.5</b>	<b>0.59</b>	<b>0.105</b>	<b>0.0117</b>

Source: Kern COG 2018

A conformity analysis was prepared for the 2018 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 2042. Consequently, the impact from PM10 emissions would be a potentially significant impact. However, the *2007 PM-10 Maintenance Plan* allows for trading of NOx and PM10 emissions at a 1.5 to 1 ratio. Since the PM10 increase associated with the Plan and No Project alternative are relatively small, this would allow PM10 emissions to pass the conformity test under this alternative. Consequently, the increase would not be considered substantial, and the impact related to criteria pollutant emissions would remain less than significant.

### Toxic Air Contaminants

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 will be used as 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 (2042) vs. Plan (2042)**

Existing 2017	2042 RTP Plan	2042 No Project
0.3862	0.259	0.2734

*Source: Kern COG 2018*

As shown in **Table 5.0-5**, the No Project Alternative would generate more PM2.5 from heavy-duty diesel emissions than under the 2018 RTP but would be less than under existing conditions. CARB has several programs and regulations in place to reduce DPM emissions state-wide. 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 2018 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 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, 2018 RTP, and the No Project Alternative are shown in **Figures 4.3-3 through 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 2018 RTP would be similar. Regarding sensitive receptor locations, the 2018 RTP and No Project Alternative scenarios would result in similar impacts to sensitive receptors.

Another substantial source of toxic air contaminants (TACs) are stationary sources, such as diesel generators, industrial processes, and dry cleaners. As with the 2018 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 2042. 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 PM<sub>2.5</sub> from diesel would be greater in Kern County under the No Project Alternatives; 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 2042 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 as 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 2018 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 past trends, 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 affect 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 to affect significant biological resources. On balance, it is anticipated that the RTP's impacts to biological resources would be less than the No Project Alternative because it would result in 56,000 acres of land consumed compared to 58,560 acres of land consumed under the No Project Alternative.

### ***Cultural Resources***

Implementation of the 2018 RTP would result in the same regional total population (1,469,500) 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 past trends, uninfluenced by additional transportation investments and growth policies contained within the 2018 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 (58,560 acres as compared to 56,000 acres 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 to uncover a greater number of previously undisturbed resources.

The proposed 2018 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 2018 RTP's impacts to 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-4 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.

### *Greenhouse Gas Emissions*

The 2018 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 2018 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 2042 be greater than in 2017). As shown in **Table 5.0-6**, in 2042 mobile source emissions would be 6,138,966 metric tons of CO<sub>2</sub> equivalents (MTCO<sub>2e</sub>) under the No Project Alternative, compared to 5,787,333 MTCO<sub>2e</sub> under the 2018 RTP, which is a six percent increase compared to under the 2018 RTP.

**Table 5.0-6**  
**Annual Total Mobile Source GHG Emissions – 2017 Compared to 2042 – No Project vs. Plan**

Source	2017 (MTCO <sub>2e</sub> /Year)	2042 – Plan (MTCO <sub>2e</sub> /Year)	2042 – No Project Alternative (MTCO <sub>2e</sub> /Year)
Mobile Sources	5,658,265	5,787,333	6,138,966

Source: Kern COG 2018

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 reductions plans such as AB 32 (i.e., would emissions in 2020 be the same as emissions in 1990). In 2020 mobile source emissions would be roughly 5,494,878 without the Plan, as opposed to 4,363,348 MTCO<sub>2e</sub> with the Plan, as shown in **Table 5.0-7**.

**Table 5.0-7**  
**Annual Total Mobile Source GHG Emissions – 1990 Compared to 2020 – No Project vs. Plan**

Source	1990 (2005 minus 15%) (MTCO <sub>2e</sub> /Year)	2020 – Plan (MTCO <sub>2e</sub> /Year)	2020 – No Project Alternative (MTCO <sub>2e</sub> /Year)
Mobile Sources	3,723,439	4,363,348	5,494,878

Source: 2012 Kern County Inventory, Kern COG 2018 and Impact Sciences 2018

In comparison, mobile source emissions in 1990 were estimated to be 3,575,806 MTCO<sub>2e</sub>. Therefore, significance thresholds would be exceeded for the first two thresholds under the No Project Alternative. Further, the No Project Alternative would generate more total GHG emissions than the 2018 RTP.

California's 2017 Climate Change Scoping Plan provides recommended targets for local plan-level greenhouse gas emissions reductions of no more than six MTCO<sub>2e</sub> per capita by 2030, and no more than two MTCO<sub>2e</sub> per capita by 2050 to achieve targets under SB 32 and the longer-term State emissions reduction goal of 80 percent below 1990 levels by 2050.<sup>2</sup> To remain on target to achieve these reductions a value of approximately 3.6 MTCO<sub>2e</sub> per capita for the year 2042 would be needed. As shown in **Table 5.0-5**, the No Project Alternative would result in approximately 6,138,966 MTCO<sub>2e</sub> from mobile sources. The forecasted population for 2042 is approximately 1,469,500. This results in approximately 4.2 MTCO<sub>2e</sub> per capita by 2042 for mobile sources alone.

<sup>2</sup> CARB, 2017. California's 2017 Climate Change Scoping Plan. Page 99. November .

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 not available, the increase in per capita GHG emissions is considered to be potentially significant.

The third threshold is whether Kern County would meet its SB 375 targets of a 5 percent reduction in GHG emissions from cars and light trucks in 2020 and a 10 percent reduction in 2035. Data provided by Kern COG show that without the 2018 RTP per capita GHG emissions from cars and light duty trucks would be reduced by 13 percent in 2020 and 13 percent in 2035. As shown in **Section 4.6, Greenhouse Gases, Table 4.6-7**, even under existing conditions, emissions are anticipated to be reduced by approximately 13 percent below the 2005 base scenario. Although emissions would increase from existing conditions, population would also increase, and it is expected that per capita emissions for the No Project Alternative would be similar to existing conditions. Although information required to show an accurate analysis of the impact under the No Project Alternative is not available, it is assumed that GHG per capita emissions would be similar to existing conditions, and therefore the County would meet its targets for GHG reductions under SB 375 under the No Project Alternative. Overall impacts from the No Project Alternative would be greater than under the 2018 RTP but would be less than significant (as under the Plan).

### ***Land Use***

In the No Project Alternative, population would still grow by 570,675 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 2018 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.

## *Noise*

Implementation of the 2018 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 1,469,500 million people in 2042. 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 2018 RTP.

Both the No Project and 2018 RTP would expose people to an increase in the noise and vibration level. 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 4.8-3** as compared to **4.8-4**).

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. In the No Project Alternative, the population of the Kern COG region would still grow by approximately 570,675 people and add an additional 175,394 households by 2042; however no regional transportation investments would be made above the existing programmed projects. The population distribution would follow past trends, uninfluenced by the Plan's 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 and fewer places where communities would be disrupted. The GIS analysis shows that under the No Project Alternative uses within 150 feet of transportation facilities would include 5,577 acres of business land uses (retail, office, industrial) and 3,883 acres of residential land uses (very low to high density housing land uses). For the Plan, 5,810 acres of business land uses and 4,307 acres of residential land uses would be affected by transportation projects. This could result in a greater number of displaced business and residences under the Plan. The No Project impacts would be less than the Plan impacts for **Impacts POP-1** and **POP-2** as fewer residential uses would be affected.

The No Project Alternative is expected to accommodate the same increases in total population as the Plan. However, the 2018 RTP includes land use measures that would target growth in developed urban areas. These mitigation measures are absent in the No Project Alternative. The 2018 RTP also includes additional transportation improvements that facilitate access to currently vacant lands that would be less accessible with the No Project Alternative. This improved accessibility under the 2018 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 2018 RTP and the No Project Alternative would result in a 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 official's 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.

Under the No Project Alternative, is anticipated that more households could be exposed to wildfire threat than under the proposed 2018 RTP as more development would occur in areas outside the urban core and therefore as for the Project this impact (**Impact FIRE-2**) 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 No Project Alternative. The No Project impacts would be greater than the Plan impacts for **Impact FIRE-1 and Impact FIRE-2** because of the increased consumption of open space and vacant land and the lack of a comprehensive regional plan, the increase number of households that could be exposed for wildland fire risk, and the strain on fire resources and therefore increase the potential for new construction which would result from the above actions.

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 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 and 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 over use and therefore impacts would be significant as for the Plan.

### ***Transportation***

Under this alternative, with new transportation infrastructure investment ceasing after 2019, while growth continues at forecasted rates. 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. Congested hours overall would increase by more than three-fold. No Project Alternative congested hours in core urban areas would increase by 48 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 could include many more roadway segments with unacceptable LOS F, and 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

### Energy

Since the No Project Alternative includes fewer transportation and development projects than the Plan, it would have more of an impact related to the need for expanded or newly constructed energy facilities to serve the anticipated sprawl accompanying population growth in the region due to less emphasis on TPAs. 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 5.0-8**.

**Table 5.0-8**  
**Gasoline and Diesel Consumption – No Project (2042) vs. Plan (2042)**

Scenario	Vehicle Miles Travelled (billions of miles)	Gasoline Consumption (million gallons)	Diesel Consumption (million gallons)
No Project (2042)	13.6	288.1	310.0
2018 RTP (2042)	12.884	269.9	293.6

*Source: Kern COG 2018, EMFAC 2014*

The No Project Alternative is expected to accommodate the same increase in total population, households, and jobs as the Plan. However, as shown in **Table 5.0-9**, the total energy consumption under the No Project Alternative would be greater than under the RTP.

**Table 5.0-9**  
**Residential Energy Consumption**  
**No Project (2042) vs. Plan (2042)**

Scenario	Energy Consumption (billion Btu/year)
No Project (2042)	29,175
2018 RTP (2042)	27,629

*Source: Kern COG 2018*

Unlike the No Project Alternative, the 2018 RTP includes 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 accounting for the reduction in total energy consumption seen in **Table 5.0-9**. 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.

### **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 2018 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 to 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.

## ***Water Resources***

While the No Project Alternative would reduce the number of transportation projects, it would result in greater vacant land consumption that would, in turn, increase the amount of impervious surfaces and increase impacts to water resources. Therefore, the No Project Alternative impacts to water resources could be greater than the impacts from the Plan and would be significant as under the Plan. However, new ground water regulations are anticipated to reduce sprawl and large lot developments in overdrawn water basins such as the San Joaquin Valley.

With fewer transportation projects than the Plan, the direct effects of the No Project Alternative from transportation projects on water resources would be reduced when compared with the Plan. As the currently planned transportation projects included in the No Project Alternative are built, the impacts resulting from increased roadway runoff and drainage patterns would remain significant. Similarly, impacts to groundwater infiltration caused by the increased impervious surfaces of roadway projects, and to increased flooding hazards, would remain significant.

While the Plan and the No Project Alternative would result in the same total population, the potentially more dispersed growth pattern under the No Project Alternative could result in less efficient use of water

resulting in greater demand (more single-family homes with landscaping) and therefore would result in 211 million gallons per day compared to the Plan's water use of 198 million gallons per day. As the Plan's more compact growth pattern would be more water efficient, the Plan's water supply impacts would be less than the No Project; impacts to water supply under the No Project Alternative would still be significant as under the Plan.

Similar to water supply impacts, wastewater generation could be increased through the less efficient land use patterns. More new development would be located in areas that are not served by existing infrastructure, which could result in additional impacts. The impacts to water quality could be greater under the No Project Alternative as the projected urbanized acreage under the No Project Alternative would be greater compared to the Plan. Due to a 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 and impacts would be significant as under the Plan. 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. Therefore, impacts to water resources under the No Project Alternative would be greater than the Plan and significant (as they would be for the Plan).

### **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 2018 RTP would include slightly more infill development than the Old Plan because of increased infill in accordance with the Bakersfield High Speed Rail Station Area 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, as it did not include refinements as a result of the Bakersfield High Speed Rail Station Area 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 (impacts would be significant).

## *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, existing year (2017) emissions were compared to horizon year (2042) emissions.

Results of modeling are presented in **Table 5.0-10, Criteria Pollutant Emissions from Mobile Sources**. As shown, there are reductions of ROG, NO<sub>x</sub> 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 5.0-10  
Criteria Pollutant Emissions from Mobile Sources – Old Plan (2042) vs. Plan (2042)**

Scenario	Tons/Day					
	ROG	NO <sub>x</sub>	CO	PM10	PM2.5	SO <sub>x</sub>
Existing 2017	6.51	29.7	44.6	1.74	0.8378	0.1519
2018 RTP 2042	3.14	11.6	19.8	2.2	0.8924	0.1542
<b>2018 RTP Net</b>	-3.37	-18.1	-24.8	0.46	0.0546	0.0023
Old Plan Alternative 2042	3.16	11.60	19.80	2.21	0.90	0.15
<b>Old Plan Alternative Net</b>	-3.35	-18.10	-24.80	0.47	0.06	0.00

*Source: Kern COG 2018*

A conformity analysis was prepared for the 2018 RTP that analyzes emissions of ozone precursors (ROG and NO<sub>x</sub>), 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 passed the applicable conformity tests and would be in conformity with the state implementation plans (SIPs). The Old Plan Alternative would generate slightly greater PM10 emissions than the 2018 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**.

### Toxic Air Contaminants

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 more closely DPM emissions, 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 5.0-11**  
**PM2.5 Emissions from Heavy Duty Diesel Vehicles (tons/day) – Old Plan (2042) vs. Plan (2042)**

Existing 2017	2042 RTP Plan	2042 Old Plan Alternative
0.386	0.259	0.260

*Source: Kern COG 2018*

As shown, the Old Plan Alternative would generate more PM2.5 emissions than under the 2018 RTP but emissions would be less than under existing conditions. 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 2018 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 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 pollutants vehicle emissions as compared to the Plan.

Another substantial source of TACs are stationary sources, such as diesel generators, industrial processes, and dry cleaners. As with the 2018 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 2042. 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 2042 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, fewer areas would be impacted by excavation and construction activities as compared to the Plan. The Old Plan Alternative did not include refinements developed as part of the Bakersfield High Speed Rail Station Area 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, that would, in turn, increase impacts to biological resources and open space, such as habitat loss and fragmentation. Therefore, the Old Plan Alternative impacts to 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 to uncover a greater number of previously undisturbed resources. Therefore, the Old Plan Alternative impacts to 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).

### ***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. The first significance threshold for GHG emissions is whether emissions would result in greater than under existing conditions (i.e., would emissions in 2042 be greater than in



2017). As shown in **Table 5.0-12**, in 2042 emissions would be 5,809,965 MTCO<sub>2e</sub> under the Old Plan Alternative, compared to 5,787,333 MTCO<sub>2e</sub> under the 2018 RTP, which is a less than one percent increase compared to the 2018 RTP.

**Table 5.0-12**  
**Annual Total Mobile Source GHG Emissions – 2017 Compared to 2042 –**  
**Old Plan (2042) vs. Plan (2042)**

<b>Source</b>	<b>2017 (MTCO<sub>2e</sub>/Year)</b>	<b>2042 – Plan (MTCO<sub>2e</sub>/Year)</b>	<b>2042 - Old Plan Alternative (MTCO<sub>2e</sub>/Year)</b>
Mobile Sources	5,658,265	5,787,333	5,809,965

*Source: Kern COG 2018.*

Although 2020 GHG emissions were not calculated for the Old Plan Alternative, 2042 mobile source emissions would be approximately one percent greater than under the 2018 RTP. As a result, it is assumed that emissions in the year 2020 would also be approximately one percent greater than under the 2018 RTP. These emissions 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 reductions plans such as AB 32 (i.e., would emissions in 2020 be the same as emissions in 1990). As the 2018 RTP would exceed 1990 thresholds, it is assumed that the Old Plan Alternative would also exceed these emissions. Therefore, significance thresholds would be exceeded for the first two thresholds under the Old Plan Alternative. Further, the Old Plan Alternative would generate more total GHG emissions than the 2018 RTP.

**Table 5.0-13**  
**Annual Total Mobile Source GHG Emissions – 1990 Compared to 2020 Plan and**  
**Old Plan (2020)**

<b>Source</b>	<b>1990 (2005 minus 15%) (MTCO<sub>2e</sub>/Year)</b>	<b>2020 Plan (MTCO<sub>2e</sub>/Year)</b>	<b>2020 –Old Plan (MTCO<sub>2e</sub>/Year)</b>
Mobile Sources	3,723,439	4,363,348	4,406,981

*2012 Kern County Inventory, Kern COG 2018 and Impact Sciences 2018*

*California's 2017 Climate Change Scoping Plan* provides recommended targets for local plan-level greenhouse gas emissions reductions of no more than six MTCO<sub>2e</sub> per capita by 2030, and no more than two MTCO<sub>2e</sub> per capita by 2050 to achieve targets under SB 32 and the longer-term State emissions

reduction goal of 80 percent below 1990 levels by 2050.<sup>3</sup> To remain on target to achieve these reductions a value of approximately 3.6 MTCO<sub>2</sub>e per capita for the year 2042 would be needed. As shown in **Table 5.0-12**, the Old Plan Alternative would result in approximately 5,809,965 MTCO<sub>2</sub>e from mobile sources. The forecasted population for 2042 is approximately 1,469,500. This results in approximately 4.0 MTCO<sub>2</sub>e per capita by 2042 for mobile sources alone under the Old Plan.

Because information required to show a full and accurate quantified analysis of the impact of the Old Plan Alternative on AB 32 and SB 32 with regards to land uses in Kern County not available, 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.

As previously discussed, it is assumed that emissions under the Old Plan Alternative would be approximately one percent greater than under the 2018 RTP. With a one percent increase over the 2018 RTP, per capita emissions would meet targets for GHG reductions under SB 375 under the Old Plan Alternative.

### *Land Use*

The Old Plan Alternative does not include refinements developed as part of the Bakersfield High Speed Rail Station Area Plan, and therefore would result in greater consumption of open space land. 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).

### *Noise*

The Old Plan would result in more roadway capacity transportation improvements. The emphasis on roadway capacity projects could result in more people exposed to roadway noise. Similar to the No

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<sup>3</sup> Ibid.

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 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 2018 Plan would include slightly more infill development as a result of refinements developed as part of the Bakersfield High Speed Rail Station Area Plan. 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 2014 RTP list of financially constrained projects, which reflect improvements to transit, bike, and walk infrastructure. The growth pattern under the Old Plan would be similar to under the proposed Plan with the exception that the old Plan did not include refinements developed as part of the Bakersfield High Speed Rail Station Area Plan and therefore growth would be slightly more dispersed. Transportation investments in the Old Plan are more focused on roadways. As shown in **Table 5.0-7**, in 2042 the Old Plan alternative would have slightly greater VMT in 2042 as compared to the Plan, as well as result in a drop in transit and active mode shares. Congested hours overall would be slightly lower than the Plan, reflecting relatively greater roadway investments compared to the Plan. However, traffic in the core urban areas would be lower than the Plan as a result of less infill development. Impacts related to VMT would remain significant, as would impacts related to the CMP and congestion under the Old Plan Alternative.

### ***Utilities***

#### **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 2018 RTP, as indicated in **Table 5.0-14**.

**Table 5.0-14**  
**Gasoline and Diesel Consumption – Old Plan (2042) vs. Plan (2042)**

Scenario	Vehicle Miles Travelled (billions of miles)	Gasoline Consumption (million gallons)	Diesel Consumption (million gallons)
Old Plan Alternative (2042)	12.942	270.8	294.95
2018 RTP (2042)	12.884	269.95	293.64

Sources: Kern COG 2018, EMFAC 2014

As shown in **Table 5.0-15**, the total energy consumption under the Old Plan Alternative could be greater than under the 2018 RTP, and therefore, would result in a greater need for new or expanded energy facilities and impacts would be significant (as under the Plan). Although, in general due to conservation and increased regulatory requirements, energy consumption is not anticipated to rise as much as conservatively estimated in this EIR.

**Table 5.0-15**  
**Residential Energy Consumption - Old Plan Alternative**

Scenario	Total Energy Consumption (billion Btu/year)
Old Plan Alternative (2042)	28,053
2018 RTP (2042)	27,629

Source: Kern COG 2018

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. (Although the Old Plan does not include the Bakersfield High Speed Rail Station Area Plan and therefore would result in slightly less infill.) Infill and mixed-use developments are generally higher efficiency dwellings resulting in a reduction in total energy consumption (see **Table 5.0-15**). 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.

**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. Under the Old Plan Alternative, refinements developed as part of the Bakersfield High Speed Rail Station Area Plan were not anticipated (although individual jurisdictions could still seek to reduce the urban footprint through their general plans and focus growth around High Speed rail stations). 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 needed 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 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 would result in a slightly more dispersed development pattern that could have more impact on solid waste generation. The Old Plan Alternative is expected to accommodate the same increase in total population, households, and jobs as the Plan. However, the Plan includes the Bakersfield High Speed Rail Station Area Plan, which would help reduce the impact to solid waste facilities. Therefore, impacts could be slightly greater under the Old Plan Alternative and impacts would be significant.

***Water Resources***

The Old Plan Alternative would result in a slightly more dispersed development pattern. Therefore, the Old Plan would result in a greater amount land covered by impervious surfaces, thereby 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. Therefore, the Old Plan Alternative impacts to 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 groundwater infiltration caused by the increased impervious surfaces of roadway projects, and to increased flooding hazards, would remain significant.

Similar to water supply impacts, wastewater generation could be increased through the less efficient land use patterns. The impacts to water quality would be greater under the Old Plan Alternative as the projected urbanized acreage under the Old Plan Alternative would be greater compared to the Plan. Due to a 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).

### **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, that are up-to-double current 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 would be less than the Plan as a result of a more compact growth pattern.

### **Toxic Air Contaminants**

The Countywide Infill Alternative could generate less PM<sub>2.5</sub> 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.

Another substantial source of TACs are stationary sources, such as diesel generators, industrial processes, and dry cleaners. As with the 2018 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 2042. 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.

## *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, paleontological 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.

### ***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. As such, GHG emissions for the Countywide Infill Alternative would likely be lower than the Plan. However, it is unlikely (assuming existing emission factors) that emissions would be sufficiently reduced to the point where 2042 emissions are no greater than existing emissions, or 2020 emissions are no greater than 1990 emissions. However, it is anticipated that sector specific compliance with AB 32 would ensure that Kern County would meet AB 32 requirements through measures uninfluenced by the RTP (although as yet these measures cannot be quantified and documented on a countywide basis). 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.

### *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 4.9, 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.

### *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 travelled 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 to 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 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 as 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 4.10.4, 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. 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.

### **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 5.0-16**.

**Table 5.0-16  
Gasoline Consumption**

Scenario	Vehicle Miles Travelled (billions of miles)	Gasoline Consumption (million gallons)
Countywide Infill Alternative (2042)	11.734	218.250
2018 RTP (2042)	12.884	269.954

*Source: Kern COG 2018, EMFAC 2014*

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 2018 RTP. However, based on current emission factors, impacts to energy would remain significant. Energy use would be more efficient per capita with the Countywide Infill Alternative, however, impacts would remain significant.

### **Wastewater**

The Countywide Infill Alternative includes strategies to focus growth in urban areas and TPAs at higher densities than under the 2018 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.

### ***Water Resources***

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.

### 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**

<b>Impact Measure<sup>1</sup></b>	<b>Plan</b>	<b>No Project</b>	<b>Old Plan</b>	<b>Countywide Infill</b>
<i>Population, Housing and Employment</i>				
Population	1,469,500	1,469,500	1,469,500	1,469,500
Households	443,700	443,700	443,700	443,700
Employment	483,500	483,500	483,500	483,500
<i>Land Use and Biological Resources</i>				
Open space land consumed (sq. miles)	87.5	91.5	>Plan	< Plan
<i>Agricultural Resources</i>				
Farmland Consumed (sq. miles)	24.7	39.3	>Plan	< Plan
<i>Traffic</i>				
Total Annual VMT (billions)	12.88	13.60	12.94	11.73
VMT per capita	24.02	25.36	24.13	21.88
Congested Hours (County)	904,270	989,864	903,586	858,940
Congested Hours (Metro Core)	449,407	526,672	428,290	417,511
<i>Air Quality/Health</i>				
SJV NOx ton/day (budget = 18.6)	11.56	12.21	11.6	9.37
Total SB 375 CO2 (tons per workday)	11,323	11,537	11,368	10,761

Impact Measure <sup>1</sup>	Plan	No Project	Old Plan	Countywide Infill
Per capita SB 375 CO2 (lbs.)	15.41	15.70	15.47	14.65
2042 vs 2005 (SB 375 CO <sub>2</sub> % reduced)	-14.97	-14.45	-14.52	-19.62
Households within 500 feet of high volume roadways <sup>2</sup>	9,641	10,350	Similar to Plan	> Plan
Households w/in 0.25 mile freeways with high AQI	16,635	18,672	Similar to Plan	> Plan
Est. Health Incidences Avoided Compared to No Project <sup>3</sup>	953	Base	889	4160
Households within 0.25 mile of RTP Projects <sup>4</sup>	40,805	5,471	44,799	46,980
<i>Energy Use</i>				
Gasoline and Diesel 2042 million gallons	563.6	598.1	565.8	456.2
Total Est. Residential Energy Use (billion Btu/year)	27,629	29,175	28,053	26,729
<i>Water Use</i>				
2042 Residential Water Use million gallons /day	198	211	202	191.5

Source: Kern COG and Impact Sciences, 2018

<sup>1</sup> 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.

<sup>2</sup> High volume roadway is one with 50,000 ADT on rural roads and 100,000 ADT on urban roads.

<sup>3</sup> Gross estimate based on total emissions in the County, not taking into account proximity to roadways.

<sup>4</sup> Does not include construction of development projects.

As shown in **Table 5.0-17**, the Countywide Infill Alternative would reduce 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 2042. 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**

<b>Alternative</b>	<b>Better than Proposed Project</b>	<b>Worse than Proposed Project</b>
Alternative 1 No Project Alternative	Noise (in urban areas) Air Quality (urban areas)	Aesthetics Air Quality (regional) Agricultural Resources Biological Resources Cultural Resources (archaeology) Greenhouse Gas Emissions Land Use -- Open Space Consumption Public Services and Utilities (in non-urban areas) Traffic (increased Countywide VMT) Water Resources
Alternative 2 Old Plan	Noise (in urban areas) Air Quality (urban areas)	Aesthetics Air Quality (regional) Agricultural Resources Biological Resources Cultural Resources Greenhouse Gas Emissions Land Use Public Services and Utilities (in non-urban areas) Traffic (increased Countywide VMT) Water Resources
Alternative 3 Countywide Infill Alternative	Agricultural Resources Biological Resources Cultural Resources (archaeology/paleontology/tribal cultural resources) Traffic (trip reductions from proximity of uses)	Aesthetics in urban areas Air Quality (urban areas) Land Use Compatibility with General Plans Noise (urban areas) Public Services and utilities in urban areas (police, schools, existing parks, water, sewer)

Source: *Impact Science, 2018*

As discussed throughout this PEIR, Kern COG has no land use authority; rather it sets regional land use policy. SB 375 addresses the land use component (in the context of transportation planning) of statewide efforts to achieve AB 32 GHG reduction goals that include all sectors of the economy. In order to meet the SB 375 targets for statewide GHG reductions, CARB identified that Kern COG must plan to reduce GHG emissions compared to 2005 by 5 percent per capita by 2020 and 10 percent per capita by 2035. Kern COG has developed the SCS (the regional land use policy component of the 2018 RTP) which sets forth land use strategies to meet (and in fact exceed) these GHG emissions reduction targets. Actual implementation of the SCS will be undertaken by local jurisdictions through general plans and specific plans and through actions on individual projects.

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 2042, 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 cannot 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 2018 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 2018 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 2018 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 2042. Rather, Kern COG is rejecting the inclusion of policies in the 2018 RTP that would impose extensive land use intervention (to mandate 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 appear 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

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Section 15126 of the *California Environmental Quality Act (CEQA) Guidelines* must also identify (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 proposed project. This section addresses these impact categories. In addition, this section describes effects listed in State CEQA Guidelines Appendix G that are not addressed in Chapter 4, and explains why they are either less than significant or there would be no impact.

### 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 *CEQA Guidelines*, increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. The *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 4.9, Population, Housing & Employment (Impact POP-1)**, the transportation investments and urban form strategies in the proposed 2018 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 2018 RTP would strategically target growth in areas proximate to jobs and transit. However, the improved accessibility from the proposed 2018 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.

The 2018 RTP housing and employment growth pattern continues the emphasis developed in the 2014 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 2018 RTP/SCS goes well beyond General Plans and could therefore result in unplanned growth in urban areas as well.

Based on the above analysis, implementation of the 2018 RTP/SCS could 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 2018 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 and impacts:

### 6.2.1 Aesthetics

- |              |  |
|--------------|--|
| Impact AES-1 | Have a substantial adverse effect on a scenic vista for example by impairing views of scenic resources (i.e., mountains, ocean, rivers, or significant man-made structures) as seen from existing transportation facilities and other key public vantage points in Kern County. <i>(Significant at the regional level.)</i>                                    |
| Impact AES-2 | Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic or eligible highway for example by altering the appearance of designated scenic resources along or near a state-designated or eligible scenic highway or vista point. <i>(Significant at the regional level.)</i> |
| Impact AES-3 | Substantially degrade the existing visual character or quality of the site and its surroundings (for example, by creating significant contrasts, with the scale, form, line, color, and/or overall visual character of the existing landscape setting). <i>(Significant at the regional level.)</i>  |

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)); and/or result in the loss of “Forest Land” as defined in the California Forest Legacy Act of 2007 (Pub. Resources Code, § 12220(G)) or conversion of Forest Land into non-forest use. *(Significant at the regional 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. *(Significant at the regional level.)*

## 6.2.3 Air Quality

Impact AIR-3 Projected short-term emissions of criteria pollutants (construction of transportation projects and anticipated development) are considered to be significant if they would result in substantial criteria pollutant emissions. *(Significant at the regional and TPA level.)*

Impact AIR-4 Projected long-term emissions of toxic air contaminants (DPM from heavy-duty diesel trucks and other emissions from industrial activities) are considered significant if they would be greater than current emission levels. *(Significant at the regional and TPA level.)*

Impact AIR-5 Localized concentrations of toxic air contaminants at sensitive receptors (short-term and/or long-term) are considered significant if they would exceed existing conditions. *(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.)*

#### 6.2.5 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 Directly or indirectly destroy a unique paleontological resource or site. *(Significant at the regional and TPA level.)*

Impact CR-4 Disturb any human remains, including those interred outside of formal cemeteries. *(Significant at the regional and TPA level.)*

Cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape sacred place, or object with cultural value to a California Native American tribe, and that is:

Impact TCR-1 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). *(Significant at the regional and TPA level.)*

Impact TCR-2 a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. *(Significant at the regional and TPA level.)*

### 6.2.6 Greenhouse Gas Emissions

Impact GHG-1 Increase GHG emissions compared to existing conditions (2017). *(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.)*

### 6.2.7 Land Use

Impact LU-1 Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. *(Significant at the regional and TPA level.)*

Impact LU-2 Physically divide an established community. *(Significant at the regional and TPA level)*

## 6.2.8 Noise

Impact NOISE-1 Expose persons or generate noise in levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; and/or result in a substantial temporary or periodic increase in ambient noise levels above levels existing without the project; and/or result in a substantial permanent increase in ambient noise levels above levels existing without the project. *(Significant at the regional and TPA level.)*

Impact NOISE-2 Expose people to or generate excessive groundborne vibration. *(Significant at the regional and TPA level.)*

## 6.2.9 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 Require the acquisition of land that would displace a substantial number of existing businesses or homes. *(Significant at the regional and TPA level.)*

## 6.2.10 Public Services

### *Fire Protection*

Impact FIRE-2 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.)*

### *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.)*

## 6.2.11 Transportation and Traffic



Impact TR-1 Substantial increase in VMT and/or hours of congestion. *(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.)*

### 6.2.12 Utilities

#### *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.)*

#### *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.)*

### 6.2.13 Water Supply and Hydrology

Impact W-1 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. *(Significant at the regional and TPA level.)*

Impact W-2 Substantially interfere with groundwater recharge. *(Significant at the regional level.)*

Impact W-3 Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard

delineation map; or place within a 100-year flood hazard area structures which would impede or redirect flood flows; or expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; and/or inundation by seiche or mudflow. *(Significant at the regional level)*

Impact W-4                      Substantially increase demand for water such that existing supplies and facilities would not be able to accommodate demand *(Significant at the regional and TPA level.)*

### 6.3                      SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL EFFECTS

Section 15126.2(c) 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(c) 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 would 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
- The project involves uses in which irreversible damage could result from any 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 2018 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 2018 RTP represents a commitment of these areas to urban uses for the foreseeable future. The proposed 2018 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 2018 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 2018 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.

With respect to operation 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 long-term increase in the demand for electricity and natural gas supplies and distribution. However, the proposed 2018 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 2018 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 15,808 acres of farmland land and 56,000 acres of vacant land would be converted to urban land uses as a result of implementation of the proposed 2018 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 25,152 acres of farmland and 58,560 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.

### 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 2018 RTP does not, in and of itself, result in greater potential of 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 for example by impairing views of scenic resources (i.e., mountains, ocean, rivers, or significant man-made structures) as seen from existing transportation facilities and other key public vantage points in Kern County. (*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 or eligible highway for example by altering the appearance of designated scenic resources along or near a state-designated or eligible scenic highway or vista point. (*Less than significant at the TPA level.*)
- Impact AES-3            Substantially degrade the existing visual character or quality of the site and its surroundings (for example, by creating significant contrasts, with the scale, form, line, color, and/or overall visual character of the existing landscape setting). (*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)); and/or result in the loss of “Forest Land” as defined in the California Forest Legacy Act of 2007 (Pub. Resources Code, § 12220(G)) or conversion of Forest Land into non-forest use. *(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.)*

#### 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 Greenhouse Gases

Impact GHG-3: Conflict with SB 375 GHG emission reduction targets. *(Less than significant at the regional and TPA level.)*

#### 6.4.6 Noise

Impact NOISE-3 Exposure of people residing or working in the project area to excessive noise levels if the project is located within an area covered by 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. *(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.)*

#### 6.4.7 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.)*

#### 6.4.8 Traffic and Transportation

- Impact TR-3 Result in a change in air traffic patterns, including either an increase in air traffic levels or a change in location that results in substantial safety risks. *(Less than significant at the regional and TPA level.)*
- Impact TR-4 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-5 Result in inadequate emergency access. *(Less than significant at the regional and TPA level.)*
- Impact TR-6 Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. *(Less than significant at the regional and TPA level.)*

### 6.4.9 Utilities

- Impact WW-1 Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board. *(Less than significant at the regional and TPA level.)*
- Impact WW-2 Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. *(Less than significant at the regional and TPA level.)*
- Impact WW-3 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.)*

### 6.4.10 Water Resources

- Impact W-2 Substantially interfere with groundwater recharge. *(Less than significant at the TPA level.)*
- Impact W-3 Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map; or place within a 100-year flood hazard area structures which would impede or redirect flood flows; or expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; and/or inundation by seiche or mudflow. *(Less than significant at the TPA level.)*

## 6.5 LESS THAN SIGNIFICANT ENVIRONMENTAL EFFECTS NOT ANALYZED IN THE EIR

### 6.5.1 Geology

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. Transportation and land use projects under the 2018 RTP would not exacerbate existing environmental hazards related to



geological and soil conditions. Therefore, under *CBIA v. BAAQMD*, there would be no Plan impact associated with the following Appendix G questions:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42;
  - Strong seismic ground shaking;
  - Seismic-related ground failure, including liquefaction; and
  - Landslides.
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

The following Appendix G question would not fit the CBIA decision, in that groundwater pollution caused by inappropriately sited septic tanks could affect offsite beneficial uses of groundwater:

- 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

However, the impact from use of septic tanks would be less than significant as County regulation would assure proper septic tank design.<sup>1</sup>

## 6.5.2 Hazards

Transportation improvement projects under the 2018 RTP could facilitate the routine transport of hazardous materials on roadways or railways in Kern County but would not directly result in a transport-related hazard. Compliance with existing laws and regulations, such as the federal Resource Conservation and Recovery Act (RCRA), the state Hazardous Waste Control Act and California Vehicle Code, and local hazardous substances and waste regulation, would ensure that the routine transport of hazardous materials, the release of hazardous materials through reasonably foreseeable upset, and the handling of acutely hazardous substances within proximity to schools would be such that impacts from transportation and land use projects under the 2018 RTP would be less than significant.

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<sup>1</sup> Kern County Public Health Services Department, Septic Installation Requirements. <http://kernpublichealth.com/land-development/2018>

With respect to hazardous materials sites listed under Government Code Section 65962.5, the majority of transportation improvements involve modification of existing facilities, rather than construction of new facilities, and would not be likely to occur on known hazardous materials sites. With regard to future transportation projects that would develop new facilities, and land use projects, it would be speculative to determine whether future projects would be sited on listed hazardous materials sites. However, as part of project-specific CEQA review such projects would be required to address any on-site environmental issues, including any potential hazardous materials, and mitigate such impacts accordingly such that there would be no significant hazard to the public or the environment. Impacts would be less than significant.

RTP transportation projects and development would occur within two miles of a public airport and in the vicinity of private airstrips. 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. 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 2018 RTP is considered less than significant. Also, under the *CBIA v BAAQMD* case mentioned above, CEQA documents need not analyze exposure of project residents and workers to preexisting airport and airstrip hazards, and land use projects under the 2018 RTP would not exacerbate these hazards.

The 2018 RTP/SCS would have no significant adverse impact on adopted emergency response plans or emergency evacuation plans. Emergency plans and programs are required to be updated periodically to plan for forecasted growth, and project-level CEQA reviews routinely assure that individual land use or transportation projects do not adversely affect emergency response or evacuation plans. Impacts would be less than significant. 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 2018 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 2018 RTP includes Intelligent Transportation

Systems (ITS) that apply advanced information processing, communication, vehicle sensing, and traffic control technologies to the surface transportation system that could help optimize evacuation in the event of an emergency. Therefore, given that there is multi-hazard plan in place on a Countywide basis, and the RTPs inclusion of ITS project and that project-level review is required for all individual projects to ensure adequate emergency access the potential for adverse impacts land use and transportation changes from the implementation of the proposed RTP are considered less than significant.

### 6.5.3. Mineral Resources

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.

Unless new resources are permitted for mining, or alternative resources are utilized, existing resources could be depleted in the next 15 to 20 years. The deposits could last longer than projected if new areas are permitted and/or if excavators are granted variances permitting excavations below 90 feet.

The 2018 RTP includes transportation system improvements, such as new or expanded highway/arterials, HOV lanes, new heavy rail, goods movement projects and infrastructure associated with these projects. The projects included in the RTP as well as anticipated development would result in demand for aggregate resources for construction. As a long-range planning document, the RTP does not include specific construction information related to individual projects. However, it is anticipated that the projects included in the Plan, as well as anticipated development would require substantial amounts of aggregate resources.

In addition, the RTP includes transportation and development projects that have the potential to impact mineral resources because they could take place in previously undisturbed areas. Improvements and modifications to existing rights-of-way, such as new bus-ways and capacity enhancement facilities, mixed flow lanes, and right-of-way maintenance, would have less potential to impact mineral resources because these project locations have previously been disturbed. Construction of additional lanes, could impact access to mineral resources, if it would entail grading, trenching, excavation, and/or soil removal in an area not previously paved. This document analyzes impacts to mineral resources on a programmatic level; project-level analysis of impacts will be needed as appropriate to project-specific conditions.

Mineral resource extraction is generally not located in urban areas because of land use conflicts. If any transportation or land use projects developed under the 2018 RTP were to be located in areas of

significant mineral resources, they would be required to obtain a discretionary permit that adheres to the policies of the applicable jurisdictions.

There are no transportation or land use projects included in the 2018 RTP that would directly result in the extraction or paving-over of mineral resources of value to the state, region, or County. Therefore, implementation of the 2018 RTP would not result in the loss of availability of such mineral resources, and impacts pertaining to mineral resources would be less than significant.

## 7.0 LIST OF EIR PREPARERS

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**APPENDIX 1.0**

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**Notice of Preparation  
Comments on Notice of Preparation**



## NOTICE OF PREPARATION

To: Interested agencies and individuals

Subject: Notice of Preparation of a Program Environmental Impact Report for the 2018 Regional Transportation Plan (including a Sustainable Communities Strategy)

Date: May 1, 2017

Lead Agency: Kern Council of Governments  
1401 19<sup>th</sup> 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 2018 Regional Transportation Plan (RTP), which will include 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, Fixing America's Surface Transportation (FAST) Act, 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).

Kern COG is soliciting views from your agency as to the scope and content of the environmental issues to be included in the EIR. Kern COG seeks input from local, state, and federal agencies, as well as other interested parties, on issues relevant to the RTP (including the SCS). 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 COGs office (see location above), **Thursday May 18, 2017 at 6:30 PM**. Due to the time limits mandated by state law, your response must be sent **not later than 30 days** after the date of this notice.

Please send your response to Becky Napier, Regional Planner III, either electronically to: [napier@kerncog.org](mailto:napier@kerncog.org); or at the mailing address shown above. Please include a return address and the name of a contact person in your agency/organization.

## 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 significant environmental effects. The 2018 RTP is a regional planning document that provides policy guidance to local jurisdictions within Kern County. Specifically, the 2018 RTP necessitates preparation of a Program EIR, which is a “first-tier” CEQA document designed to consider “broad policy alternatives and programwide mitigation measures” (*State CEQA Guidelines* Sec. 15168). The programmatic environmental analysis for the Program EIR will evaluate environmental effects, such as direct and indirect effects, growth-inducing impacts, and cumulative impacts, and will include 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 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 2018 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.

## 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 including Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco. The Kern COG Board of Directors is comprised of one elected official from each of the 11 incorporated cities in Kern County, two Kern County Supervisors, and ex-officio members representing Caltrans, Golden Empire Transit District, and the Joint Planning Policy Board. **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 a number of 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 a Sustainable Communities Strategy (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 greenhouse gas 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.
- 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.

## **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 was adopted in 2014. The 2018 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 2018 RTP and Program EIR development processes.

### **Regional Transportation Plan**

The RTP defines the region's mobility needs and issues through 2042, 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 2018 RTP has already been initiated by Kern COG. The Kern COG board adopted the 2015 – 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 activity, such as the 2018 RTP and SCS.

### **Sustainable Communities Strategy**

The requirement of an SCS under SB 375 more closely ties regional transportation planning with regional housing planning under the Regional Housing Needs Analysis (RHNA). The SCS will coordinate planning for land use and transportation at a regional scale, with the goal of reducing the amount that people have to drive and 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;
- 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 5 percent reduction in per capita GHG emissions for the planning year 2020 and a 10 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. MPOs across the state are undergoing the updated target-setting process required by SB 375. CARB will review the MPO target recommendations made by the MPOs and will adopt GHG reduction targets for each MPO. Targets for Kern COG and the seven other MPOs covering the San Joaquin Valley are anticipated to be set by January 1, 2018, for use in the 2018 RTP/SCS. If the targets established by CARB cannot be feasibly met, Kern COG will prepare an Alternative Planning Strategy (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.



## **Public Outreach**

Community engagement and outreach are an important component of the development of the 2018 RTP. By nature, this plan represents the region's mutual vision for its future and was developed using a grassroots, bottom-up approach. In addition to the outreach undertaken in support of "Directions to 2050," 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. Kern's land use model tool, UPlan, allocates growth based on latest land use and planning assumptions. This tool allows Kern COG to develop and present the public with scenarios as required for the development of Kern's SCS. Kern's UPlan model is a sub-county model that allows input of growth numbers for county sub-areas. 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 must be reflected in the scenarios to ensure the development of the RTP is aimed at meeting the 2020 and 2035 GHG reduction targets.

## **Environmental Justice**

The 2018 RTP will include an environmental justice (EJ) analysis pursuant to Title VI of the Civil Rights Act of 1964 and Presidential Order 12898. The RTP will analyze how the benefits and burdens of transportation investments are distributed among minority and low-income populations in the region. Kern COG held its first Environmental and Social Equity Roundtable in December 2015. The roundtable provided input to help determine the methodology to be used by Kern COG to identify EJ areas. Participants include various interest areas including Tejon Tribe, California Walks, Kern County Department of Public Health, Bike Bakersfield and others.

## **Preliminary 2018 RTP Alternatives**

It is anticipated that the 2018 RTP Program EIR will evaluate three alternatives to the RTP as follows: No Project, Modified 2014 RTP; and a more aggressive infill or transportation alternative. Each alternative, except the No Project Alternative, will include a range of policies and projects including, but not limited to, variations in land use density and intensity, bus routes, high-speed passenger rail, highway/roadway construction and widening, and rail.

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 RTP. Alternatives analysis in an EIR is focused on reducing the significant or potentially significant impacts of the project. Therefore detailed alternative descriptions are developed as the impacts of the project are identified through the Program EIR process. The Preliminary 2018 RTP Alternatives include:

## ***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 2018 RTP, including all projects that have already received funding, are scheduled to receive funding, and/or have received environmental clearance by December 2017. 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 2014 RTP***

As part of the RTP and Program EIR development and scoping process, an additional alternative will be developed and considered which will be a variation on the 2014 RTP such as:

- a modified 2014 RTP alternative using the policies and projects from the 2014 RTP, updated with more recent population information;
- a modified 2014 RTP alternative using the policies and projects from the 2014 RTP focused on reducing one or more impacts identified through the Program EIR analysis; or
- a modified 2014 RTP alternative incorporating both approaches above.

## ***Intensified Transportation Alternative***

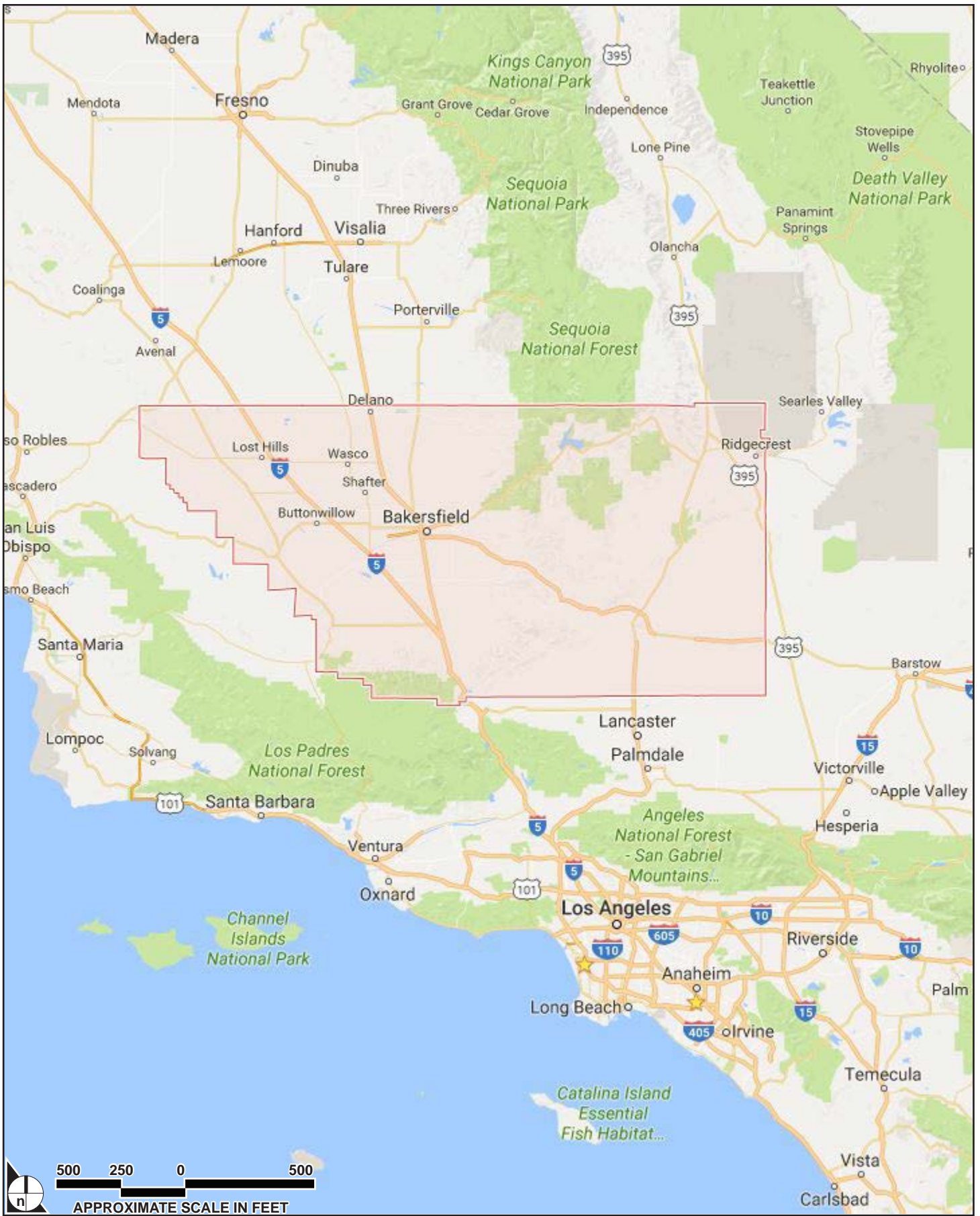
Kern COG anticipates that this alternative will vary from the proposed 2018 RTP by identifying a more intensely developed urban form and more transportation measures and policies to reduce GHG emissions and energy consumption. This alternative could include more mixed-use, infill development and increased densities in urban cores.

## **Scope of Environmental Analysis**

The impact categories listed below have been preliminarily identified for analysis in the 2018 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 and Utilities
- Recreation
- Transportation
- Tribal Cultural Resources

In addition, the EIR will address cumulative impacts, growth-inducing impacts, and other issues required by CEQA.



SOURCE: Google Maps, 2017

FIGURE 1



Becky Napier  
Regional Planner III  
Kern Council of Governments  
1401 19<sup>th</sup> Street, Suite 300  
Bakersfield, CA 93301

**Re: Comments for Notice of Preparation of a Program Environmental Impact Report (PEIR) for the Kern Council of Governments 2018 Regional Transportation Plan and Sustainable Communities Strategies (RTP/SCS)**

Dear Ms. Napier,

Leadership Counsel for Justice and Accountability is a nonprofit working with some of the most impacted disadvantaged communities in the San Joaquin and Coachella Valleys. We thank you for the opportunity to provide comments regarding the scope and content of the Notice of Preparation of a Program Environmental Impact Report (PEIR) for the Kern Council of Governments 2018 Regional Transportation Plan and Sustainable Communities Strategies (RTP/SCS).

By providing these comments, we aim for the PEIR to adequately address environmental impacts specifically with respect to disadvantaged, low-income communities and that preserves and enhances environmental quality for current and future residents in accordance with the goals and requirements of the California Environmental Quality Act (“CEQA”). Pub. Res. Code § 21000, et seq. Thus, the PEIR must provide the public with general and detailed information about the potentially significant impact and possible effects the RTP/SCS is likely to have. Sec. 15002(a). Potentially significant impacts also include (1) impacts which may be insignificant individually but “*cumulatively significant impact*” when considered along with the impacts of all other existing projects, and (2) environmental impacts with substantial adverse impacts to residents. Social and economic impacts must be considered where they *result from* an environmental effect of the project. This letter therefore identifies potentially significant environmental impacts which may arise as a result of implementation of the RTP/SCS and which should be addressed in the PEIR.

**1. Analyze and address the distribution of environmental impacts and any disparities affecting low-income people and people of color, to ensure that the benefits and burdens of RTP/SCS are fairly distributed.**

Under state law, “environmental justice” means the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies. (Gov. Code, § 65040.12, subd. (e).) Fairness in this context means that the benefits of a healthy environment should be available to everyone, and the burdens of pollution or inequitable investments should not be focused on sensitive populations or on communities that already are

experiencing its adverse effects.<sup>1</sup> “Environmental justice cannot be achieved . . . simply by adopting generalized policies and goals. Instead, environmental justice requires an ongoing commitment to identifying existing and potential problems, and to finding and applying solutions, both in approving specific projects and planning for future development.”<sup>2</sup> CEQA and its Guidelines include provisions that call for analysis of whether environmental and public health burdens might affect certain communities, including environmental justice communities.

The PEIR should explicitly and robustly identify, analyze, and address mitigations for, impacts that disproportionately affect low income communities and communities of color such as Greenfield, unincorporated Greenfield, Rexland Acres, Lamont, Weedpatch and Arvin. This includes the impacts, disaggregated by race and income, related to: inequitable access to transit, high transportation and housing cost burdens, lack of affordable housing (or poor jobs-housing fit), risk of direct and indirect displacement, and other public health factors (including those related to air quality, access to active transportation, and related chronic diseases).

**2. Ensure that the tools used to analyze the PEIR are sensitive to differences among the behaviors of and the project/policy impacts on low income communities and communities of color**

The PEIR must account in its analysis for the differences in behaviors, recreational opportunities, housing opportunities and transportation needs (including transportation to work) among different economic and racial segments of the population and between and among different geographical areas. Such an analysis will ensure the environmental impacts of project attributes will be accurately measured and considered in the PEIR. This is of particular importance for this project as inadequate (or non-existent) transit service force large numbers of low-income residents to drive long distances to work.

In 2016, the American Lung Association determined that Kern County is the most polluted county in the nation for both short-term and year-round particle emissions, and the third most ozone polluted county. Poor air quality can lead to a number of health risks, including asthma, lung cancer, and developmental harm. The PEIR must analyze and address air quality impacts and visual impacts of industrial development placed near neighborhoods due to new facilities, on-site activities, and/or truck routing through or near the community.

**The PEIR should robustly analyze and take into account the following factors, among others:**

- A. The impact of affordability and adequate housing for low income and disadvantaged communities
- B. The impact of the reliability, accessibility and affordability of public transit and infrastructure for low income communities and communities of color
- C. Transit connectivity (reliability, accessibility, and affordability), availability of affordable housing (including the amount of affordable housing in healthy and high-opportunity areas), and displacement risk.
- D. The impact of emissions from car and truck traffic and/or polluting land uses in proximity to existing communities or sensitive receptors
- E. Impact of growth and development projections on existing disadvantaged communities
- F. Impacts on air quality and water availability in existing communities as a result of anticipated development in scenario projections

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<sup>1</sup> Kamala D. Harris, Attorney General, *Environmental Justice at the Local and Regional Level*, available at: [http://oag.ca.gov/sites/all/files/pdfs/environment/ej\\_fact\\_sheet.pdf](http://oag.ca.gov/sites/all/files/pdfs/environment/ej_fact_sheet.pdf).

<sup>2</sup> Id.

- G. Impact of new development on economic and physical displacement of residents and businesses in existing disadvantaged communities (both urban and rural)
- H. Impact of increased ambient or excessive noise levels due to co-location of processing and manufacturing plants or other land uses that generate significant amounts of noise on site and/or through the generation of truck traffic and existing or planned development
- I. Health impacts associated with each proposed scenario on low income communities and communities of color
- J. Impact of proposed transportation expenditure plan on low income communities and communities of color.

\* \* \* \* \*

We welcome sustained collaboration and will continue to engage in the RTP/SCS process. We look forward to seeing our comments addressed in the PEIR.

Thank you for your consideration,

Patricia Leal-G.  
Leadership Counsel for Justice and Accountability  
Policy Advocate

## NATIVE AMERICAN HERITAGE COMMISSION

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June 2, 2017

Becky Napier  
Sacramento County

Sent by Email: [napier@kerncog.org](mailto:napier@kerncog.org)

RE: SCH#2017041081, 2018 Regional Transportation Plan/Sustainable Communities Strategy, Kern County

Dear Ms. Napier:

The Native American Heritage Commission has received the Notice of Preparation (NOP) for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000 et seq.), specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit. 14, § 15064.5 (b) (CEQA Guidelines Section 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared. (Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd. (a)(1) (CEQA Guidelines § 15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

**CEQA was amended significantly in 2014.** Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code § 21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code § 21084.3 (a)). **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. § 800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments. **Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.**

#### AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or

tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- a. A brief description of the project.
  - b. The lead agency contact information.
  - c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code § 21080.3.1 (d)).
  - d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code § 21073).
2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code § 21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or environmental impact report. (Pub. Resources Code § 21080.3.1(b)).
- a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18). (Pub. Resources Code § 21080.3.1 (b)).
3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
- a. Alternatives to the project.
  - b. Recommended mitigation measures.
  - c. Significant effects. (Pub. Resources Code § 21080.3.2 (a)).
4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
- a. Type of environmental review necessary.
  - b. Significance of the tribal cultural resources.
  - c. Significance of the project's impacts on tribal cultural resources.
  - d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code § 21080.3.2 (a)).
5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code § 21082.3 (c)(1)).
6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
- a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
  - b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code § 21082.3 (b)).
7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
- a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
  - b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code § 21080.3.2 (b)).



8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code § 21082.3 (a)).
9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code section 21084.3 (b). (Pub. Resources Code § 21082.3 (e)).
10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
  - a. Avoidance and preservation of the resources in place, including, but not limited to:
    - i. Planning and construction to avoid the resources and protect the cultural and natural context.
    - ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
  - b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
    - i. Protecting the cultural character and integrity of the resource.
    - ii. Protecting the traditional use of the resource.
    - iii. Protecting the confidentiality of the resource.
  - c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
  - d. Protecting the resource. (Pub. Resource Code § 21084.3 (b)).
  - e. Please note that a federally recognized California Native American tribe or a nonfederally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code § 815.3 (c)).
  - f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code § 5097.991).
11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An environmental impact report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
  - a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
  - b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
  - c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code § 21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: [http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation\\_CalEPAPDF.pdf](http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf)

## SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code § 65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: [https://www.opr.ca.gov/docs/09\\_14\\_05\\_Updated\\_Guidelines\\_922.pdf](https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf)

Some of SB 18's provisions include:

1. **Tribal Consultation:** If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code § 65352.3 (a)(2)).
2. **No Statutory Time Limit on SB 18 Tribal Consultation.** There is no statutory time limit on SB 18 tribal consultation.
3. **Confidentiality:** Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code section 65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction. (Gov. Code § 65352.3 (b)).
4. **Conclusion of SB 18 Tribal Consultation:** Consultation should be concluded at the point in which:
  - a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
  - b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at:  
<http://nahc.ca.gov/resources/forms/>

#### NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center ([http://ohp.parks.ca.gov/?page\\_id=1068](http://ohp.parks.ca.gov/?page_id=1068)) for an archaeological records search. The records search will determine:
  - a. If part or all of the APE has been previously surveyed for cultural resources.
  - b. If any known cultural resources have been already been recorded on or adjacent to the APE.
  - c. If the probability is low, moderate, or high that cultural resources are located in the APE.
  - d. If a survey is required to determine whether previously unrecorded cultural resources are present.
2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
  - b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.
3. Contact the NAHC for:
  - a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

- b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.
4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
- a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
  - b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
  - c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions, please contact me at my email address: [sharaya.souza@nahc.ca.gov](mailto:sharaya.souza@nahc.ca.gov).

Sincerely,



Sharaya Souza  
Staff Services Analyst  
cc: State Clearinghouse